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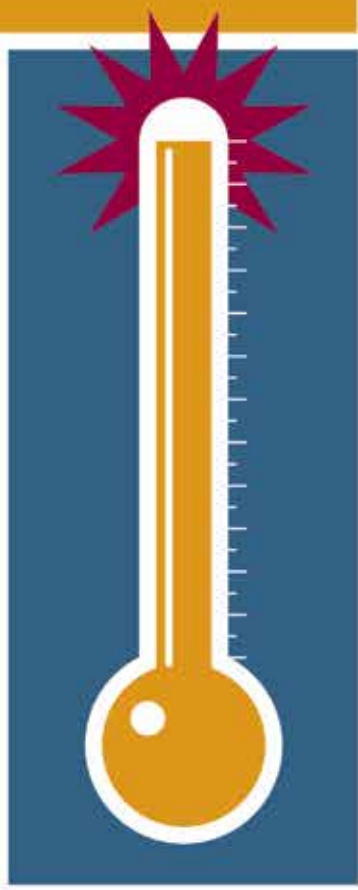

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EDITOR'S MESSAGE

Education in Bloom: New Crop of Students Honing Skills to Develop Better Care Solutions

Paula Gregory, DO, MBA, FACOFP

I trust you all enjoyed ACOFP '23 as much as I did and were interested to hear the lecture about on our osteopathic college's growth and community preceptors. Learning with those who see and treat patients is the highlight of medical school. The physician preceptors accelerate learning about the "real world" as well as diagnosis, treatment, and connecting with patients.

As I write, I'm reminded of my own journey into medicine, the excitement I experienced as a student, and the endless possibilities of learning about health and disease. Learning what is relevant and moving, from the zebras to reasonable paths for patients, is a big part of the journey. This brings to mind Bloom's taxonomy, which begins with learning the fundamentals or basic facts about a subject in order to create a solid foundation on which to stand. This is followed by an application of those facts, an analysis, a synthesis, and evaluation. Our learners will progress through those stages and become dependable over time. Students begin by learning and assimilation of facts, gradually progress to being good reporters of the facts they've absorbed, and then move on to applying those ideas to paper cases and eventually to real patients. As a student progresses, they eventually reach a level of competency that makes them dependable and reliable in analyzing and creating solutions based on what they have learned.

Common discussions revolve around what learners need to know at each stage of development. This guides teachers in understanding what needs to be taught. A learner should be able to recognize certain chronic diseases and acute problems by the beginning of their third year of medical school. They need to be competent in examining patients and judicious in ordering the labs and x-rays necessary to confirm diagnoses. Our proposed medical school will ensure that students, at the early-third-year stage, will be able to gather and assess information, perform a competency-based physical exam, and report back to the physician with some degree of accuracy.

A graduate candidate of a medical school should, by the end of their fourth year, be dependable enough to analyze, evaluate, and create solutions to treat most of the diseases that they encounter daily in patients. Residency provides students the ability to see a number of different cases, so that recognition of most of the common diseases we treat is possible. It's a long journey to becoming the accomplished physician who will care for patients. I'm certain that with the help of the proposed Meritus School of Osteopathic Medicine inaugural faculty, students will be far richer in knowledge than physicians of our generation were as newly minted graduates.

Of course, our journeys do not stop with graduation from residency. As we become increasingly confident in our care, we recognize that there are many other confounding problems to the health picture. We are sometimes at a loss to understand patients who have delayed care and neglected to control some of the simple problems we learned about in medical school. Issues of hypertension and diabetes, for example, and diagnosing diseases such as cancer all are better managed early. Every issue has its own temporal nature where the damaged system only gets more difficulty to treat.

Our patients are sicker and have more difficulty than ever before. Can we apply Bloom's criteria to health disparities? We are aware from our respective fields that so many of our patients have neglected to take advice and or have been unable to receive care early on after their diagnoses.

As we work in our specific disciplines, are there solutions to problems of disparities that can be alleviated by changing a process, design, or function? Is it time to create solutions and generate new ideas to address these issues? Bloom's criteria would move us from reporting problems to providing expert solutions. Physicians are accomplished and resilient people in health care. It is concerning when patients do not show up for appointments, have transportation issues or long distances to travel, or issues with insurance coverage; indeed, all add to the worsening health of our population.

Research has shown us that transportation, food insecurity, and delayed care are among the issues keeping our patients from wellness. As noted in the Journal of National Cancer Institute in 2022, delay in seeking care escalates the morbidity of many of commonly found cancers, such as colon and lung. Morbidity and mortality of Black women after they give birth has been connected to poorly controlled diabetes, hypertension, and other chronic conditions created by access to care.[1] Every field of medicine ties back to caring for the patient's basic needs. There is not a discipline untouched by these issues.

Physicians are the caring, intelligent champions of our community and their patients. Creating an educational system to train more of them is one solution that addresses the number of physicians needed to take care of our communities. Physician involvement will create a robust, intentional, and impactful plan to increase physician providers throughout communities to better the health of patients.

What other solutions make sense for removing the barriers to good health, changing the community, and, eventually, the health of our nation?

Our charge is simple: we are the experts on our patient's needs. Now how do we get their needs met? Let's lean into the solutions and go from reporter to expert on community needs, so that our patients live healthier lives. Let's open the discussion with our local leaders in ways to create effective solutions.

REFERENCES

1. US Centers for Disease Control and Prevention. "Working together to reduce Black maternal mortality." April 3, 2023. https://www.cdc.gov/healthequity/features/maternal-mortality/index.html.

CALENDAR OF EVENTS

JUNE 2–4, 2023
Maine Osteopathic Association Annual Convention
Maine Chapter of the American College of Osteopathic Family Physicians
Rockport, ME
osteopathic.org/event/112th-moa-annual-convention/

JUNE 9–11, 2023
Texas Osteopathic Medical Association Annual Convention
Texas ACOFP
San Antonio, TX
txosteo.org/annual-convention

JUNE 15–18, 2023
Direct Primary Care Summit
Minneapolis, MN
dpcsummit.org/

JUNE 23–25, 2023
ACOFP Future Leaders Conference
Louisville, KY
acofp.org

JULY 28–29, 2023
Florida Society of the ACOFP Virtual Family Medicine Update and Convention
fsacofp.org/
Virtual

JULY 27–30, 2023
Michigan Summer Family Medicine Update
Michigan Association of Osteopathic Family Physicians
Grand Rapids, MI

AUGUST 2–6, 2023
ACOFP-CA
Anaheim, CA

AUGUST 4–6, 2023
POFPS Annual CME Symposium
Pennsylvania Osteopathic Family Physicians Society
Hershey, PA

AUGUST 11–13, 2023
NCS-ACOFP Annual Conference
North Carolina Society of the ACOFP
Pinehurst, NC

OCTOBER 6–9, 2023
OMED 2023
American Osteopathic Association
Orlando, FL

APRIL 4–7, 2024
ACOFP 61st Annual Convention & Scientific Seminars
American College of Osteopathic Family Physicians
New Orleans, LA

SEPTEMBER 19–22, 2024
OMED 2024
American Osteopathic Association
San Diego, CA

FROM THE PRESIDENT'S DESK

Legacy in the Making: Leading Engagement, Relationships, and Growth to Achieve New Heights for ACOFP

David J. Park, DO, FAAFP, FACOFP *dist*.

Greetings!

As the newly installed president of the ACOFP, I am honored to share my greetings with you as we look forward to an exciting year filled with unlimited potential! It is with great pride that I take on this responsibility, and I am excited to work with you all toward achieving our common goals together as family physicians and students committed to family medicine.

The top three priorities for my presidential year are to (1) enhance membership engagement, (2) maximize collaborations with other organizations, and (3) continue the growth of our organization.

I believe that our success as an organization is directly tied to the engagement and involvement of you, our members. Therefore, one of my top priorities is to boost membership engagement. This includes creating more opportunities for members to get involved in ACOFP events and initiatives, promoting knowledge sharing and networking opportunities, and providing more support for your professional development.

Collaboration with other organizations is another key priority for me. By working closely with other leaders of organized medicine, we can maximize our impact and bring about positive change in the specialty of osteopathic family medicine. I look forward to fostering relationships and partnerships with other organizations to increase our reach and influence across all stakeholders.

Finally, I am committed to continuing the growth of our great organization. This means expanding our membership base, increasing the diversity of our members, especially in leadership, and elevating our brand and profile within the communities we serve. I believe that by building a strong and vibrant organization, we can better serve all our members and, ultimately, the patients we serve.

I look forward to engaging with you all and am excited about the possibilities that lie ahead as our profession grows. Together, we can achieve new heights for the ACOFP, and I hope to leave behind a lasting legacy with you.

Sincerely,

David J. Park, DO, FAAFP, FACOFP *dist*.
2023–24 ACOFP President

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TOPIC CATEGORIES INCLUDE:

FALL 2023:

WOMEN'S HEALTH:

- Pap smear review & recommendations
- Pregnancy-induced hypertension
- Gestational diabetes
- Maternal mortality
- Breast health
- Dysmenorrhea
- Menopause
- Hormonal concerns and treatment
- Gynecologic concerns for aging women

PATIENT EDUCATION HANDOUTS:

- Pap smear description and guidelines
- Pregnancy-induced hypertension
- Gestational diabetes
- Breast exams

WINTER 2023–24:

DOMESTIC & WORKPLACE VIOLENCE:

- Intimate partner violence / domestic abuse
- Child abuse
- Elder abuse
- Gun violence
- Violence against health care workers
- PTSD diagnosis and treatment
- Patient communication strategies
- Human trafficking

PATIENT EDUCATION HANDOUTS:

- How to get help
- Elder abuse signs
- Child abuse signs

SPRING 2024:

ONCOLOGY:

Screening and detection guidelines.
Up-to-date treatments.
Guidelines for cancer surveillance.

- Lung
- Breast
- Colon
- Leukemia/lymphoma
- Thyroid
- Ovarian
- Prostate
- Renal cell carcinoma
- Childhood cancers

PATIENT EDUCATION HANDOUTS:

- Colon cancer
- Lung cancer
- Breast cancer
- What is chemotherapy?

SUMMER 2024:

PULMONARY:

- Pneumonia
- Sleep apnea
- COPD
- Asthma
- Pulmonary artery hypertension
- Solitary pulmonary nodule
- Interstitial lung disease
- Osteopathic treatment of pulmonary disease

PATIENT EDUCATION HANDOUTS:

- Asthma
- How to properly use an inhaler
- Smoking cessation
- Sleep apnea

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REVIEW ARTICLE

OSTEOPATHIC MANIPULATIVE TREATMENT OF CHRONIC PELVIC PAIN DUE TO HIGH-TONE PELVIC FLOOR DYSFUNCTION

Morgan E. Barnett, DO, PGY-1[1]; Kyle K. Henderson, PhD[2,4]; Teresa L. Elliott-Burke, DPT[3]; Kurt P. Heinking, DO, FAAO[4]

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KEYWORDS

Chronic pelvic pain

OMT

CPPS

HTPFD

ABSTRACT

Context: Chronic pelvic pain syndrome (CPPS) is a complex pain syndrome that affects 15%–30% of people of childbearing age (~10–20 million, US).[1] Etiologies range from musculoskeletal conditions and visceral disease to neurological and psychological disorders. The interplay of many systems and disorders can manifest into a complex pathophysiology that is difficult to diagnose and treat. Dysfunction of the musculoskeletal system is often involved in patients with CPPS, either as the cause of pain or the result of underlying disease or dysfunction. Hypertonicity of pelvic floor muscles, myofascial trigger points, and dysfunctional shortening of the levator ani group of muscles contribute to the structural and functional abnormalities involved in CPPS.[2] Osteopathic physicians are in a unique position to directly address this somatic dysfunction with a nonpharmacologic, nonsurgical approach: osteopathic manipulative treatment (OMT).

Objectives: The purpose of this article is to review the literature on manual treatment efficacy for high-tone pelvic floor dysfunction (HTPFD) and the standardization of diagnosis to provide rational, medically based treatments. The second purpose is to elucidate the steps that the medical, and specifically the osteopathic profession can take to standardize pelvic floor evaluation, diagnosis, and treatment in the primary care setting.

Methods: A search was conducted on the US National Library of Medicine's PubMed database for studies involving manual therapy treatment for HTPFD. The authors excluded studies that described manual therapy interventions aimed at increasing pelvic floor muscle tone in patients with urinary incontinence and/or pelvic organ prolapse.

Results: For perspective, the initial search using the keywords "chronic pelvic pain syndrome" led to 2,281 publications since 1974; the addition of "osteopathic" led to 10 results since 2009. The search for "high-tone pelvic floor dysfunction" led to 30 publications since 1992; the addition of "osteopathic" yielded no results. To evaluate the efficacy of manual therapy for HTPFD, the search was expanded to include any manual therapy protocols. While the consensus in the literature is that manual treatment for chronic pelvic pain (CPP) is efficacious, the finding is limited by the lack of a comprehensive protocol to appropriately diagnose and treat the patient. The authors propose a system to standardize the assessment of a patient with CPP in the primary care setting by an appropriately trained physician so that pelvic floor dysfunction is recognized, properly diagnosed and treated, or referred to specialized care.

Conclusion: The literature supports that manual therapy is an effective treatment for CPP, and as primary care providers, osteopathic physicians are uniquely placed to recognize and treat patients with HTPFD, providing an empathetic, patient-centered approach. Standardization of the diagnosis and manual treatment of HTPFD is required to assess and monitor patients systematically. Development of an advanced training program for clinicians to learn diagnostic approaches and OMT for the pelvic floor should be required since the techniques addressing the pelvic floor musculature are often not included in traditional training.

INTRODUCTION

Chronic pelvic pain (CPP) disproportionately affects those capable of pregnancy, accounting for 10% of gynecologic consultations, and it is estimated that 30%–70% of cases involve a somatic component.[1] Chronic pelvic pain syndrome (CPPS) is a multifactorial pain disorder that localizes to the pelvic area and persists for longer than 6 months. Structural and functional abnormalities involved in CPPS include hypertonicity of pelvic floor muscles, trigger points in the vulvar area, and shortening of the levator ani group of muscles that comprise the deep pelvic floor.[2] Chronic pelvic pain syndrome is characterized by a dysfunctional pain system and psychological distress. Patients with CPPS are evaluated and treated by multiple specialties, spanning from primary care to subspecialty care. High-tone pelvic floor dysfunction (HTPFD) is a common cause of CPPS and has been described in colorectal and osteopathic publications as coccygodynia, tension myalgia of the pelvic floor, and levator ani syndrome.[3,4] High-tone pelvic floor dysfunction may also cause poorly localized pain in the perivaginal, perirectal, lower abdominal, pelvic, suprapubic, coccygeal, or posterior thigh regions. In addition to pain, it may cause vulvar and clitoral burning, dyspareunia, and voiding difficulties.[5] Journals in urology have found HTPFD implicated in interstitial cystitis/painful bladder syndrome.[6] Gynecologic literature is beginning to recognize the role of the musculoskeletal system in patients with dyspareunia,[7] notably vulvodynia and vaginismus. Due to this, pelvic floor physical therapy is recognized as a first-line, conservative treatment option for pelvic floor disorders instead of surgical or hormonal treatment.[8]

The interplay of musculoskeletal, neurological, and psychological components in CPPS contributes to a patient's perception of pain. A differential diagnosis should consider the interplay of gynecologic, urologic, gastroenterological, neurologic, musculoskeletal, and psychological etiologies. To address musculoskeletal components of CPP, patients should receive a musculoskeletal assessment. This includes an external assessment of the abdomen, lumbar spine, sacrum, and pelvis and a complete pelvic exam, including the pelvic floor, to determine the presence of somatic dysfunction. Somatic dysfunction is defined as impaired or altered function of related components of the somatic (body framework) system: skeletal, arthrodial, and myofascial structures and their related vascular, lymphatic, and neural elements.[9] Once somatic dysfunction is diagnosed, osteopathic physicians are in a unique position to directly address high-tone pelvic floor somatic dysfunction with a nonpharmacologic, nonsurgical approach: osteopathic manipulative treatment (OMT). Osteopathic manipulative treatment (performed by the osteopathic physician) and manual therapy (performed by the physical therapist) are very similar modalities and are indicated to treat somatic dysfunction. Together, they will be referred to as manual treatment. The purpose of this paper is to summarize the literature on manual treatment efficacy for HTPFD and elucidate the steps the osteopathic profession can take to standardize pelvic floor evaluation, diagnosis, and treatment in the primary care setting.

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LITERATURE SEARCH METHODS

A search was conducted on the US National Library of Medicine's PubMed database for studies involving manual treatment for HTPFD using the keywords: high-tone pelvic floor, nonrelaxing pelvic dysfunction, chronic pelvic pain, chronic pelvic pain syndrome, pelvic floor physical therapy, pelvic floor manual therapy, myofascial physical therapy, osteopathic manipulative therapy, OMT, osteopathic, and osteopathic manipulative medicine. We reviewed each publication for its relevance to HTPFD, methodology, and scope. The authors excluded studies on CPPS that focused on increasing pelvic floor muscle tone in patients with urinary incontinence and/or pelvic organ prolapse.

Literature search results:

Research on pelvic floor dysfunction is complex because many conditions are implicated, including urinary, psychiatric, gastrointestinal, neurologic, and musculoskeletal etiologies. Only in the last decade has research consistently distinguished between different types of pelvic pain (nociceptive versus neuropathic), and characterization of muscle tone (high- vs low-tone). Existing research on the efficacy of manual treatment on HTPFD was largely composed of pilot studies, trials with small population sizes, and a handful of randomized controlled trials (Table 1). Similarly, a recent systematic review on physical therapy for pelvic floor hypertonicity since the year 2000 identified four randomized clinical trials, five prospective studies, and one case study.[10] Overall, studies demonstrate manual treatment efficacy.[2,6,11–14] The absence of OMT studies highlights the need for the osteopathic profession to standardize evaluation, diagnosis, and treatment of somatic dysfunction in the pelvic floor musculature.

Musculoskeletal structural examination findings:

Tu et al investigated the frequency of positive musculoskeletal exam findings, including abnormalities in pelvic, abdominal, back, and lower extremity examination, between 19 women with CPP and 20 healthy controls.[15] The study demonstrated that patients with CPP were more likely to have iliac crest height asymmetry, positive posterior pelvic provocation (SI compression), pubic symphysis height asymmetry, dysfunctional tone, and higher pelvic floor tenderness. It is unclear whether pelvic asymmetry contributes to pain syndromes through kinetic chain disruption in the pelvis, back, and abdomen, or if anatomic changes in the region develop because of pain and guarding.[4]

Pathophysiology of HTPFD:

Resting hypertonicity can result from voluntary or involuntary holding, injury to the pelvic floor or pelvis from physical or orthopedic trauma, visceral pain syndromes (irritable bowel syndrome, endometriosis, interstitial cystitis),[16] chronic stress,

surgery, or history of psychological or sexual trauma.[15,17] Pelvic organs are connected functionally through shared common neural pathways, not just by anatomic proximity. The concept of visceral convergence is important in the evaluation of pelvic pain; with significant overlap of sensory fibers and visceral afferents in the pelvis, pain may be broadly referred to the abdominal wall.[5] Due to this convergence, bowel and bladder symptoms often accompany gynecological symptoms such as dysmenorrhea and vulvodynia.[18,19] Continual pelvic guarding is a suggested etiology of interstitial cystitis/painful bladder syndrome and vulvodynia.[12] Persistent contraction results in the activation of muscle afferent C-fibers and eventual release of substance P centrally and peripherally, leading to neuronal hyperexcitability. Relative ischemia of the muscle also contributes to the pathophysiological process.[20] Through these pathophysiological mechanisms, high-tone dysfunction of the pelvic muscles and CPP can be seen in patients with endometriosis, sequelae of pelvic inflammatory disease, ovarian cysts, pelvic vascular congestion, myofascial pain syndrome, irritable bowel syndrome, interstitial cystitis, nephrolithiasis, primary dysmenorrhea, postural alterations, musculoskeletal diseases, and somatic dysfunction.[18,19]

Evaluation and diagnosis for HTPFD patients:

Under appropriate clinical conditions, with sensitive exam precautions and informed patient consent, a properly trained physician should complete a standardized assessment of the pelvic floor musculature to obtain an accurate diagnosis of HTPFD, and in doing so, identify cases that may be amenable to manual treatments. Accurate and specific diagnoses of somatic dysfunction allow physicians to tailor treatment to each patient and give the provider specific areas to reassess to determine the patient's response to manual treatment. Because of the anatomic location and invasiveness of the manual technique procedures, patient trust in their physician and consent to treatment are of paramount importance. It is essential for clinicians to provide clear instructions on how long each treatment takes, the number of treatments proposed, and any postprocedure instructions. Outcome measures (analog pain scale, lower urinary tract symptoms, pelvic pain index) should be used to gauge if treatments are beneficial and guide the clinical treatment plan. Clinicians treating this condition should have the prerequisite knowledge in pelvic anatomy and physiology, genitourinary and gynecological conditions, diagnostic methods, behavioral considerations, and manual, surgical, and pharmacologic treatment approaches. Enhanced training and standardization among therapists, physicians, and other clinicians can improve the quality of care, reduce patient anxiety, and decrease clinician liability. The following information on the musculoskeletal system, the pelvic floor, and psychosocial factors may help obtain a specific diagnosis of HTPFD in CPPS patients.

External pelvic examination recommendations:

Restriction of motion in the pelvic girdle may have a profound effect on the pelvic floor musculature and cause or contribute to complaints of abdominal pain, pelvic pain, dysmenorrhea, and lower back pain. In each scenario, the sacrum and the pelvis should be examined and treated for associated somatic dysfunction. There is an integrated function between the muscles of the gluteal region, the abdominal diaphragm, and the pelvic floor musculature.[4] A relaxed pelvic diaphragm is necessary for efficient movement of lymphatic fluids away from the pelvis and perineal tissues. Somatic dysfunction of the symphysis pubis and asymmetric position of the ilium can place asymmetric tensions on the pelvic floor musculature. Tension on the pubovesical fascia from innominate dysfunction may produce urinary tract symptoms such as burning, frequency, fullness, and a weak stream. Pregnancy can contribute to asymmetric alignment of the pelvic floor due to a shift in center of gravity and increased lumbar lordosis, which may lead to an anterior rotation or obliquity of the pelvic structures. Examination of the sacrum is also important, as sacral pain and pressure from uterine contractions can affect iliosacral mechanics. Iliosacral somatic dysfunctions are characterized by a positive standing flexion test with a negative seated flexion test and asymmetry between anatomic landmarks: pubic symphysis, anterior superior iliac spines, posterior superior iliac spines, and medial malleoli.[21] Somatic dysfunction of the pubic symphysis is common and often overlooked. Pubic symphysis shears have been attributed to producing symptoms that mimic those of cystitis. The external examination of the sacrum includes finding a negative standing flexion test with a positive seated flexion test and includes assessing anatomical landmarks such as the sacral sulcus, inferior lateral angles, and L5 for asymmetries.[21]

Pelvic floor examination recommendations:

Before manual treatment of the pelvic floor, current recommendations include an external and internal examination.[8] Patients with HTPFD exhibit tender pelvic floor musculature and impaired function. A systematic review by Meister et al found 55 studies that assessed pelvic floor myofascial pain in women and evaluated their physical examination methods. Overall, they found that methods varied significantly between studies and were frequently undefined, but based on the consensus in the literature, they outlined a recommended examination sequence. They provide a detailed recommendation for the structure of a physical examination of myofascial pelvic pain.[22] A detailed guide on pelvic floor assessment was recently published by Harm-Ernandes et al.[23] Both incorporate a clock-face method to localize palpation to specific musculature.[24,25] Briefly, the physician should palpate the superficial and deep pelvic floor muscles and obturator internus for tenderness (rating tenderness on a 1–10 scale) using a single digit at a single site in the middle of the muscle belly. Following treatment, reassessment should include another evaluation of these parameters for improvement. Few providers assess for pelvic floor myofascial tenderness using an internal examination due to lack of specific training. A standardized and reproducible physical exam for evaluating patients with CPPS would ensure that all patients are thoroughly examined, accurately diagnosed, and appropriately treated.

Evaluation of psychological factors contributing to pain:

The experience of pain in patients with chronic pain syndromes is frequently complicated by somatization and catastrophizing. Pain type, quality, and intensity can reveal pathophysiological

mechanisms that underlie patient symptoms. Physicians need to quantify a patient's pain to fully address all facets of the clinical presentation. Passavanti et al demonstrated the utility of specific pain questionnaires for patients with CPPS.[26] In summary, they highlight the utility of questionnaires in four key areas: (1) Multidimensional pain: To assess the relevant features of pain and its effect on quality of life for patients with chronic pain (MPQ or SF-MPQ). (2) Neuropathic pain: To distinguish from nociceptive pain, use the New Neuropathic Pain Diagnostic Questionnaire (DN4). (3) CPPS-specific: Used for CPP evaluation (Pelvic Pain Assessment Form) and additional utility for diagnostic and therapeutic purposes (UPOINT). A physician may consider using a symptom index, such as the Interstitial Cystitis and Problem Index scores (ICSI/ICPI-the O'Leary-Sant symptom index) to monitor treatment efficacy. The specific questionnaire will vary depending on formal diagnosis. (4) Psychological: To reveal the complexity of a patient's pain for psychological comorbidities, Grinberg et al tracked changes in a battery of psychological tests before and after myofascial physical therapy and found improvements after therapy in the State-Trait Anxiety Inventory, the Brief Symptom Inventory, the Pain Catastrophizing Scale, and the Beck Depression Inventory.[2] Depending on each individual patient, further psychological screening may be warranted, including screening for depression, generalized anxiety disorder, or post-traumatic stress disorder.

Osteopathic manipulative treatment for HTPFD:

During the external and internal physical examination, if the clinician finds the tissues of the pelvic region to have (1) asymmetry, (2) motion restriction, (3) tissue texture changes, and (4) local tenderness, a diagnosis of somatic dysfunction of the pelvis is made. Before treating this somatic dysfunction with osteopathic manipulative treatment, informed consent is obtained and clinicians need to consider the indications and contraindications. Although the indications to perform OMT are variable, the following four criteria, coupled with lower urinary tract symptoms (dysuria, frequency, urgency, dyspareunia, etc.) or pain in the lower abdomen, pelvic girdle, sacrum, hip, groin, or leg, provide the indication to proceed with OMT.[27] Contraindications to osteopathic treatment of the patient with HTPFD follow the usual contraindications for adults with female anatomy. Absolute contraindications include a surgical emergency, undiagnosed bleeding, or inability to consent for any reason. Relative contraindications include patients with diseases causing bone fragility who should not be treated with high-velocity, low-amplitude, or forceful techniques. Local invasive cancer due to the risk of tumor seeding and very ill patients should only be treated for brief periods.[5] Contraindications for the pregnant patient should also include undiagnosed vaginal bleeding, threatened or incomplete abortion, ectopic pregnancy, placenta previa, placental abruption preterm, premature rupture of membranes, preterm labor, prolapsed umbilical cord, eclampsia, and surgical or medical emergencies.[5]

The pelvic diaphragm can be treated with direct or indirect myofascial release, inhibitory pressure, and counterstrain. Myofascial release can be done with an external approach to address the pelvic floor. However, the pelvic floor may also be evaluated and treated with an internal approach, either vaginally or rectally. When preparing to do internal treatments with counterstrain for the pelvic floor, the patient is usually examined in the dorsal lithotomy position. A tenderpoint is identified with a gloved finger on the perineum, or in the vagina, contacting the muscular layer. As the tenderpoint is monitored with one finger, the clinician may induce flexion or extension of the hip by moving the leg toward or away from the patient. Rotation of the hip and pelvis can also be employed using the clinician's free hand. The counterstrain position is held for 90 seconds while monitoring until the tissue tension and tenderness abates.[5]

For somatic dysfunction found on the internal examination of the pelvic floor muscles, OMT may be indicated.[28] Patients with CPP often have palpable tender areas or "trigger points" in their pelvic floor musculature. Travell and Simons identified trigger points in the muscles of the pelvic floor that may be amenable to inhibitory pressure, counterstrain principles, or myofascial techniques using vaginal palpating digits.[4] When somatic dysfunction of the cardinal, uterosacral, and round ligaments is found, myofascial techniques, counterstrain, and balanced ligamentous tension, may be used to normalize the ligament tensions and restore the cervix to its normal midline position.[5] Manual treatments provide a well-tolerated, noninvasive treatment method that can be quite beneficial for patients.

Proposed history and physical exam for chronic pelvic pain:

Based on the information from this narrative review, the authors propose the following flow chart to help standardize the diagnosis of CPP (Figure 1). This flow chart outlines the components of a thorough patient history (including features of presentation, past medical history, and questionnaires for pain and psychological comorbidities) and a focused physical exam (including recommendations for a GI/GU exam, external and internal musculoskeletal exams, and a neurologic exam). Use of a systematic and standardized approach to the musculoskeletal exam will allow physicians to improve diagnosis and determine efficacy of treatments.

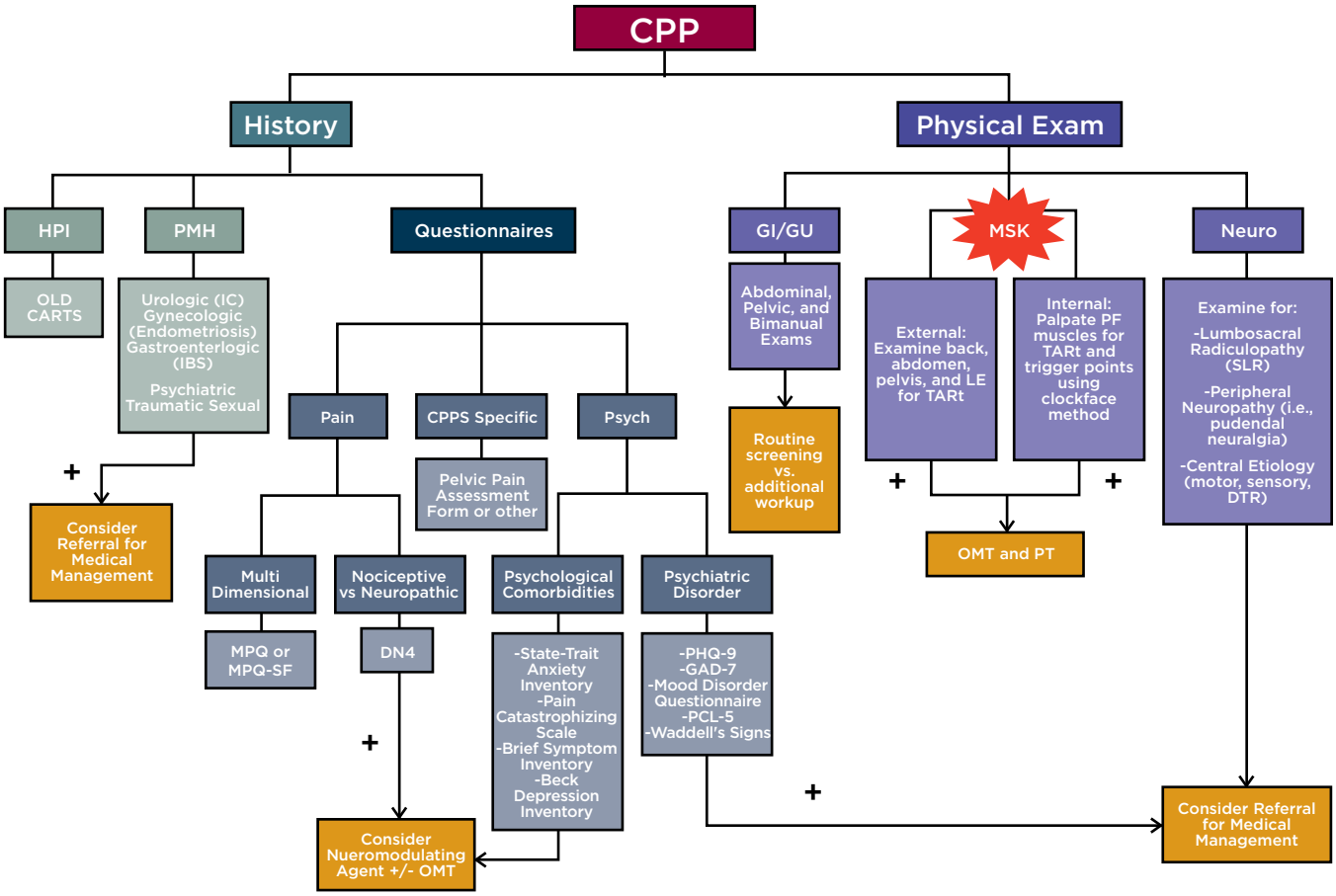

FIGURE 1:
Standardizing the diagnosis of chronic pelvic pain flow chart.

SUMMARY

CPPS is a complex syndrome involving structural and functional abnormalities of pelvic floor muscles, a dysfunctional pain system, and psychological components that requires a multifaceted, interdisciplinary team treatment approach. Creation and sustainability of a multidisciplinary clinic that treats patients with HTPFD is feasible.[29] Standardization of the diagnosis of HTPFD is required to assess and monitor patients systematically. The creation of an advanced training program for clinicians to learn diagnostic approaches and OMT for the pelvic floor would be beneficial since techniques addressing the pelvic floor musculature are often not included in traditional allopathic/osteopathic training. An advanced training program would instruct clinicians in patient selection, communication, patient safety, and proper diagnostic and manipulative treatment methods. While a neuromusculoskeletal medicine fellowship opportunity for osteopathic physicians provides more focused training in OMM, the profession may also benefit from looking to the precedent set by American Physical Therapy Association. National physical therapy organizations provide additional specific curriculum for physical therapists that provide manual treatments to this sensitive region.

CONCLUSION

Overall, manual treatment is an effective approach for CPP. For patients who respond to manual treatment and require more frequent appointments, a course of physical therapy combined with OMT may be beneficial. Since underlying trauma may be involved in this patient population,[17] effective treatment relies on a strong patient-physician relationship, particularly one founded on good communication, trust, consent, and patient empowerment. Doctors of osteopathic medicine are uniquely placed as primary care providers to recognize and treat patients with HTFPD, providing an empathetic, patient-centered approach that considers the unique factors contributing to a patient's pathophysiology and addressing the interrelated musculoskeletal, neurological, and psychological components of the disease process. Working together in an interprofessional and complimentary way, DOs and PTs can offer hope to patients with CPPS to overcome their condition and lead a more comfortable and functional life.

TABLE 1:
Studies evaluating efficacy of manual therapy for high-tone pelvic floor dysfunction or HTPFD-associated condition

STUDY	n	TREATMENT	STUDY DESIGN	OUTCOME MEASURE	RESULTS/LIMITATIONS	YEAR
Lukban et al.[6]	16	Manual PT	Pilot	Modified Oswestry Score, ICSI	4% improvement in irritative bladder symptoms and dyspareunia	2001
Oyama et al.[11]	13	Modified Thiele massage: 2x/week x 5 weeks	Pilot	ICSI, ICPI, Likert Visual Analog for pain and urgency, Physical Component Summary, Mental Component Summary, Modified Oxford Scale	Statistically significant improvements in all outcome measures after protocol completion; results remained statistically significant at long-term follow-up in all measures except for Physical and Mental Component Summaries; Uncontrolled	2004
Fitzgerald et al.[12]	81	Myofascial PT vs. Global therapeutic massage (GTM): up to 10 treatments over 12 weeks	Randomized clinical trial	7-Point Global Response Assessment	26% improvement in GTM and 59% improvement in MPT	2012
Bedaiwy et al.[13]	146	PT	Retrospective chart review	Pain scores	Pain rating improvement from 9 (median) at start, to 5 midtreatment, to 2.5 at final treatment	2013
Grinberg et al.[2]	39	Myofascial PT (8 weekly sessions) vs. nontreated group	Prospective, longitudinal, cohort	Morphologic parameters, pain system functioning, psychological changes	MPT has anatomical, neurophysiological, and psychological therapeutic effects, in addition to long-lasting pelvic pain alleviation	2019
Schvartzman et al.[14]	42	Pelvic floor muscle training (PFMT) group vs. lower back (LB) group	Randomized clinical trial	Pain scores (dyspareunia) using 10-Point Visual Analog Scale	Mean pain scores in the PFMT group decreased from 7.77 ± 0.38 to 2.25 ± 0.30 and in the LB group from 7.62 ± 0.29 to 5.58 ± 0.49	2019

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REVIEW ARTICLE

MANAGING DIFFICULT ENCOUNTERS

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KEYWORDS

Difficult patient

Difficult client

Incidence

Screening

Management

ABSTRACT

Difficult doctor-patient relationships are a recognized aspect of modern healthcare, but the actual incidence, risk factors, ethical issues, and management strategies are less well-known. The author queried PubMed, ScienceDirect, and the Education Resources Information Center. The inclusion criteria consisted of the free-text terms "difficult patient" and "difficult client" and the Medical Subject Heading terms "patient participation" and "professional-patient relations" with searches further refined by focusing on adults, management, screening, and incidence among review and research articles published in academic journals in English. The author excluded articles focused on children, adolescents, and anger management. This study condenses a body of research spanning two decades and can help clinicians understand factors that contribute to difficult encounters, employ simple screening instruments, and implement management approaches that can minimize difficult encounters and maximize their successful resolutions. Based on the collected evidence, most doctor-patient relationships are trouble-free, but some, ranging between 10% and 20%, are dominated by difficulties of varying degrees and types.

INTRODUCTION

There is no such thing as a difficult patient—a bold statement that seemingly contradicts clinical experience. Focusing on the encounter moves the spotlight off the patient and in its place illuminates a bidirectional relationship. Viewed in this manner, all the complexities of human communication may culminate in a difficult encounter.

The earliest literature defined difficult encounters almost exclusively as arising from problematic patients. Labeling an individual as a "difficult patient" effectively absolves the clinician's role in a difficult encounter, either as a contestant or a conciliator. Over roughly the past decade, researchers broadened their inquiries and focused on the clinician-patient relationship, and through the process identified the clinician's potential contributions to a difficult encounter.

This review examines the published literature that studied the actual incidence of difficult encounters, examines factors that both patient and providers may contribute to a difficult encounter, ethical issues, and clinical management of difficult encounters.

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While not infallible, this study condenses a body of research spanning two decades and can help clinicians understand factors that contribute to difficult encounters, employ simple screening instruments, and implement management approaches that can minimize difficult encounters and maximize their successful resolutions.

METHODS

In constructing this narrative review, this study queried three quality academic search systems, PubMed, ScienceDirect, and the Education Resources Information Center (ERIC) in June and July 2022. All three systems are suitable for extensive exploration of scientific literature.[1]

In each case, the search method began with the terms "difficult patient" and "difficult client" and, depending on the features of the search system, the search was refined by adding the inclusion/exclusion criteria. After retrieving the results, the search strategy further refined the outcome with a manual review to ensure compliance with the criteria.

The inclusion criteria consisted of the free-text terms "difficult patient" and "difficult client" and MeSH terms "patient participation" and "professional-patient relations" with searches further refined by focusing on adults, management, screening, and incidence among review and research articles published in academic journals in English. Excluded were articles that focused on children, adolescents, and specialty-specific topics (such as

anesthesiology), each of which was outside the adult scope of this review. Articles addressing solely anger management were also excluded as being beyond the scope of this review.

To best capture the evolution of the research, this study conducted a 20-year PubMed search, which resulted in 19 relevant abstracts from a pool of 86 retrievals. A query of ScienceDirect using the terms "difficult patient" and "difficult client" produced 631 results (from a broader range of article types) from 2002–2022, with nine meeting the inclusion criteria after a manual review. A 20-year search of ERIC using the terms "difficult patient" and "difficult client" produced 47 responses with nine of them meeting the inclusion criteria. The search strategy also used citation chaining from the included articles to identify additional pertinent articles. This review did not involve human subject research and is exempt from Institutional Review Board review.[2]

REVIEW

Screening instruments for predicting difficult encounters

The development of the Difficult Doctor-Patient Relationship Questionnaire (DDPRQ) represented one of the first efforts to move beyond subjective characterizations and describe the difficult patient with a 30-item screening instrument. The DDPRQ organized the 30 questions across five themes: the demanding irritating patient, physician dysphoria, compliance and communication, the self-destructive patient, and the seductive patient. After validating the instrument, the researchers conducted a study, coupling the DDPRQ with medical and mental health diagnostic screening questionnaires. The study results endorsed the DDPRQ's reliability and classified 10% to 20% of the patients as difficult based on the intensity of their somatization, personality disorders, and psychopathologies such as depression or anxiety. In different terms, difficult patients in this sample were demanding, had unrealistic expectations, were non-adherent to treatment, and accepted minimal responsibility for self-care. DDPRQ scores did not correlate with either the patient's or physician's demographics.[3]

In a setting familiar to many clinicians, researchers explored difficult patients in an ambulatory clinic. The study included 500 patients and 38 clinicians, the former completing health-related questionnaires and the latter completing a modified 10-item DDPRQ and the Physician Belief Scale. Factors contributing to a difficult visit included the patient's depression or anxiety, at least five physical symptoms endorsed on the PRIME-MD checklist, and symptom severity of seven or greater on a 10-point scale. Physician demographics and experience did not contribute to a difficult encounter, but clinicians who scored greater than 70 on the Physician Belief Scale reported 23% of their encounters as difficult.[4]

The Physician Belief Scale is a 32-item self-report questionnaire that pioneered an objective assessment of physicians' attitudes about their knowledge and comfort with psychosocial aspects of treatment. Researchers incorporated the scale in studies to measure the clinician's contributions to a difficult encounter. A sample of the items on the Physician Belief Scale include "I am too pressed for time to routinely investigate psychosocial issues … Patients will become more dependent on me if I open up psychosocial concerns … I am intruding when I ask psychosocial questions."[5]

Clinicians can now choose from a variety of questionnaires that measure different qualities of the doctor-patient relationship. A sample of those available includes the Trust in Physician Scale, an 11-item questionnaire completed by patients. The Trust in Physician Scale includes items such as "My doctor is usually considerate of my needs and puts them first and I trust my doctor to tell me if a mistake was made about my treatment."[6,7] A systematic review of seven instruments measuring trust concluded that the Trust in Physician Scale is the most studied among the group, but all seven would benefit from further research.[8]

Researchers developed the Jefferson Scale of Physician Empathy as a brief instrument to measure empathy and settled on a 20-item questionnaire following a series of successive trials. Of note, the study participants included 55 faculty physicians, 41 internal medicine residents, and 193 medical students, which positioned the instrument's role in academic medicine. A sample of the items includes "A physician who is able to view things from another person's perspective can render better care, physicians' sense of humor contributes to a better clinical outcome, and understanding body language is as important as verbal communication in physician-patient relationships."[9] A systematic review of 59 published articles supported the structural validity and internal consistency of the Jefferson Scale of Physician Empathy, but in terms of reliability, measurement error, and cross-cultural validity the authors suggested further study.[10]

A cohort study enrolled 750 patients to understand the dynamics of difficult encounters using a mixture of health-related questionnaires for the patients while clinicians completed the DDPRQ and the Physician Belief Scale. Health care providers graded 17.8% of their encounters as difficult. Clinicians with less than 10 years of experience and scores greater than 70 on the Physician Belief Scale had more difficult encounters. Patient characteristics defining a difficult encounter included a previous week of heightened stress, more than five somatic complaints, and a mood disorder. Interestingly, the authors noted that difficult encounters negatively affected patient care with the presenting symptoms worsening and health care use increasing over the subsequent 6 months.[11]

Factors influenced by patients and providers that may contribute to a difficult encounter

Health care providers must take the lead in recognizing and repairing difficult encounters, but part of the recognition is an admission that, despite the clinician's best efforts, not every encounter can be rescued. With that in mind, a starting point would consider a provider's attributes that increase the likelihood of a difficult encounter.

An early step in that direction involved a survey of 1,391 physicians conducted as a secondary analysis of the Physician Worklife Survey. This study concluded that physicians expressing the most

frustration in clinical encounters were less than 40 years old, had higher personal stress, practiced in a medicine subspecialty, worked more than 55 hours a week, and treated more patients with mental health and substance use disorders.[12]

Authority can stifle communication, and there are two broad examples where this encumbers the doctor-patient relationship. Researchers conducting a qualitative study involving 48 focus group members discovered that some physicians were more authoritarian than authoritative, a brash style that hindered patient-centered care. Other participants admitted deferring to the physician's expertise and surrendering their autonomy and assuming a passive role, in part to avoid being labeled a difficult patient. In both cases, the study emphasized the importance of encouraging the patient's unfettered communication.[13]

A person's socioeconomic class is another variable affecting communication. Social inequities affecting the doctor-patient relationship occur on both ends of the spectrum. Among individuals in lower socioeconomic strata, patients may not understand the treatment and providers may lack familiarity with their patient's environment and how it may influence behavior.[14]

The dynamic is different with affluent patients, otherwise referred to as Very Important Patients (VIPs). In a telling reassessment, the acronym "VIP" is reimagined as Very Intimidating Patients, which emphasizes the adverse influence on the doctor-patient relationship. While benefiting from greater access and attention, an encounter with a VIP may be warped when the clinician strays from the standard of care. A combination of the VIP's persona, be it demanding, condescending, or flattering, along with the clinician's corresponding adulation, fear, or grandiosity heightens the risk.[15]

Difficult encounters arise from a complex interaction between the clinician, patient, and healthcare systems but certain mental disorders are particularly challenging such as individuals with borderline or paranoid personalities. Their tumultuous, demanding, and fractious nature requires considerable patience and therapeutic neutrality.[16] Ambiguous medical complaints that defy diagnostic categorization and treatment may also affect the doctor-patient relationship. In these and myriad other examples that descend into a difficult encounter, the clinician's initial focus is geared toward repairing the communication, a step that may benefit from a consultation with a mental health professional.[17]

Management of the difficult encounter

Frederick W. Platt and Geoffrey H. Gordon's *Field Guide to the Difficult Patient Interview* is a classic introduction full of tips and strategies engagingly offered through concrete clinical examples. The book is organized by first describing a problem, the principles that guide a response, the procedures for tackling the tricky situation, the pitfalls that clinicians should avoid, and a concluding gem.[18]

In the section "Dealing with the Difficult Relationship," framing the issue begins with a list of "dreaded phrases" uttered by patients that almost immediately darken the clinician's behavior, such as "no doctor has ever been able to help me," "you're the only doctor who has ever understood me," or "only Demerol helps my headaches." Clinicians may interpret the comments as setting unrealistic expectations, making demands, or being obsequious, illustrating the principle that requires "conversation repair." According to the authors, the clinician should refrain from reacting defensively by pausing and reflecting before responding. Pitfalls to avoid include ignoring the patient, getting angry, or failing to listen and understand the patient. With a concluding pearl, clinicians are reminded that empathy is the best intervention.[18]

Factors intrinsic to managed health care, such as time-limited sessions, may stress the doctor-patient relationship with both parties watching the clock. Sensing the looming closure, the patient may anxiously unload their concerns, overwhelming the clinician. The too-brief encounter leaves both participants unsatisfied. In these situations, the clinician can schedule an additional appointment or even consider a telephone call, video conference, text, or chat to follow up. Even if it is unbillable, reaching out to the patient signals the clinician's interest and empathy.[19]

Repairing a difficult encounter relies on five principles: an empathetic attitude, normalizing the patient's emotional experience, providing support, being respectful, and working toward a shared decision-making partnership. These five principles help the clinician de-escalate the difficult encounter by providing respectful, supportive comments that reflect the patient's concerns and avoid counterproductive arguments. [20]

In another study, researchers examined the results of a customer service program specifically designed to improve patient satisfaction. Clinicians and support staff received training that addressed "patient perceptions of staff and telephone access, frequency of returned phone calls, staff empathy and responsiveness, and overall patient experience." The 4-year program randomly surveyed patients every 3 months with a structured instrument while monitoring formal complaints throughout the study period. A total of 611 patients participated, and researchers reported that patient satisfaction scores increased from 80.3 to 91.2, with formal complaints decreasing by 40.5%. Factors associated with patient satisfaction consisted of returning calls promptly; taking extra time to explain treatment plans; cheerful, optimistic providers; soliciting the patient's contributions to a treatment plan; and the staff's professionalism and civility.[21]

There are two broad approaches to managing a difficult encounter, with one focused on prevention by emphasizing the clinician's communication skills and the other exploring practices that may mitigate a fully fractured relationship. Prevention highlights empathy and mindfulness, but when the relationship deteriorates, mitigation strategies may limit the damage.

Conversation analysis as it specifically applies to medical encounters asserts that "there is evidence that how physicians solicit patients' concerns can have consequences for patients' perceptions of physicians' competence and credibility, and thus for patient outcomes, such as satisfaction." For example, medical encounters are of three types: the initial visit, a follow-up visit, and a visit with an established patient with routine or chronic problems. The research suggests that "What can I do for you? How are you feeling? and What's new?" are reasonable open-ended questions

respectively matching the patient's status. Mismatches, such as asking an established patient "What can I do for you?" might be interpreted as insensitive.[22]

A clinician's sensitive and focused style of communication is a crucial step toward preventing difficult encounters. A systematic review identified five evidence-based clinical practices that strengthen the doctor-patient relationship: prepare with intention, listen intently and completely, agree on what matters most, connect with the patient's story, and explore emotional cues.[23]

The first component, "prepare with intention," encourages clinicians to preview the patient's medical record or gather quick updates from office staff followed by a moment of uninterrupted mindful, reflection. The second recommendation requires the clinician's patience, listening attentively to the patient's narrative while minimizing distractions and probing questions. Active listening emphasizes the importance of nonverbal cues such as sitting down, good eye contact, leaning forward, and gestures such as head nodding. The third suggestion, "agree on what matters most," encourages patient participation in treatment planning, clarifies reasonable expectations, and concludes by summarizing the discussion and inviting disclosure of any unaddressed concerns. Clinicians can also demonstrate a personal, nonclinical interest in the patient, for example, by observing and commenting on their tattoos or asking about the person's hobbies or other interests. The fifth practice, "solidifying the clinical relationship," explores emotional cues by extending active listening to closely monitoring the patient's nonverbal communication, such as posture, mannerisms, and vocal tone, and then validates the observations with empathetic inquiries, such as "this seems upsetting."[23]

Repairing difficult encounters requires a bit of juggling on clinicians' parts in order to preserve the relationship—but not at the expense of providing substandard care. A useful strategy considers the ROAR approach, with the clinician's encounter structured by being "Reflective" and "Objective" and by providing the patient an updated "Assessment" and offering "Reassurance." By being reflective, the clinician recognizes and articulates the patient's frustration, de-escalating an emotion that can easily transition to anger. Being objective resets the clinical process as the clinician once again solicits the patient's history, shares entries from the medical record, and, most importantly, invests time in listening and answering any questions that arise. An assessment of the medical condition follows, during which the clinician ideally monitors the patient's reactions and empathically recalibrates in response to questions or concerns. Reassurance is the next and perhaps most important step. Through words and actions, the clinician's future availability is stressed, cementing the relationship's bond.[24]

Sometimes all that is needed is an apology, a simple solution encumbered with controversy. Medical apologies can run the gamut from a clinician's appointment tardiness to a bona fide medical error, but sincerity is key in every instance.[25] Proponents of medical apologies argue that the clinician's declaration of "I am sorry" without admitting guilt, along with "explanations, an expression of regret and empathy and the offer of redress" may restore trust and salvage the difficult encounter. In terms of suspected adverse events, however, the clinician should always pursue consultation before expressing contrition.[26]

Opponents of medical apologies point to studies showing their negligible impact on malpractice litigation. With high hopes, 38 states revised their tort laws making medical apologies inadmissible in malpractice trials; the reasoning was that apologies were good faith efforts by clinicians that would result in less litigation. In a study that examined 8 years of malpractice claims against 90% of physicians in America, the study concluded that "on balance, apology laws increase rather than limit medical malpractice liability risk."[27] In terms of disclosing medical errors in hopes of restoring a relationship, apologies "do not facilitate the type of communication that would improve physician transparency and overall patient satisfaction."[28]

DISCUSSION

Regardless of specialty practice, osteopathic physicians will eventually have a difficult patient encounter. Even though most doctor-patient relationships are trouble-free, a minority are dominated by difficulties of varying degrees and types. Many of these difficult encounters are behaviorally expressed in a cascade that may initially include silent frustration and then progress to problems with the patient's medical adherence, overt complaints, and even litigation. Prevention is the optimum approach, a strategy that requires the doctor's self-awareness, active listening, empathy, boundary setting, and management of expectations. Resurrecting a difficult encounter is in the physician's interest because damaged relationships negatively affect health care and may encourage grievances and legal actions. When difficult encounters between a doctor and a patient erupt repeatedly during each visit, it may be appropriate to issue an apology along with a commitment to improve communication and resolve misunderstandings. However, in cases where medical errors are suspected, physicians should wait for the results of internal reviews before responding and coordinate their responses with the guidance the facility provides.

Limitations

The selection of search terms used in this study may have excluded relevant literature. For instance, to broaden the scope of the publications searched, this study employed the terms "difficult patients" and "difficult clients." These two terms were represented in nearly all of the articles retrieved, although it is possible that different professional terms could have affected the study's findings. Another potential limitation could be articles available in nonsearched databases. Selection bias could be a limitation, but this study mitigated that by searching three databases.

CONCLUSION

Difficult encounters are an inevitable aspect of modern health care, but this concise review of the published literature provides evidence that can help physicians. Physicians can use simple, evidenced-based screening instruments to identify potentially troublesome relationships. This study also identified both physician and patient behaviors that contribute to difficult

encounters. The cumulative research presented in this study offers management approaches that can help prevent or repair difficult encounters. Not every troublesome relationship can be prevented or repaired, but as this study demonstrates, combining awareness of risk factors with clinical management can reduce and potentially mitigate difficult encounters.

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REVIEW ARTICLE

COMMON ORTHOPAEDIC SHOULDER DIAGNOSES ENCOUNTERED IN THE PRIMARY CARE SETTING

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KEYWORDS

Shoulder pain

Calcific tendonitis

Rotator cuff

Frozen shoulder

ABSTRACT

Shoulder pain and shoulder disorders are commonly seen in the primary care setting. While many of these disorders can be managed by the primary care physician, some may pose a diagnostic dilemma. This article will review 10 common shoulder disorders, evaluating when conservative management is appropriate and when referral to a specialist is warranted.

INTRODUCTION

Shoulder pain and shoulder pathology are common chief complaints in the primary care setting. The shoulder consists of multiple joints, mainly the glenohumeral joint. The other joints that are considered in the shoulder include the acromioclavicular, sternoclavicular, and scapulothoracic joints. Each joint has associated pathology and should be considered in the workup of shoulder pain. Most common pathologies, and the majority of those further discussed, involve the glenohumeral joint. The glenohumeral joint is a ball-and-socket joint formed between the humeral head and the glenoid of the scapula. The joint exhibits significant freedom of motion in all planes, including flexion, extension, abduction, adduction, internal rotation, and external rotation. Motion also exists at the scapulothoracic joint, which also may present with pathology. The glenohumeral joint is stabilized both dynamically and statically. The major dynamic forces include the musculature of the shoulder, most importantly the rotator cuff musculature and biceps brachii, which comprise a large subset of pathology discussed in this article. This complex joint provides multiple areas for pathology to arise.

Shoulder pain and shoulder disorders are commonly seen in the primary care setting. While many of these disorders can be managed by the primary care physician, some may pose a diagnostic dilemma. This article will review 10 common shoulder disorders, evaluating when conservative management is appropriate and when referral to a specialist is warranted.

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SUBACROMIAL IMPINGEMENT SYNDROME

Subacromial impingement syndrome is a common cause of shoulder pain seen in the primary care setting. It represents 36% of all shoulder disorders.[1] Subacromial impingement syndrome is characterized by inflammation, which may be related to repetitive movement. The spectra of disorders related to subacromial impingement syndrome range from subacromial bursitis, to rotator cuff tendinopathy, to partial- or full-thickness rotator cuff tears. Typically, there is a compression of the rotator cuff, subacromial bursa, or other soft tissue between the humeral head and the acromion, acromioclavicular (AC) joint, or coracoacromial arch. Many patients who exhibit subacromial impingement syndrome also have abnormal scapular movement.[2] In addition, impingement syndrome may predispose the patient to rotator cuff tears.[3]

Subacromial impingement syndrome is believed to be a three-phase progression. Stage 1 involves younger patients (less than 25 years old) and is characterized by acute bursitis with subacromial edema and inflammation. Stage 2 is more common in patients 25–40 years of age and is mostly characterized by rotator cuff tendonitis and/or fraying of the anterior fibers of the supraspinatus. Stage 3 is characterized by partial- or full-thickness tearing of the rotator cuff.[4]

At presentation, the patient may complain of shoulder pain exacerbated by overhead activity. Exacerbation of symptoms is

common with elevation greater than 90°. Pain may also worsen at night.[5] A thorough history and physical exam are important, as many conditions can mimic impingement syndrome. A comprehensive physical exam should include range of motion, strength, and special testing. Special testing includes Neer and Hawkins tests, which are sensitive but not specific for impingement syndrome.[6] During the Neer test, the examiner passively flexes the patient's shoulder with the arm internally rotated; reproduction of pain is a positive exam. With the Hawkins test, which is performed at 90° of shoulder and elbow flexion, the examiner exerts an internal rotation force on the shoulder. If pain is reproduced with internal rotation of the shoulder, this is a positive Hawkins test. Calcific tendonitis is a common cause of active therapy failure, and there are multiple surgical options available for treatment. A lidocaine challenge injection, which involves injecting 5–10 mL of 1% or 2% lidocaine without epinephrine to the subacromial space, can support a diagnosis of impingement syndrome but is not frequently performed in clinical practice. Full pain relief upon reexamination postinjection supports a diagnosis of impingement syndrome.

The majority of patients with subacromial impingement syndrome improve with conservative treatments. Nonsurgical treatment typically includes home exercises, physical therapy (PT), and subacromial cortisone injections. Osteopathic manipulative treatment (OMT) may also be performed to help mobilize the ribs, stabilize the scapula (to prevent dyskinesis), and treat restrictions at the AC joint.[7] Studies have found that two-thirds of patients experience significant improvement with conservative management.8 If the patient fails conservative treatment, they may be a candidate for orthopedic surgical intervention.

Surgical treatment options include open or arthroscopic subacromial decompression. Arthroscopic subacromial decompression is associated with decreased recovery and less pain in the immediate postoperative period.

FROZEN SHOULDER

Frozen shoulder, also known as adhesive capsulitis, refers to a global loss in range of motion in the shoulder. This is due to a soft tissue contracture that limits both passive and active range of motion. There are three stages of frozen shoulder: freezing, frozen, and thawing. Frozen shoulder can occur in combination with other conditions, including rotator cuff tears and degenerative joint disease. While there is no consensus on the biological cause of frozen shoulder, systemic disorders such as diabetes mellitus, thyroid disease, cardiovascular disease, and neurologic conditions may contribute to it. Patients with diabetes mellitus are at a greater risk for frozen shoulder than the general population and the condition tends to be more severe.[9] The prevalence of developing frozen shoulder is 2%–5% in a lifetime for all individuals but is most prevalent in those who are 50–60 years of age. Frozen shoulder is more common in females and more frequently located on the nondominant side.[10]

Shoulder motion should be assessed and documented diligently. Differential diagnosis should include frozen shoulder, rotator cuff pathology, and glenohumeral arthritis. Although a finding of global decrease in both passive and active range of motion is highly suspicious for frozen shoulder, these findings must be consistent to determine whether or not treatment is successful. The physician should record both passive and active range of motion. Passive motion should be evaluated with the patient supine to restrict scapulothoracic movement. Passive flexion, external rotation in abduction (arm away from the patient's body), external rotation and internal rotation in adduction (arm at the patient's side), and cross-chest adduction should be measured. Magnetic resonance imaging (MRI) findings may demonstrate thickening of the joint capsule and the coracohumeral ligament; however, frozen shoulder is a clinical diagnosis. An MRI is also useful for eliminating other sources of shoulder pain.

Frozen shoulder tends to resolve with nonsurgical treatment, but resolution may take as long as one to three years. For primary frozen shoulder, defined as insidious onset without inciting event, a supervised PT program is successful in the majority of patients. Secondary frozen shoulder, defined as the diminished global range of motion of the shoulder secondary to shoulder injury or surgery, does not have the same success rate with formal PT alone. Typically, 6 weeks of formal PT is recommended for both subsets of patients. If the patient continues to make progress, an additional 6 weeks of PT, followed by a home exercise program, is reasonable. Techniques using OMT can be applied to the upper thoracic area, upper ribs, and entire shoulder complex to improve motion. For example, Spencer techniques can be utilized to challenge the range of motion barriers in multiple planes of motion. In conjunction with formal PT, other conservative measures should be exhausted in patient treatment, including nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroid injections, and glenohumeral lidocaine injections.[11] In the freezing phase, where pain is the largest concern, corticosteroid injection and oral medications are most successful.[11] In the frozen phase, where restricted range of motion is most prevalent, formal PT is best used.[11] If, after 12 to 16 weeks, there is no improvement or worsening of symptoms, surgical intervention may be considered.

Surgical management includes manipulation under anesthesia (MUA). MUA is often performed in combination with an arthroscopic capsular release. A formal course of PT, typically for 6 weeks, is essential postoperatively to maintain range of motion and improve shoulder strength

SHOULDER OSTEOARTHRITIS

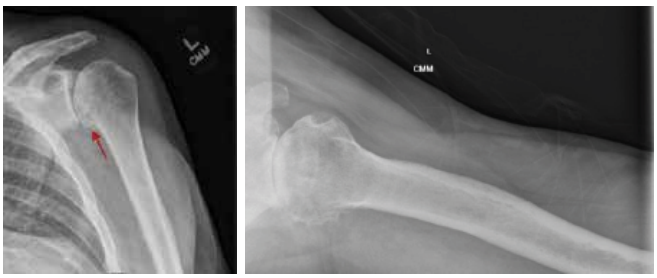
Osteoarthritis of the shoulder can occur at both the acromioclavicular joint and the glenohumeral joint; these pathologies present a common cause of shoulder pain. Shoulder osteoarthritis is commonly referred to as a degenerative joint disease. As a progressive disease, this results in the loss of articular cartilage over time, evidenced by radiographic changes, including osteophyte formation, subchondral sclerosis, and subchondral cyst formation, which leads to pain and functional impairment. The prevalence is higher among females and increases with age. Other risk factors include participating in overhead sports and occupations associated with physical labor, such as those related to construction. Primary osteoarthritis does not have a specific cause, while secondary osteoarthritis is related to a predisposing

factor. Such factors include previous trauma, dislocations, osteonecrosis, or chronic rotator cuff tears.

A diagnosis of shoulder osteoarthritis is based on symptoms, physical examination, and radiographic findings. During the early phases of osteoarthritis, patients present with progressive pain exacerbated by activity. This is often described as a generalized dull ache, deep in the joint. Initially, the physical examination may be unremarkable. As the disease progresses, the symptoms may become more severe and can include night pain and crepitation. In advanced cases, decreased range of motion and pain may affect the patient's activities of daily living.

Imaging studies, including a full set of plain radiographs (AP [anteroposterior], Grashey, scapular Y, and axillary) are crucial to a diagnosis of shoulder osteoarthritis. In the majority of cases, a diagnosis of degenerative joint disease can be established with conventional radiographic imaging. Early on, radiographic findings (Figure 1) may be subtle, but as the disease progresses, they may show joint space narrowing, osteophytes, subchondral sclerosis, and cysts. Axillary views are particularly useful for evaluation of joint space narrowing.

The goals of treatment are to improve function and pain control. Initial conservative treatment consists of activity modification and acetaminophen. Typical acetaminophen dosing is 650 mg or 1,000 mg every 6 hours, with maximum dosing being 4,000 mg in a 24-hour period. Physical therapy is useful to maintain range of motion. Approximately 50%–67% of patients demonstrate improvement of symptoms with NSAIDs but with varying side effects.[12,13] The primary care physician must weigh the risks and benefits of NSAIDs. In advanced degenerative joint disease, intra-articular corticosteroid injections may be used to improve pain and swelling. If conservative therapy fails, there are multiple surgical options available and the patient should be referred to an orthopedic surgeon. Surgical options include arthroscopic debridement, resurfacing, and shoulder arthroplasty. The procedure of choice will vary based on the age of the patient, functional expectations, and integrity of the rotator cuff.



I II

FIGURE 1:
Anteroposterior radiograph of the glenohumeral joint (I) and axillary (II) radiograph of the shoulder demonstrate glenohumeral osteoarthrosis with joint space narrowing and inferior spur formation (red arrow) of the humeral head.

BICEPS TENDONITIS

Biceps tendon dysfunction can occur in isolation but is commonly seen in conjunction with other shoulder pathology. The biceps brachii is a muscle in the upper arm that acts to supinate the forearm and flex the elbow. This muscle has two heads: the short head and the long head. The origin of the short head is on the coracoid process, while the long head originates on the supraglenoid tubercle and the superior glenoid labrum. While there are various types of injuries to this complex, this section will solely cover biceps tendonitis.

Biceps tendonitis is a commonly encountered pathology associated with the long head of the biceps tendon. Patients typically present with anterior shoulder pain, which may radiate to the muscle belly of the biceps. The pain may be exacerbated with overhead activity or with resisted elbow flexion. A thorough physical exam is necessary to differentiate the cause of pain. There may be tenderness with palpation of the biceps in the bicipital groove. Muscle strength testing and special tests, including Speed's and Yergason's, are helpful in a diagnosis of biceps tendonitis. Speed's test is performed with forward flexion of the shoulder against resistance, with the elbow extended and forearm supinated. Speed's test is positive if pain is elicited at the bicipital groove. Yergason's test is performed with active supination, with the forearm pronated, elbow flexed to 90°, and the shoulder adducted. Yergason's test is also positive if pain is elicited at the bicipital groove.

Radiographs are not diagnostic but should be obtained to help evaluate for potential bony pathology. Patients with tendonitis of the long head of the biceps will typically have normal radiographs. An MRI and magnetic resonance arthrography may be useful to evaluate for labral pathology or intra-articular biceps pathology; however, they are not as reliable as arthroscopy in the diagnosis of biceps pathology.[14]

In a patient diagnosed with biceps tendonitis, first-line treatment is conservative. This often includes NSAIDs, activity modification, PT, and corticosteroid injections. Corticosteroid injection can be administered to the bicipital sheath and should not be directly injected into the tendon. If a patient fails nonoperative management, referral to an orthopedic surgeon for further evaluation is recommended, as biceps tenodesis or tenotomy can be performed for refractory cases.

CALCIFIC TENDONITIS

Calcific tendonitis of the shoulder typically affects patients between the ages of 30 and 60 years of age. Females are more frequently affected than males. Bilateral shoulder involvement is common. Calcific tendonitis is a painful condition that involves the deposition of calcium hydroxyapatite within the rotator cuff tendons, but many patients with radiographic findings may be asymptomatic. The supraspinatus is the most commonly involved tendon, with an incidence of 51.5%–90% of cases.[15] The cause of calcific tendonitis is still unclear, but there is an association with endocrine disorders such as diabetes and hypothyroidism.[15]

There are four stages of calcific tendonitis. The precalcific stage is usually pain free and includes fibrocartilaginous transformation within the rotator cuff tendon. The formative stage is the stage in which calcium is deposited in the rotator cuff tendon. This stage may or may not be painful. During the resting phase, the calcium deposition is terminated and there is no inflammation or vascular infiltration. Similarly, this phase may or may not be painful. The resorptive phase is considered the most debilitating for patients. Calcium crystals may extravasate into the subacromial bursa, which is a process commonly associated with severe pain and loss of range of shoulder motion. This phase can last for up to 2 weeks.

Physical examination findings are similar to subacromial impingement syndrome. Pain is worse at night and limited range of motion with overhead activities may be present. Imaging is necessary to distinguish between calcific tendinosis and other sources of shoulder pain. Plain radiographic imaging is usually diagnostic for calcific tendonitis (Figure 2). Other modalities such as ultrasound and MRI are not usually required for diagnosis but assist in evaluating for other associated pathology.

Calcific tendinosis is, in general, self-limited. Treatment is usually supportive with NSAIDs, acetaminophen, steroid injections, and PT. Steroid injections tend to be particularly effective in the acute setting.[16,17] If calcific tendonitis fails to respond to conservative treatment, referral to an orthopedic specialist is recommended, as a patient may be a candidate for arthroscopic calcific debridement.

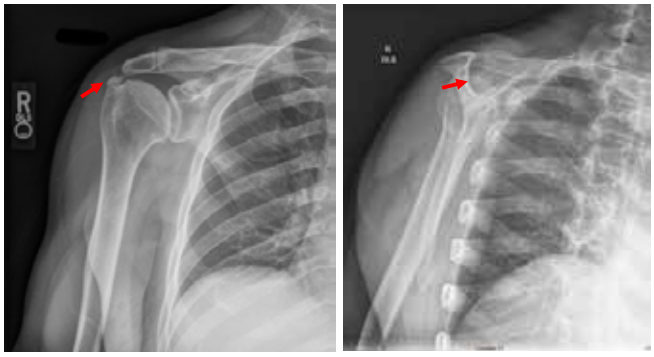


FIGURE 2:

Anteroposterior (I) and scapular Y (II) radiographs of the shoulder demonstrate calcific tendonitis (arrow).

ROTATOR CUFF TEARS

The rotator cuff provides dynamic stability to the glenohumeral joint. It is composed of four muscles: infraspinatus, teres minor, supraspinatus, and subscapularis. These muscles work together to balance the glenohumeral joint in the coronal and transverse planes.

A common cause of shoulder pain in patients over 40 years of age, rotator cuff tears can be the result of an acute injury or progressive degeneration due to impingement. Acute avulsion injuries typically occur as a result of trauma or, in the case of older patients, may result from sustaining a fall or shoulder dislocation. In patients over 60 years of age, rotator cuff tears tend to be caused by chronic degeneration or chronic impingement. Patients over the age of 70 are more likely to have full-thickness rotator cuff tears.[18,19]

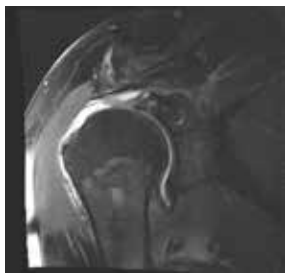
Patients with rotator cuff tears may present with progressive weakness, worsened with overhead motion of the affected arm. Patients who sustained an acute traumatic tear may present with acute pain and weakness of the affected arm or pseudoparalysis. In addition, night pain is commonly associated with rotator cuff tears. A thorough physical exam should be performed on all patients, and all four rotator cuff muscles should be tested individually with muscle strength testing and associated special tests. Supraspinatus primarily functions in abduction of the shoulder and is best tested with resisted abduction. The drop arm test and the Jobe test (also known as the empty can test) are two special tests to evaluate the supraspinatus. Infraspinatus and teres minor both function to externally rotate the shoulder. Infraspinatus is best examined by testing muscle strength in external rotation at 0° of abduction, while the teres minor is best tested in external rotation at 90° of abduction. The teres minor can be examined with the Hornblower's test, in which the patient's arm is abducted to 90° with the elbow flexed to 90°. The patient is then asked to externally rotate the arm to 90° against resistance. If the arm drops back to a neutral position, the test is positive. The subscapularis functions to internally rotate the shoulder and is best tested with resisted internal rotation at 0° of abduction. Special tests for the subscapularis include the belly press, bear hug, or lift-off sign.

In addition to physical examination, imaging also plays an important role in the diagnosis and management of rotator cuff tears. Plain radiographs are useful in assessing associated calcific deposits in the tendons or ligaments or to evaluate for superior migration of the proximal humerus. Superior migration is a sign of long-standing rotator cuff arthropathy. Because MRI is the gold standard for diagnoses of rotator cuff injuries, it should be ordered when there is a high clinical suspicion (Figure 3). Ultrasound can also be useful in providing static or dynamic examination.

Treatment of rotator cuff tears consists of nonoperative management and operative management. The conservative approach is typically first-line treatment for most tears, especially partial tears. A crucial component of conservative measures is PT, with focus on regaining lost range of motion, followed by rotator cuff strengthening and scapular stabilization. Administration of NSAIDs and subacromial corticosteroid injections can be useful in symptom management. Indications for surgery and referral to orthopedics include acute full-thickness tears, pseudoparalysis, massive rotator cuff tears, and tears greater than 50% that have failed conservative treatment. Open or arthroscopic rotator cuff repair can be performed.

FIGURE 3:

MRI T2-weighted coronal sequence of the shoulder demonstrates a full-thickness supraspinatus tear with retraction.



GLENOHUMERAL JOINT DISLOCATIONS

Glenohumeral joint dislocations are common and represent 50% of all joint dislocations, with 97% being anterior. Posterior and inferior dislocations may also occur; however, inferior dislocations (luxatio erecta) are rare, accounting for less than 1% of shoulder dislocations.[20] Shoulder dislocations most commonly occur in younger males or older females. Shoulder dislocations in younger patients tend to be traumatic or sports related. Shoulder dislocations in older patients are more likely to occur from falls or be associated with fractures. The mechanism of injury for anterior dislocations is forced abduction and external rotation of the arm.

A patient with an anterior glenohumeral dislocation will typically present with their arm held in internal rotation and abduction with reluctance to move the arm. The presumptive diagnosis of glenohumeral dislocation is often apparent based on history and physical examination. A prominence can be palpated in the anterior shoulder with an emptiness below the acromion. Radiographic imaging is used for definitive diagnosis and to evaluate for associated fractures. These views should be obtained: AP, lateral, and axillary or modified axillary (Valpeau). A Valpeau view is performed with the affected arm adducted and internally rotated onto the patient's chest with the patient leaning backward at a 30- to 45-degree angle. Radiographic imaging should be obtained before attempting close reduction to evaluate the direction of dislocation and presence of associated fractures. In an anterior dislocation, the radiograph will show an anterior, inferior, and medially located humeral head. Postreduction radiographic imaging should also be obtained to confirm successful reduction.

Once a glenohumeral dislocation is confirmed, it is important to reduce the dislocation to help avoid muscle spasms and potential neurovascular injury.[21] There are multiple reduction techniques. An intra-articular injection of lidocaine, 20 mL of 1% lidocaine utilizing either the anterior or posterior portal, may first be attempted for pain control.[22] If adequate pain control is not achieved or the reduction is difficult, conscious sedation should be used. There are multiple different reduction maneuvers. Traction-countertraction technique is a commonly used reduction maneuver and involves wrapping a sheet under the axilla. Traction is applied at the wrist and elbow while an assistant applies countertraction from the opposite side. Other reduction maneuvers include the Stimson technique; Fast, reliable, and safe (FARES) technique; scapular manipulation; external rotation; and the Milch technique.[23] Following a successful reduction, the patient should be immobilized for 3 to 4 weeks with gradual return to full active range of motion.

There is a high incidence of recurrence in younger patients, with a 90% risk of repeat dislocation in patients less than 20 years old.[24] Young patients should be referred to an orthopedist because early intervention decreases the risk of recurrent instability. In cases of recurrent glenohumeral dislocation and associated injuries, additional imaging and orthopedic referral should be considered. Commonly associated injuries include Bankart lesions, Hill-Sachs defects, tuberosity fractures (greater or lesser), rotator cuff tears, and other labral tears. All of these associated injuries should be referred to an orthopedic surgeon promptly, as they may require surgical intervention.

PROXIMAL HUMERUS FRACTURES

Proximal humerus fractures are a common fracture type and are most frequently seen in older individuals, particularly females greater than 65 years of age.[25–27] In younger patients less than 50 years old, high-energy trauma, such as motor vehicle accidents or sports injuries, are common causes.[27] In older patients, the mechanism of injury will often involve a fall from standing height onto an outstretched hand. Osteoporosis is a risk factor for older patients secondary to diminished bone quality leading to increased fragility of the bone, which increases the likelihood of proximal humerus fracture.[28]

Patient presentation and physical exam are important steps in the diagnosis of proximal humerus fractures. Physical exam findings include pain and swelling of the shoulder and upper arm, with decreased range of motion of the shoulder. It is always important to perform a thorough neurovascular exam as concomitant injury can occur to the axillary nerve. It may not be possible to assess motor function in the acute setting due to pain. Sensory testing of the lateral shoulder should be performed. In addition to the physical exam, diagnosis of a proximal humerus fracture requires radiographic imaging. A true AP or Grashey view, a scapular Y view, and axillary views should be obtained. Additional studies, including computed tomography (CT), may be useful for preoperative planning, especially if there is concern for intra-articular comminution or there is an unclear view of the fracture fragments on plain radiographs, but are not necessary in the primary care setting.

Management of proximal humerus fractures is based on the fracture pattern and extent of displacement. The Neer classification is used to classify proximal humerus fractures. This classification system is based on the anatomy of the potential fracture segments.[29] The four potential segments include the greater tuberosity, lesser tuberosity, humeral head, and humeral shaft. The distinction of a part or segment is important to the system. A fracture fragment is classified as a distinct part or segment if it is displaced greater than one centimeter or if there is more than 45° of angulation.

Most fractures of the proximal humerus can be treated conservatively. Indications for a nonsurgical treatment include a minimally displaced surgical or anatomical neck fracture, or greater tuberosity fractures with less than 5-mL displacement.30 Nonoperative management consists of sling immobilization followed by PT for rehabilitation.[30]

Displaced fractures should be referred to an orthopedic surgeon for consideration of surgical intervention. There are various operative fixation methods, including open reduction with internal fixation, percutaneous fixation, intramedullary nailing, and arthroplasty.

CLAVICLE SHAFT FRACTURES

Clavicle shaft fractures are a common injury seen secondary to trauma. Clavicle fractures account for 2.5%–5% of all fractures, and midshaft clavicular fractures account for 69%–82% of all clavicle fractures.[30–32] These injuries are more often seen in children and

young adults, and most commonly in males less than 30 years old.[33] Fractures of the clavicle are often displaced secondary to deforming forces. The sternocleidomastoid muscle will pull the medial fragment superiorly and posteriorly, while the pectoralis will move the lateral fragment inferiorly and medially.

A patient with a clavicular fracture will often present with anterior shoulder pain following trauma. Ecchymosis or skin breakdown around the clavicle may occur. In some instances, there may be a visible deformity of the bone, but this may not be obvious due to swelling of the soft tissues. Physical exam of these patients may reveal a palpable deformity, tenderness, crepitus, and/or motion around the site of the clavicular fracture. In addition to examination of the injured area, a complete physical exam should be completed. A neurovascular exam of the upper extremity is important as these injuries can be associated with concomitant brachial plexus injury. If a clavicle fracture is suspected, in addition to standard shoulder imaging, dedicated clavicle views should be obtained, including a serendipity view and a Zanca view, which is performed at 15° of cephalic tilt. The Zanca view can be helpful in determining the extent of fracture displacement. Treatment is determined by the extent of displacement and shortening of the fracture fragments.

The goal of clavicle fracture management is to restore shoulder function while avoiding nonunion or symptomatic malunion. Conservative treatment consists of either sling immobilization or figure-of-eight bracing. If nonsurgical treatment will be pursued, there should be less than two centimeters of shortening and no neurovascular injury. Operative treatment of midshaft clavicle fractures is often used for fractures with associated neurovascular injury, open fractures, significantly displaced fractures with skin tenting, floating shoulder, or fractures with more than two centimeters of shortening with 100% displacement.[33] Patients with these injury patterns should be referred to an orthopedic surgeon for operative fixation, which will allow patients an earlier return to normal activity.

CERVICAL CAUSES

When evaluating a patient presenting with complaints of shoulder pain, it is important to consider cervical causes. It may be difficult at times to distinguish between shoulder pain referred from cervical pathology or primary shoulder pathology; however, identifying the correct pain generator allows for appropriate treatment. A patient with cervical radiculopathy may have shoulder pain as the major complaint. In patients presenting to a shoulder specialist, 3.6% were found to have primary cervical pathology.[34] Radicular symptoms may occur after trauma or develop insidiously. The most common nerve roots affected are C-6 and C-7 roots.

Physical examination is critical to distinguishing cervical versus shoulder pathology. The Spurling maneuver may be done to elicit radicular symptoms. It is performed by extending the patient's neck, rotating the patient's head to the side of the pain, and then applying downward pressure on the head. A positive test is indicated by reproduction of the patient's symptoms with provocative maneuver. Initial radiographic workup consists of plain radiographs including AP, lateral, and lateral flexion and extension views. Plain radiographs can identify abnormalities in cervical spine alignment or arthritic changes.[34] Advanced imaging, including CT and MRI, can further evaluate the bony and soft tissue anatomy of the cervical spine.[34] A recent epidemiologic survey of cervical radiculopathy indicates that symptoms resolve in 75% of patients with conservative treatment.[35]

CONCLUSION

The 10 shoulder disorders reviewed in this article represent some of the most common shoulder diagnoses encountered in the primary care setting but is not all inclusive. Knowledge of these disorders is important because most of them can be managed without referral to a subspecialist. It is also imperative to identify when referral to a specialist is warranted.

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REVIEW ARTICLE

AN OSTEOPATHIC APPROACH TO THE MANAGEMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS

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KEYWORDS

Osteopath

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Systemic lupus erythematosus (SLE) is a multisystem autoimmune disease that primarily affects women and people of Hispanic, African, and Asian descent. The treatment goals are similar to other autoimmune diseases: preventing progressive damage to organs and decreasing disease activity to increase patient quality of life. Steroids can lead to rapid control of symptoms but have many long-term side effects; patients should be transitioned to steroid-sparing agents and new biologics when possible. Special populations require specific considerations, such as those experiencing renal or neuropsychiatric symptoms or drug side effects or those who are pregnant or planning to conceive. Sustained remission is very difficult to achieve, and current guidelines recommend targeting a low SLE activity state to optimize quality of life. An osteopathic approach to managing SLE attempts to reflect the principles of osteopathy into evidence-based medicine to optimize quality of life.

INTRODUCTION

Systemic lupus erythematosus (SLE) is a multi-organ progressive autoimmune disease that affects young women more often than men and is more prevalent and severe in people of Hispanic, African, and Asian descent.[1–3] The clinical features of SLE are variable across individuals and evolve throughout a patient's lifetime.[4] This makes management challenging and requires flexibility and vigilant monitoring. Management considerations require an evaluation of illness, comorbidities, and patient goals. Although SLE remains poorly understood, the prognosis of SLE is relatively good, with the 10-year survival rate improving over the past several decades to almost 90%.[5,6] Although survival rates and quality of life continue to improve, SLE can lead to permanent damage in one or more organ systems.[7] Joint and skin manifestations of SLE are most common; renal, hematologic, and neurologic manifestations are most damaging.[8] To maximize the quality of life in patients with SLE, treatment should focus on achieving minimal disease activity, rather than complete remission. Additional focuses should include minimizing drug toxicity, preventing organ damage, and educating patients about their role in disease management.[9,10] Because SLE increases the risk of atherosclerosis, smoking cessation, counseling on diet, and statin therapy should also be considered.[11]

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DISEASE EVALUATION

Prior to determining the appropriate treatment modality, disease activity and severity must be assessed by clinical evaluation. The goal of clinical evaluation is to differentiate new disease from chronic damage, to differentiate SLE from coexisting conditions, and to assess for adverse reactions to treatment.[12] A baseline evaluation should include a comprehensive physical examination and labs to assess renal status, drug toxicities, and disease activity. Laboratory evaluation should include complete blood count (CBC), acute phase reactants, urinalysis, urine protein-to-creatinine ratio, serum creatinine, estimated glomerular filtration rate (eGFR), double-stranded DNA (dsDNA), and complement levels (C3, C4). Antibody titers may not need to be repeated, with the exception of dsDNA and complement.[13] If renal disease is suspected, a renal biopsy should be performed for further evaluation.[14–18]

In addition to a physical exam and labs, the SLEDAI-2K score is a useful tool to incorporate into the clinical evaluation (table 1). The SLEDAI-2K score is used as a predictor of mortality and as a measure of disease activity; it can guide current therapy by describing changes in disease activity from one visit to the next.[19] Osteopathic physicians can utilize their ability to assess the patient for somatovisceral dysfunctions and viscerosomatic dysfunctions that can arise as complications of SLE. By monitoring for these dysfunctions, the physician will have a further assessment of the progress of the disease and the ability to tailor aspects of treatment to address somatic dysfunctions.

TABLE 1:
SLEDIAK-2K score for clinical evaluation of SLE

1. Seizure?	13. Pyuria?
2. Psychosis?	14. Proteinuria?
3. Organic brain syndrome?	15. Rash?
4. Visual disturbance?	16. Mucosal ulcers?
5. Cranial nerve disorder?	17. Pleurisy?
6. Lupus headache?	18. Pericarditis?
7. CVA?	19. Low complement?
8. Vasculitis?	20. Increased DNA binding?
9. Arthritis?	21. Fever?
10. Myositis?	22. Thrombocytopenia?
11. Urinary casts?	23. Leukopenia?
12. Hematuria?	24. Alopecia?

GENERAL PHARMACOLOGICAL TREATMENT

While the body is capable of self-regulation, to an extent, the current expert recommendation is that lupus treatment should be built around antimalarials for chronic control, and clinicians should expect lupus patients to be on these medications for life unless there are hard contraindications to their use.[20–22] When initiating treatment, hydroxychloroquine (HCQ) should be the preferred maintenance treatment unless it is contraindicated.[23]

In addition to maintenance treatment of SLE with HCQ, glucocorticoids are the current treatment of choice for rapid control of acute or life-threatening manifestations of SLE.[24] Alternative therapies are emerging through novel immunomodulators which may avoid the side effects of corticosteroids.[25] Rituximab (RIX) is a monoclonal antibody directed against the CD20 antigen on the surface of B lymphocytes and is available for use in patients with severe or refractory manifestations of the disease, but its efficacy is uncertain.[26–28]

TREATMENT OF CUTANEOUS LUPUS

Photosensitivity is a common finding in many subtypes of SLE (table 2). Ultraviolet light (UV) injury can cause skin lesions to develop that may persist for months. Therefore, physicians should encourage patients to wear sunscreen and counsel them to avoid medications that can cause photosensitivity, such as thiazide diuretics, neuroleptics, and tetracyclines.[29]

Cutaneous lupus erythematosus (CLE) includes discoid lupus, subacute cutaneous lupus (SCLE), and acute cutaneous lupus (ACLE).[30] Typical locations include the face, neck, and head. It is diagnosed clinically, with a biopsy to confirm.[30] There are currently no FDA-approved treatments; therefore, the recommended treatment of mild or limited disease includes smoking cessation, avoidance or protection from UV exposure, and topical treatments.[31] Topical therapies include steroids or calcineurin inhibitors. If the disease is refractory to topical therapies, HCQ or chloroquine (CQ) can be initiated.[32] For severe disease refractory to topical/HCQ/CQ therapy, additional quinacrine therapy is initiated followed by methotrexate (MTX).[32] Thalidomide, retinoids, dapsone, and mycophenolate mofetil (MMF) may also be used for second-line treatment. Other therapeutic options may be cost-limited in their approach.[32,33]

Both ACLE and SCLE are rare and manifest as extreme photosensitivity that begins as a papular eruption or small scaly plaques that transform into annular or psoriasiform lesions.[31] While ACLE is associated with active SLE, SCLE can be caused by commonly utilized monoclonal antibody therapies.[34] Cessation of offending drugs is an effective treatment for both, with the treatment of SLE proving helpful in the resolution of ACLE.[30] Similar to CLE, first-line therapy for SCLE includes topical steroid use and avoidance of UV exposure. Ustekinumab has also been suggested as a therapeutic option in refractory or combined SCLE autoimmune disease pathologies.[35] There is a significant lack of high-quality evidence for SCLE therapies, although clinical trials are underway for Janus kinase 1 inhibitors.[34]

TREATMENT OF MUSCULOSKELETAL MANIFESTATIONS

Arthralgias are common in patients with SLE, and osteopathic physicians have the ability to use many modalities to address musculoskeletal manifestations. Nonsteroidal anti-inflammatory drugs (NSAIDs) are also particularly effective for musculoskeletal symptoms, serositis, and headaches; however, their safety is often of concern.[36] Nonsteroidal anti-inflammatory drugs have an increased risk of acute renal failure, cutaneous and allergic reactions, hepatotoxicity, and aseptic meningitis in patients with SLE.[36] Methotrexate remains an excellent choice for control of arthritic manifestations.[37] Belimumab can reduce autoantibody levels in SLE, and may be indicated as an add-on therapy for skin and musculoskeletal manifestations in patients without severe lupus nephritis or active central nervous system lupus.[38,39]

Osteopathic physicians also have the ability to utilize osteopathic manipulative treatment (OMT) to return the body to normal alignment in cases of nondeforming myalgias and arthritis.[40] Studies also show there could be benefits of OMT in conditions that commonly coexist in patients with lupus, such as fibromyalgia.[41–44] However, physicians should remain aware of the limitations of OMT in SLE, such as high-velocity/low-amplitude (HVLA), due to the increased risk of osteopenia and osteoporosis from chronic steroid use, inactivity from chronic pain, and as a direct result of the disease.[45,46]

TREATMENT OF RENAL MANIFESTATIONS

Lupus nephritis is a complex and broadly differentiated manifestation of lupus that has a high mortality and morbidity.[47] It is often discovered in baseline labs. Patients should be screened for proteinuria, serum creatinine and estimated GFR, microscopic hematuria, and hypertension. A renal biopsy can assess disease activity and properly classify the subtype of lupus nephritis, although some consider this controversial because initial treatment is generally the same: MMF and corticosteroids.[47] Others state that repeat renal biopsies can be performed to assess for response to treatment, and standard therapy regimens depend on the subtype of lupus nephritis, plans for pregnancy, and response to initial therapy. A renal transplant may be necessary if lupus nephritis progresses despite standard treatment.[18] Belimumab may help decrease proteinuria in patients with

proteinuria of more than 1,000 mg/g (113 mg/mmol) creatinine despite standard treatment.[39,48]

Known renal manifestations or other end-organ involvement, may need to be followed at 3-month intervals or sooner.[49] Due to the possibility of clinically silent laboratory abnormalities, patients with low disease states should be followed between 3- and 6-month intervals.[50,51] Earlier treatment, absence of mucocutaneous, renal, or hematologic involvement, and the use of immunosuppressive therapy are associated with mild or lower disease activity.[52]

TREATMENT OF PSYCHIATRIC MANIFESTATIONS

Osteopathic physicians are uniquely trained to appreciate the high incidence of depression in those affected by chronic diseases, such as SLE.[53,54] There are also primary psychiatric changes due to SLE, known as neuropsychiatric systemic lupus erythematosus.[55] These symptoms can be vague, such as memory issues and behavioral changes, which may mask the diagnosis of SLE.[56] It requires independent therapeutic management, depending on severity, after other causes have been excluded.[57] Cognitive behavioral therapy (CBT), which relies on both behavioral remodeling and cognitive restructuring to change disruptive thought patterns, is most commonly utilized.[58] Depression, fatigue, and substance abuse complicate all aspects of care, and physicians should consider screening patients frequently and utilizing available resources as needed.

TREATMENT OF DRUG-INDUCED LUPUS

The osteopathic pillar of metabolism-nutrition considers factors that may affect the self-regulatory and self-healing mechanisms of the body from a dietary standpoint. For example, the management of SLE can be augmented by applying osteopathic philosophy and whole person care. Consider the impact of lifestyle changes on disease burden.[59,60] Regular exercise, a healthy diet high in vegetables and lean meats, smoking cessation, sun avoidance, optimizing mental health, and vitamin D supplementation should be recommended.[59]

As another example, drug-induced lupus erythematosus (DILE) is a lupus-like syndrome triggered by specific medications in some individuals, with studies suggesting genetically related susceptibility.[61] Well-documented drug triggers include sulfonamides, procainamide, hydralazine, isoniazid, methyldopa, minocycline, phenytoin, and tumor necrosis factor-alpha inhibitors. Treatment goals for this model include promoting energy conservation by balancing the body's energy expenditure and exchange, thereby enhancing immune system function. For DILE, then, treatment is the identification and cessation of the offending medication.[62]

TREATMENT CONSIDERATIONS IN PREGNANCY

As active SLE or SLE flares during pregnancy have been associated with an increased risk of both premature birth and fetal mortality, pregnancy in patients with SLE is considered a high-risk pregnancy.[63–65] Patients considering conception should be maintained on medications that are compatible with pregnancy. Hydroxychloroquine is safe and effective in pregnancy, has been documented to successfully prevent flares, and decreases the risk of thrombosis, preeclampsia, and congenital heart block.[66,67]

It is a general recommendation that pregnancy should be delayed until the disease has been in remission for 6 months, as serological activity at the time of conception is associated with an increased risk of disease flares during pregnancy and puerperium.[64,68] Before they conceive, patients with SLE should be assessed for current disease activity, drug use, medical disorders, autoantibody profile, and previous obstetrical history.[69] This should include screening for the following antibodies: anti-Ro (SSA), anti-La (SSB), antiphospholipid, lupus anticoagulant, anticardiolipin, anti-Beta2 glycoprotein 1, free T4, and TSH.[70]

Anti-Ro levels have a direct correlation with congenital heart disease and neonatal lupus syndrome.[71] Anti-Ro/SSA-positive pregnant patients should be monitored by serial fetal echocardiography starting at the 16th week of pregnancy.[72] Anticoagulants and aspirin should be considered in patients with positive antiphospholipid antibodies.[69] Of the antiphospholipid antibodies, the lupus anticoagulant is the only one to be proven to predict pregnancy loss.[73] While the kidneys are the most likely organ system to worsen in pregnancy, it may be difficult to differentiate between lupus nephritis and preeclampsia.[65,67]

Fetal monitoring should screen carefully for placental insufficiency and appropriate fetal growth in the third trimester.[69] During pregnancy, women should also be monitored for thyroid disease, which is associated with an increased risk of preterm birth and miscarriage and is a common comorbidity of SLE.[74] A

TABLE 2:
Management of cutaneous manifestations of SLE

THERAPY OPTIONS

	MILD/ LIMITED	WIDESPREAD/ MODERATE	REFRACTORY
CLE	Topical steroids/ calcineurin inhibitors Preventive measures	HCQ/CQ	Quinacrine addition MTX addition Thalidomide, retinoids dapsone, and MMF
ACLE	Topical steroids/ calcineurin inhibitors Preventive measures Cessation of offending agent Treatment of underlying SLE	More aggressive treatment of underlying SLE Further investigation of offending agent Question differential diagnosis	More aggressive treatment of underlying SLE Further investigation of offending agent Question differential diagnosis

*Currently under further clinical investigation.

THERAPY OPTIONS CONT.

	MILD/ LIMITED	WIDESPREAD/ MODERATE	REFRACTORY
SCLE	Cessation of offending agent Preventative measures Topical steroids/ calcineurin inhibitors	More aggressive treatment of underlying SLE Further investigation of offending agent Question differential diagnosis	Ustekinumab* Janus kinase 1 inhibitors*
DILE	Cessation of offending agent	Cessation of offending agent	

TABLE 3:
Lifestyle interventions in SLE

FURTHER OSTEOPATHIC CONSIDERATIONS

SLE PATIENTS ARE PRONE TO	WHAT TO DO FOR SLE PATIENTS	WHAT TO AVOID IN SLE PATIENTS
Accelerated atherosclerosis	Balanced diet, smoking cessation, statin as needed[11]	
Arthralgia and other associated symptoms	Physical therapy, osteopathic manipulative therapy, exercise[75]	High-velocity, low-amplitude technique
Depression	CBT, psychiatrist trained in SLE, frequent screening for mood changes and substance abuse	
Fatigue	Exercise, healthy diet, CBT	Lack of sleep, overexertion
Increased risk of infection	Stay up to date on vaccinations (inactivated vaccines such as PCV13 and PPSV23).[76–79] Personal protective equipment. Counseling that immunizations may be less effective.	
Low vitaminD/ osteopenia/ osteoporosis	Check vitamin D levels; supplement as needed[80]	Chronic steroid use
Photosensitivity	Broad-spectrum sun protection	
Hematologic changes	Monitor and treat infection[12]	

CONCLUSION

Systemic lupus erythematosus is a multi-organ progressive autoimmune disease with manifestations that vary by person. Disease severity can be classified clinically by the SLEDAI-2K, which then can guide osteopathic treatment that considers body unity, self-regulation, and the interrelationship of structure and function together. There are many unique challenges facing those experiencing renal or neuropsychiatric symptoms or drug side effects and those who are pregnant or planning to conceive. Current guidelines, which are frequently updated as new medical advances are found, currently suggest targeting a low SLE activity state, as sustained remission is difficult to achieve. Osteopathic physicians can help facilitate a low SLE activity state by not only employing guideline-recommended treatment, but also integrating osteopathic screening tools and treatment into the care of the patient for an encompassing treatment plan that addresses the patient as a whole, and not just as a disease. Lastly, osteopathic physicians are encouraged to remain conscientious of the burden of chronic disease on their patients, and treatment goals should focus on decreasing disease activity and severity to optimize quality of life.

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BRIEF REPORT

COMBATING POOR MENTAL HEALTH IN EMERGENCY RESPONDERS: HELPING EMERGENCY RESPONDERS OVERCOME (HERO) ACT

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KEYWORDS

Emergency responders

Suicide

Mental health programs

HERO Act

ABSTRACT

Suicide rates are alarmingly higher among emergency responders than the general public, and it is estimated that 30% of first responders develop behavioral health conditions compared with 20% in the general population. Emergency responders experience their share of work-related stresses, but mental health problems in this demographic are often under-reported. For example, only 40% of suicides committed by emergency responders are reported. Amid these issues, there is a lack of best practice guidelines for mental health treatment among emergency responders. Hence, the stage is set for legislation to focus on improving mental health among emergency responders.

The Helping Emergency Responders Overcome (HERO) Act seeks to improve mental health among emergency responders through improved detection, prevention, and treatment, ultimately leading to decreased rates of suicide. The HERO Act would implement data systems to capture rates and risk factors related to suicide, establish behavioral health and wellness programs within emergency responder departments, and implement evidence-based best practices to identify, prevent, and treat post-traumatic stress disorder in emergency responders.

Osteopathic family medicine physicians play a crucial role in screening and managing poor mental health among their patients. Caring for the body, mind, and spirit is a core tenet of osteopathic medicine; therefore, osteopathic family physicians are uniquely positioned to help emergency responders overcome their mental health struggles. Given the prevalence of emergency responders who receive care from such physicians, and the value osteopathic medicine can offer this population, we encourage the profession to contribute to discussions surrounding the HERO Act.

INTRODUCTION

Suicide rates are alarmingly higher among emergency responders than the public, with 30% of first responders developing behavioral health conditions compared to 20% in the general population.[1,2] H.R. 1480-Helping Emergency Responders Overcome (HERO) Act was introduced to combat mental health concerns among emergency responders by improving detection, prevention, and treatment of mental health concerns in this population[3]. Having passed the House, this bill is under consideration within the Senate.

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This policy issue is important to osteopathic family physicians as our patients include emergency responders, and we practice holistic medicine. Thus, we play a significant role in detecting, treating, and advocating for changes in current mental health practices.

BACKGROUND AND SIGNIFICANCE

Among first responders, the career prevalence of suicidal ideation, plans, and attempts are 46.8%, 19.2%, 15.5%, respectively; this differs from the lifetime prevalence of suicidal ideation, plans, and attempts in the general population, which are 13.5%, 3.9%, and 4.6%, respectively.[4] Female emergency responders have the second highest rate of suicide, and male emergency responders have the sixth highest rate of suicide.[5] Firefighters report the highest level of post-traumatic stress disorder (PTSD) symptoms among emergency responders at 17–22%.[6]

Despite their work-related stress, emergency responders often under-report mental health challenges, fearing job discrimination and negative performance evaluations by peers and supervisors.[7] Only 40% of suicides committed by firefighters and police officers are reported.[8] When adjusted for under-reporting, firefighters and police officers are twice as likely to die from suicide than in the line of duty. Stigma, prioritizing bravery and toughness, lack of media coverage of emergency responder suicides, and lack of suicide prevention training are documented barriers to emergency responders accessing mental healthcare.[8] The HERO Aact seeks to address suicidality, poor reliability of reported suicide rates, and lack of guidelines for suicide prevention programs amongst emergency responders.[3]

OUTCOMES AND STAKEHOLDERS

The HERO Act intends to improve mental health and decrease suicidality among emergency responders through improved detection, prevention, and treatment.[3] It will fund efforts to establish evidence-based best practices for identifying, treating, and preventing PTSD and co-occurring disorders in emergency responders.[3] It will provide grants to execute behavioral health programs within emergency responder departments, and it will produce emergency responder-specific mental health treatment educational materials for mental healthcare professional.[3]

The HERO Act is supported by the International Association of Fire Fighters, the National Volunteer Fire Council, the American Foundation of Suicide Prevention, the International Association of Fire Chiefs, the American Association of Suicidology, and the Firefighter Behavioral Health Alliance.[9]

ALTERNATIVE STRATEGIES

Alternatives to the strategies proposed in the HERO Act include resiliency training and Critical Incident Stress Debriefing (CISD).[10] Many emergency responder training programs emphasize resilience training to improve mental health.[11] Among emergency responders, high baseline resilience is correlated with better quality of life and better coping with PTSD.[12] The Substance Abuse and Mental Health Services Administration recommends self-efficacy and resilience training for emergency responders before they go into the field to improve their mental health and reduce adverse outcomes.[13]

CISD is a technique wherein responders disclose traumatic experiences in group settings with trained facilitators. It intends to promote community in responders with shared trauma, while also allowing identification of responders needing further counseling.[13] Responders have described CISD as "intrusive," causing further distress and worse feelings following these discussions.[14]

APPLICATIONS FOR OSTEOPATHIC FAMILY MEDICINE

The HERO Act is important to the field of family medicine, as such providers are the first line for many patients with mental health concerns. Eighty percent (80%) of individuals who completed suicide had contacted family medicine providers within one year of suicide, and 44% had contacted family medicine providers within one month of suicide.[15] Only 31% contacted mental healthcare providers in the year prior to completing suicide.[15] Efforts by family medicine providers to manage suicide concerns include practitioner education programs, suicide risk and mood disturbance screenings, and management of depression symptoms and suicide risk.[16]

A pilot study of osteopathic manipulative treatment (OMT) on emergency responders with techniques including rib raising, sacral rocking, suboccipital inhibition, and CV4 Stillpoint induction, successfully improved psychological self-assessment scores and created alterations in biomarkers (IL-6, IL-2, hCRP, and cortisol) associated with stress, anxiety, and depression when compared to sham treatment.[17]

Osteopathic physicians may perform the OMT techniques mentioned above on their first responder patients, who report to their clinics with symptoms of stress, anxiety, and depression. Further studies conducted on OMT techniques for the first-responder population could further validate the usefulness of OMT in this population. This would add to evidence-based research recommendations to use in practice following implementation of the HERO Act.

Doctors of osteopathic medicine physicians, *OFP*, and osteopathic associations can advocate for the HERO Act by issuing public statements in support of the HERO Act and by individually contacting their senators, encouraging them to vote in favor of the HERO Act.

RECOMMENDATIONS

Emergency responders are essential members of our communities. Tragically, they are at "significant risk for developing mental health problems due to the nature, frequency, and intensity of duty-related traumatic exposure".[18] Given the prevalence of emergency responders cared for by osteopathic family physicians, it would be valuable for our profession to contribute to discussions surrounding this legislation. Furthermore, we recommend osteopathic family physicians advocate for OMT techniques, proven successful in treating emergency responders, be considered as part of the evidence-based best practices used in creating guidelines and programs under the HERO Act.

CONCLUSION

Compared with the general population, emergency responders are at increased risk for death by suicide.[1] While strategies exist to reduce mental health challenges among emergency responders, many are not backed by evidence.[11] The HERO Act aims to negate this discrepancy by providing resources to those working to address this problem alongside emergency responders, like family physicians who are in the position to identify, prevent, and treat mental health disorders in emergency responders.[3] Osteopathic family physicians are trained with an emphasis on holistic medicine and caring for the mind, body, and spirit of their patients. They are uniquely qualified to advocate for and serve emergency responders with mental health concerns predisposing to suicidality.

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CLINICAL IMAGE

A CASE OF GUTTATE PSORIASIS

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CASE PRESENTATION

A 24-year-old- healthy male soldier presented with a chief complaint of a rash that he first noticed 2–3 days prior. The lesions were noticed first on his arms, although he also noted lesions on both his trunk and legs. The patient denied recent illness such as sore throat or other upper respiratory symptoms. He reported that lesions were mildly itchy but otherwise did not report pain or other associated symptoms. He has no history of similar rash in the past. His family history is noncontributory. He does not have a personal or family history of a known autoimmune disorder or psoriasis.

The exam revealed numerous well-demarcated 1- to 10-mm pink papules coalescing into occasional plaques with overlying fine scale distributed throughout his upper extremities, trunk, and proximal lower extremities (Figures 1 and 2). The remainder of the exam was unremarkable. A punch biopsy was performed, which revealed findings consistent with guttate psoriasis. The patient was referred to a dermatologist, where he was treated with narrow-band ultraviolet B (UVB) phototherapy.

EDUCATION

Psoriasis is a chronic, inflammatory, multisystem disease that occurs in up to 2% of the world population.[1] This condition most commonly involves the skin but can also involve nails and joints. Several distinct variants of psoriasis exist, including plaque psoriasis, guttate psoriasis, generalized or localized pustular psoriasis, and erythrodermic psoriasis.[2] The most common type of psoriasis is the plaque form of psoriasis, which represents more than 90% of all variants of psoriasis and is commonly recognized through skin lesions characterized by round, erythematous plaques with a loosely adherent silvery white scale. Plaque psoriasis also most commonly appears symmetrically over the elbows, knees, and scalp.[3,4]

Guttate psoriasis differs from the more common plaque psoriasis in several ways. For example, it is often of abrupt onset and is more commonly seen in children and adolescents. A history of an upper respiratory infection such as streptococcal pharyngitis often occurs 1–3 weeks prior to the onset of this condition.[1, 2] Guttate psoriasis accounts for only about 2% of all cases of psoriasis, making it much less common than plaque psoriasis.[2]

Like the more common plaque psoriasis, the diagnosis of guttate psoriasis is usually made by clinical examination. However, the presence of an elevated anti-streptolysin titer, which indicates a recent streptococcal infection, may support the diagnosis.[1] The exanthem characteristic of this condition includes morphology featuring several erythematous, round, drop-like or "gutta" lesions less than 1 cm (~0.39 in.) and usually found on the trunk and extremities in a centripetal fashion[3,4] (Figures 1 and 2), Skin biopsy of a lesion may reveal hyperkeratosis, rete ridge elongation, parakeratosis, and collections of neutrophils in the epidermis called Munro's microabscesses.[4]

There are also genetic factors that may play a role in the pathogenesis of guttate psoriasis.[1,3] Both guttate psoriasis and the more common plaque variant psoriasis have an association to the PSORS1 genetic locus.[4] As a result of genetic associations, patients who have an episode of guttate psoriasis have a 40% chance of going on to develop a more chronic form of psoriasis after their first outbreak.[3]

Interestingly, studies have also found that patients who have shorter resolutions of their rash or test positive for streptococci are less likely to develop a more chronic form of psoriasis.[5]

TREATMENT

There is a paucity of research of guttate psoriasis treatments, making evidenced-based recommendations difficult.[5,7] Management recommendations are based on evidence of the treatment of other plaque psoriasis.[6] Topical steroids and phototherapy are both considered first-line options.[1] For mild cases, topical steroids may suffice.[1] With moderate to severe guttate psoriasis, recommended phototherapy options include narrow- or broad-band UVB phototherapy or ultraviolet band A (UVA) phototherapy in conjunction with psoralen (PUVA).[1,8] One small observational study showed benefit from narrow-band UVB phototherapy in the treatment of guttate psoriasis, but comparisons between different phototherapies and other treatment options are lacking.[5,9] Vitamin D analogs, salicylic acid, and topical retinoids have also been used, but evidence of effectiveness is lacking.[1,5,6] Biologics have not been studied for guttate psoriasis and are not currently used unless plaque lesions occur.[1] The few studies that have explored antistreptococcal treatments, including antibiotics or tonsillectomy,

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are of poor quality, precluding their routine use in managing guttate psoriasis associated with group B streptococcal infection.[6,10]

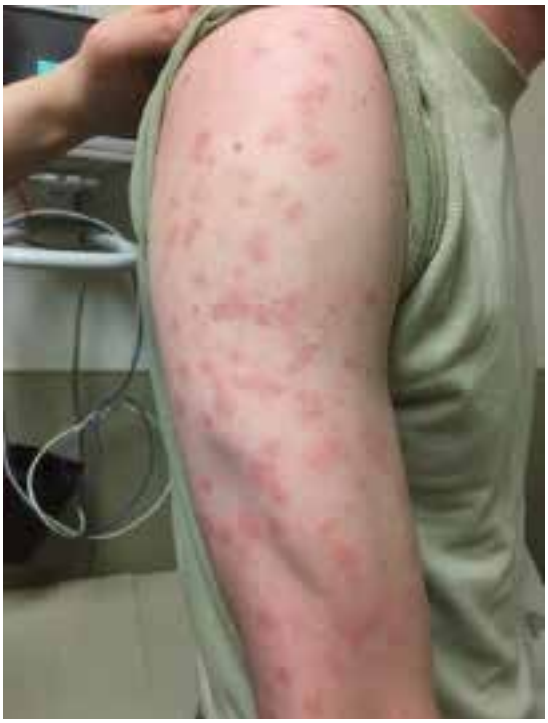

FIGURE 1:
Guttate psoriasis in a male patient on right arm.

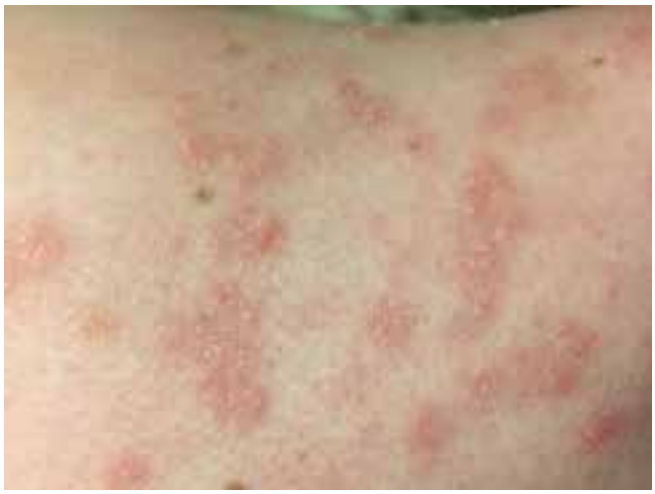

FIGURE 2:
Guttate psoriasis, clinical exam.

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PATIENT EDUCATION HANDOUT

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GERD: Gastroesophageal Reflux Disease and its Prevention

Larry J. Witmer, DO; Kiersten Waugh, OMS-III

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Gastroesophageal reflux disease (GERD) occurs when stomach contents backflow into the esophagus, such as regurgitation of stomach acid along with undigested food, causing symptoms like heartburn. Heartburn is a burning type of pain that occurs along the center of the chest behind the breastbone and usually occurs after eating. Other symptoms associated with GERD are difficulty swallowing, a cough lasting longer than 3 months, sensation of a lump in the throat, increased saliva, recurrent sore throat, loss of tooth enamel, and nausea. Common causes of GERD include alcohol, smoking, caffeine, certain foods, specific medications, pregnancy, obesity, hiatal hernia, or an anatomic problem with the esophagus. You can prevent GERD by adjusting your diet and avoiding some of the risk factors that worsen acid reflux. It is important to treat GERD and prevent it from worsening to avoid further complications and disease progression.

Preventive measures include:

- Avoiding alcoholic beverages;
- Smoking cessation;
- Avoiding caffeine;
- Losing weight;
- Avoiding acidic foods like citrus, onions, garlic, tomato-based products, peppermint, and chocolate;
- Decreasing consumption of fatty foods;
- Eating smaller, more frequent meals and avoiding lying down for 3-4 hours after a meal;
- Elevating the head of your bed by 8 inches or using an extra pillow;
- Avoiding eating within 3 hours of going to bed; and
- Avoiding medications that worsen GERD symptoms (calcium channel blockers, anticholinergics, nitrates, tricyclic antidepressants, beta-agonists, alpha-adrenergic agonists, theophylline, opioids, barbiturates, and diazepam).

MEDICAL CARE AND TREATMENT OPTIONS:

If you feel sick or have questions about GERD, talk to your osteopathic family physician. They can check whether you might have GERD by reviewing your health history, examining you, and performing the appropriate medical tests, if necessary. Your physician can help you feel better by suggesting changes to your daily routine and potentially prescribing you medicine, known as proton-pump inhibitors, to stop your stomach from making too much acid. Such medications can help prevent the recurrence of GERD and potentially curtail any bad effects related to GERD. If you need help right away, call your doctor or 911.

SOURCE(S):

American Academy of Family Physicians, Medscape, and UpToDate.com.

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PATIENT EDUCATION HANDOUT

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Advanced Maternal Age

Alicia Lunardhi, OMS-IV; Amanda Frugoli, DO, FACOI; David Crownover, MD

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WHAT IS ADVANCED MATERNAL AGE

Advanced maternal age (AMA) is the medical term to describe a woman who is pregnant over the age of 35.[1] Many women are delaying pregnancy into their thirties and later with success, but there are certain risks that you should discuss with your physician. Even though being pregnant at any reproductive age is not risk-free, there are more risks for both mother and baby when you are over 35 years old. A preconception discussion and plan with your physician can help mitigate these risks. It is important to receive prenatal care to ensure the safest pregnancy possible.

INCREASED RISKS OF AMA PREGNANCY

Miscarriage

All women are at risk for miscarriage. However, this risk increases when women are over the age of 35. Risk of miscarriage in women ages 20–30 is 8.9% versus 74.7% in women over age 40.[2]

Genetic abnormalities

The overall risk of having a baby with chromosomal abnormality is small, but the rates increase with maternal age. The most common abnormality is Down syndrome or trisomy 21. At age 20, the risk of having a baby with Down syndrome is 1 in 1,480 pregnancies, versus 1 in 353 pregnancies at age 35, versus 1 in 35 at age 45.[3] Prenatal screening and diagnostic tests are available and offered for all pregnancies. Genetic testing is available to screen mother, father, and fetus for common genetic disorders. Having a discussion with your physician is important.

Other risks[4]

- Fetal anomalies, such as heart defects,
- Intrauterine growth restriction resulting in babies that are smaller than average,
- Preterm birth (delivery before 37 weeks, which may lead to health problems for the neonate),
- Stillbirth,
- Multiple gestation pregnancy (twins, triplets, etc.),
- Gestational diabetes and type 2 diabetes,
- Hypertension/preeclampsia,
- Placenta previa (placenta lies over the cervix, blocking the exit for baby during delivery),
- Placental abruption (separation of the placenta from the uterus before delivery), and
- Increased risk of C-section.

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HOW DOES BEING OF AMA CHANGE MY PREGNANCY CARE?

Additional monitoring and medication may be recommended during your pregnancy to ensure the health and safety of you and your baby. Additional ultrasounds can be used to check for any abnormalities and assess amniotic fluid volume during the pregnancy due to the increased risk of intrauterine growth restriction in AMA pregnancies.[1]

Nonstress tests (NSTs) or biophysical profile (BPP) testing may be used once or twice weekly after 36 weeks to monitor fetal wellbeing.[1] Testing may begin earlier in the pregnancy if other conditions are present. During the NST, a machine that can monitor contractions and the baby's fetal heartbeat for 20 minutes or longer will be attached to you. This can give the physician information about how your baby is doing.

You may be asked to start a low-dose aspirin ("baby aspirin") 81 mg starting at 12 weeks, which can help reduce the risk of preeclampsia or high blood pressure in pregnancy.[5] This medication may not be appropriate for all women, so be sure to consult your physician before beginning any medication during pregnancy.

CAN I DO ANYTHING TO DECREASE THE RISKS OF AN AMA PREGNANCY?

It is important to know that most pregnancies progress without any issues when you are over 35 years old. There is simply an increased risk of pregnancy complications with increasing age. Receiving regular prenatal care can help identify and treat these problems that may arise during pregnancy. You may even want to talk to your physician before you become pregnant to make sure you are doing everything you can to optimize your health *before* you become pregnant.

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CELEBRATING EXCELLENCE IN THE PROFESSION

The American College of Osteopathic Family Physicians (ACOFP) and the ACOFP Board of Governors recognize the following exceptional members for their contributions to the organization and the osteopathic profession.

ACOFP OSTEOPATHIC FAMILY PHYSICIAN OF THE YEAR AWARD

The ACOFP Osteopathic Family Physician of the Year Award honors physicians who have made outstanding contributions to the osteopathic profession and local communities.

Joshua S. Coren, DO, MBA, FACOFP, is the senior associate dean of clinical affairs and a professor of family medicine at Rowan University School of Osteopathic Medicine (RowanSOM). Dr. Coren has been the principal investigator for two federal grants focusing on training osteopathic medical students in underserved communities and has worked as the co-director of the International Primary Care Education Alliance, leading efforts to train China's physician workforce in primary care education. In 2018, Dr. Coren was inducted into the Gold Humanism Honor Society at RowanSOM.

Dr. Coren has participated in many ACOFP committees, including serving as the chair of the ACOFP Program Committee in 2016. He is a program director in continuing medical education at the American Osteopathic Association (AOA) and is a medical school evaluator on the AOA's Commission on Osteopathic College Accreditation. In addition to being recognized for his achievements by leading osteopathic medical associations, including receiving ACOFP's Emerging Leader Award in 2010 and ACOFP's Educator of the Year in 2022, Dr. Coren has been voted one of South Jersey Magazine's top physicians by his peers and readers for several years.

2022 LIFETIME ACHIEVEMENT AWARD

The ACOFP Lifetime Achievement Award honors individuals for career-long service to their patients, osteopathic family medicine and ACOFP.

Donald E. Jablonski, DO, FAODME, FACOFP, has been practicing osteopathic family medicine for over forty years and still practices part time. He began his medical career at the Chicago College of Osteopathic Medicine and eventually started a private practice in Ormond Beach, Florida. Shortly after setting up his practice, he was appointed director of medical education at Peninsula Medical Center. Dr. Jablonski left Florida to pursue medical academia and was appointed associate professor of family medicine at Ohio University College of Osteopathic Medicine (OUCOM). While at OUCOM, he served on several committees including the Student Progress Committee and was the medical education advisor and chairman of the UR-CQI Committee. In 1997 he was asked to be the CME seminar chairman for the Ohio Osteopathic Association Annual Convention. He also served as chairman of the "Patient Provider Relations Committee" for the Ohio Department of Health. After relocating to North Carolina, Dr. Jablonski became a member of the North Carolina Osteopathic Medical Association (NCOMA) and over the years served as president twice and organized several CME programs. As president of NCOMA he was asked to be on the "Primary Care and Specialty Supply Steering Committee" of the North Carolina Institute of Health. Dr. Jablonski was responsible in forming the North Carolina Society of the ACOFP and served as president and CME director for five years. In 2006, Dr. Jablonski was appointed to the North Carolina Medical Board where he served for six years, and, in 2010, was elected president. Over the past 40 years, Dr. Jablonski has received numerous awards. As a mentor and leader, Dr. Jablonski feels strongly about physician involvement in all aspects of osteopathic medicine, which include lecturing, writing articles for the journals, and political input to various societies as well as participating in leadership within the organizations.

ACOFP DIVERSITY, EQUITY, AND INCLUSION AWARD

The ACOFP Diversity, Equity and Inclusion Award (DEI) recognizes osteopathic family physicians who make significant contributions toward enhancing DEI within the profession, honoring those who have demonstrated behaviors or led initiatives that foster these principles within diverse and underrepresented communities.

Salvatore J. Biazzo, DO, earned his medical degree from Rowan University School of Osteopathic Medicine, where he also served as chief resident. He has been practicing in Las Vegas, Nevada since 2001, providing care to the LGBTQ+ community. He joined the University of Nevada Las Vegas (UNLV) in 2007 and currently serves as the senior staff physician and medical director of the Student Health Center and Faculty/Staff Treatment (FAST) Center. In addition to serving as the senior staff physician and medical director of the FAST, Dr. Biazzo is an adjunct clinical professor of family medicine at Touro University School of Osteopathic Medicine. Addressing the healthcare disparities within the UNLV community, Dr. Biazzo developed the UNLV multidisciplinary Transgender Care Team, which won a University Award for Outstanding Wellness Program in 2022, and he established an ongoing cultural competency training module or the Wellness Center staff. In 2021, he was the recipient of the UNLV Administrative Faculty of the Year Award. A physician member of the World Professional Association for Transgender Health (WPATH), Dr. Biazzo has promoted best practices guidelines for LGBTQ+ health care not only at UNLV, but on the state level through his participation in the Nevada Minority Health and Equity Coalition and the Nevada Gender Affirming Healthcare Project.

ACOFP EXCELLENCE IN ADVOCACY AWARD

The ACOFP Excellence in Advocacy Award recognizes physicians who have significantly contributed their time and expertise to national healthcare policy issues and is presented in honor of Marcelino J. Oliva Jr., DO, FACOFP *dist*.

Linda F. Delo, DO, FACOFP, is past president of the Florida Society ACOFP and the Florida Osteopathic Medical Association (FOMA) and was honored to receive the FOMA Physician of the Year Award in 2021. She has served on the Bureau of Socioeconomic Affairs (now called CERA or the Council on Economic and Regulatory Affairs) with the American Osteopathic Association since 2011. Appointed chair of the CERA in 2021, she was recently reappointed through 2025. Dr. Delo has been an active ACOFP member and serves as chair of the Federal Legislative and Advocacy Committee and is on the Practice Management Committee as well. She has served on the physician workforce advisory counsel to the Florida governor since 2015 and is a Florida Blue physician advisor. She has been in private independent practice for over 35 yearsand has been recognized for leading an NCQA-certified level 3 Patient Centered Medical Home since 2014.

ACOFP OSTEOPATHIC FAMILY MEDICINE EDUCATOR OF THE YEAR AWARD

The ACOFP Osteopathic Family Medicine Educator of the Year Award was launched in 2010 and honors individuals who exemplify the osteopathic family medicine profession's highest standards of excellence in teaching and have made efforts towards the academic achievement of osteopathic students and residents.

Carol S. Browne, DO, FACOFP, is professor and chair of the Osteopathic Principles and Practices department within the Office of Clinically Applied Science Education at the University of the Incarnate Word School of Osteopathic Medicine (UIWSOM). A founding faculty member at the UIWSOM, she is the co-lead of the Developing Osteopathic Clinical Skills Curriculum Integration Team. Dr. Browne is active with learners as a faculty advisor for the Student ACOFP chapter, the Student American Academy of Osteopathy, and the Pride in Practice organization. She served as a Texas Society of the ACOFP (TXACOFP) board member for nearly two decades and was elected president in 2022. She also co-chairs the Texas Osteopathic Medical Association (TOMA) and TOMA/TXACOFP CME events. Dr. Browne was a faculty member at the University of North Texas Health Science Center-Texas College of Osteopathic Medicine (UNTHSC-TCOM) from 1989-1999, where she received the National Student Osteopathic Medical Association's 1996 George Northup Osteopathic Educator of the Year, the 1996 TCOM Gender Equity Award, and the 1998 ML Coleman Clinical Faculty of the Year. After leaving UNTHSC-TCOM, she practiced family medicine/OMM in both central Missouri and Florida where she frequently precepted both osteopathic students and residents until joining the UIWSOM faculty in 2016. Dr. Browne is passionate about keeping "osteopathic" in osteopathic family medicine and strives to instill a love for osteopathic medicine in all her students.

ACOFP OUTSTANDING FEMALE LEADER OF THE YEAR AWARD

The ACOFP Outstanding Female Leader Award honors female physicians who serve as role models, teachers, leaders and sources of inspiration for men and women alike.

Trudy J. Milner, DO, has been involved in ACOFP for many years. She has served at the state level as a past president of the Oklahoma Society of the ACOFP and continues to serve currently as a trustee to the Oklahoma Society of the ACOFP. Dr. Milner has been a strong advocate for osteopathic students in Oklahoma. She is an active participant in our mentor-mentee program with Oklahoma State University College of Osteopathic Medicine. Dr. Milner seeks out students, residents, and new physicians and encourages them along the way, often maintaining contact with her mentees and helping them in any way possible. She has been recognized as such a great leader in Oklahoma that she was appointed to the Oklahoma State University A&M Board of Regents and just completed a term as chair to the Board. Dr. Milner has continued to practice family medicine throughout these commitments and her patients praise her highly. She is well regarded in her community.

ACOFP NEW OSTEOPATHIC PHYSICIAN OF THE YEAR AWARD

The ACOFP New Osteopathic Physician of the Year Award recognizes physicians who have made significant contributions to family medicine between 2–5 years after entering the specialty.

Garrett L. Kirkpatrick, DO, is a Family Physician at Cleveland Clinic Beachcliff Family Medicine in Rocky River, Ohio. As a student at the Philadelphia College of Osteopathic Medicine (PCOM), Dr. Kirkpatrick became an active member of ACOFP, and during residency at UPMC Altoona Family Physicians in Altoona, Pennsylvania, he was a member of the ACOFP Residents Committee and was the lead architect of the current ACOFP Resident Council while he served as the resident governor on the ACOFP Board of Governors. He has served as the chair of the ACOFP New Physicians Committee for the past two years and sits on the Membership Committee and is the new physician liaison for the CME Advisory Council. He was a member of the ACOFP Future Leaders Committee and the ACOFP Public Relations/Family Medicine for America's Health Committee. In addition to his service for ACOFP on a national level, Dr. Kirkpatrick has also held leadership positions within the ACOFP on the state level in both Pennsylvania and Ohio and is currently a member of the Ohio ACOFP Board of Governors. Dr. Kirkpatrick also serves on numerous committees at the Cleveland Clinic.

2023 DISTINGUISHED SERVICE AWARDS

The ACOFP Distinguished Service Award honors individuals who demonstrate outstanding service to ACOFP through committee involvement or other activities that help achieve ACOFP's objectives.

Jeffrey S. Grove, DO, FACOFP *dist.*, is a family physician at Suncoast Family Medical Associates, which he joined in 1993 after completing his internship and family medicine residency at Sun Coast Hospital. Dr. Grove is board certified in family medicine with added certification in geriatrics. He is a graduate of Nova Southeastern University College of Osteopathic Medicine where he is a past-president of the NSU-COM Alumni Association. He currently serves on the Board of Governors for the NSU Health Professions Division and was awarded the 2004 Alumni of the Year Award for Nova Southeastern University. A member of ACOFP for over 30 years, Dr. Grove is a recipient of the 2020 ACOFP Osteopathic Physician of the Year award and the 2016 ACOFP Excellence in Advocacy Award. As founder of the ACOFP LGBTQI+ Committee and the Jeffrey Grove, DO, FACOFP dist., Minority/LGBTQI+ Health Disparity & Wellness Poster Competition, Dr. Grove has been a champion for diverse populations in osteopathic family medicine and for the LGBTQI+ community. In 2019, Crain's Chicago Business named him as a Notable LGBTQ Executive. Dr. Grove is a member of the American Osteopathic Association Council on Continuing Medical Education where he was chairman from 2009 to 2016. In addition, he is the secretary for the Osteopathic Political Action Committee (OPAC)-American Osteopathic Information Association (AOIA) Board of Directors and has previously served on the American Osteopathic Association (AOA) Bureau of State Government Affairs and on the AOA Building Committee.

Kevin V. de Regnier, DO, FACOFP *dist.*, is an osteopathic family physician and president of Madison County Medical Associates in Winterset, Iowa. He served as president of ACOFP in 2015 to 2016, is a distinguished Fellow, and has volunteered as a member and chair on numerous ACOFP committees. He is also a trustee of the American Osteopathic Association (AOA) Board of Trustees.In addition to over 30 years as a physician, Dr. de Regnier offers his time and services to several other osteopathic associations and medicalorganizations and supports his community by helping with causes such as suicide prevention, hospice care, first responders support, the DARE program, and more. A true osteopathic physician, Dr. de Regnier cares for his patient's mind, body and spirit by regularly filling the pulpit in his church.

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2023 SANDER A. KUSHNER, DO, FACOFP MEMORIAL OSTEOPATHIC FAMILY MEDICINE RESIDENT AWARD

The Sander A. Kushner, DO, FACOFP Memorial Osteopathic Family Medicine Resident Award, sponsored by the ACOFP Foundation, honors residents who demonstrate outstanding academic achievement and motivation for careers in osteopathic family medicine.

Jordan Wong, DO, is a third-year family medicine resident at Sampson Regional Medical Center in Clinton, North Carolina. He earned his Doctorate of Osteopathic Medicine in 2020 at the University of Pikeville, Kentucky College of Osteopathic Medicine (KYCOM). As a servant-leader, he currently serves as the Resident Governor on the ACOFP Board of Governors and as the Resident Representative for the North Carolina Society of the ACOFP (NCSACOFP). He is passionateabout osteopathic family medicine and strives to remain at the forefront of advocacy for family physicians.

AACOFP Auxiliary TO THE AMERICAN COLLEGE OF OSTEOPATHIC FAMILY PHYSICIANS

2023 MARIE WISEMAN OUTSTANDING STUDENT OF THE YEAR AND EMERGING LEADER AWARD

The Marie Wiseman Outstanding Osteopathic Student of the Year Award—selected in partnership between ACOFP and the Auxiliary to the ACOFP—recognizes an osteopathic medical student who demonstrates strong philanthropic and community service.

Rachel Souza, DO `23, served as president of the Philadelphia College of Osteopathic Medicine's (PCOM) student chapter of ACOFP during her time as a student in the PCOM Doctor of Osteopathic Medicine program. Continuing her journey in ACOFP, Student Doctor Souza was elected secretary of the ACOFP National Student Executive Board (NSEB) and rose to vice president in 2022. Among her many leadership duties in this role, Student Doctor Souza is responsible for interacting with chapters from across the country to ensure they are successful and coordinating the board's annual community service project. In addition to her service in ACOFP, Student Doctor Souza was a member of the Primary Care Leadership Collaboration of the American Academy of Family Physicians (AAFP), the PCOM Student Run Clinic's Logistics Committee, and a PCOM DO Ambassador from 2020 to 2022. She holds a Bachelor of Science (ScB) degree in Neuroscience from Brown Universityand a Master of Science (ScM) degree in Behavioral and Social Sciences from Brown University School of Public Health. She will graduate with her DO from PCOM in May 2023.

MASTER PRECEPTOR AWARDS

Cheryl A. Hammes, DO, graduated from Ohio University Osteopathic College of Medicine in 1998 and completed her family medicine residency at South Pointe Hospital-Cleveland Clinic in 2001. She has been educating medical students since 2001 and currently holds appointments as an associate clinical professor in the departments of Family Medicine and Osteopathic Manipulative Medicine (OMM) at the Ohio University Heritage College of Osteopathic Medicine (OU-HCOM). Dr. Hammes has been the instructor of record for an OU-HCOM OMM Honors elective course since 2017 and oversees the curriculum for that course as well as the second year OMM curriculum as liaison. In 2007, Dr. Hammes launched her private practice, Integrative Wellness. She has facilitated patient care utilizing osteopathic, integrative, and functional medicine precepts for over 20 years in all ages. In addition, Dr. Hammes has served as an adjunct faculty member at the Cleveland Clinic South Pointe Hospital's ONMM3 residency program since 2005. She is board certified in family medicine and OMT as well as NMM/OMM.

Michael Srulevich, DO, MPH, FAAHPM, is an associate professor in the Department of Geriatric and Palliative Medicine at the Philadelphia College of Osteopathic Medicine (PCOM) and program director for the PCOM Hospice and Palliative Medicine Fellowship Program. Board certified in family medicine with additional qualification in geriatric hospice and palliative medicine, Dr. Srulevich practices in PCOM's specialty care clinic, provides long-term care to residents at four Philadelphia nursing homes, and is the lead physician for palliative medicine and the ethics committee chair at Roxborough Memorial Hospital. He has held several medical directorships and served as a National Board of Osteopathic Medical Examiners (NBOME) item writer for ethics, primary care, and geriatric/palliative medicine, all while maintaining relationships with his student learners and serving his community. Dr. Srulevich is particularly interested in the continuum of care in working with frail and seriously ill patients to seek treatments that most appropriately ensure a maximum quality of life.

George N. Spyropoulos, DO, has been a preceptor in family medicine since 1995. He received his Doctor of Osteopathic Medicine (DO) degree from the Philadelphia College of Osteopathic Medicine (PCOM) and completed his residency at the Medical Center of Delaware (now Christiana Care Health System). Upon completing his residency, Dr. Spyropoulos began his career in family medicine at Christiana Care Health System. Since joining the profession, Dr. Spyropoulos has been honored with the Christiana Care Health System's Preceptor of the Year Award ten times. In addition, he was the recipient of the Delaware Chapter of the American Academy of Family Physicians (AAFP) Teacher of the Year award in 2016. Dr. Spyropoulos has been teaching medical students and family medicine residents for decades, precepting both students and residents on a weekly basis. He has been a full-time faculty member in the Department of Family Medicine at PCOM since 2019 and has held other teaching and academic positions throughout his career.

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OF THE AMERICAN COLLEGE OF OSTEOPATHIC FAMILY PHYSICIANS

Fellow Awards of the American College of Osteopathic Family Physicians

The Fellow of the American College of Osteopathic Family Physician (FACOFP) is an honorary designation bestowed upon candidates who have contributed outstanding national and local service through teaching, authorship, research or professional leadership and who demonstrate dedication to ACOFP, as well as commitment to the health and welfare of their patients and to the future of osteopathic family medicine.

Jeffrey P. Cashman, DO, FACOFP

Jennifer Caudle, DO, FACOFP

Traci-lyn Eisenberg, DO, FACOFP

Sumeet Goel, DO, FACOFP

Cheryl A. Hammes, DO, FACOFP

Nicklaus James Hess, DO, FACOFP

Edward E. Hosbach, II, DO, FACOFP

Anne C. Jones, DO, MPH, FACOFP

Kristin K. Martin, DO, MS, FAAFP, FACOFP

Jeffrey T. Nelson, DO, FACOFP

Natalie A. Nevins, DO, MSHPE, FACOFP

Nicholas J. Pennings, DO, FOMA, FACOFP

Fellow Awards of the American College of Osteopathic Family Physicians

Stephanie T. Reese, DO, FACOFP

Raymond V. Romano, DO, FACOFP

Shirley Sharp, DO, FACOFP

Richard G. Sloan, Jr., DO, FACOFP

Kathleen E. Sweeney, DO, FACOFP

Lindsay Tjiattas-Saleski, DO, MBA, FACOEP, FACOFP

Ronald W. Torrance, II, DO, FACOFP

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OF THE AMERICAN COLLEGE OF OSTEOPATHIC FAMILY PHYSICIANS

Distinguished Fellow Awards of the American College of Osteopathic Family Physicians

The designation of Distinguished Fellow of the American College of Osteopathic Family Physicians acknowledges those Fellows who have distinguished themselves through service to ACOFP by meeting attendance, as well as by their support of the ACOFP's local and national governance and committees.

Nicole H. Bixler,
DO, MBA, FACOFP *dist*.

Melinda E. Ford,
DO, FACOFP *dist*.

Brian A. Kessler,
DO, FACOFP *dist*.

Saroj Misra,
DO, FACOFP *dist*.

Bruce R. Williams,
DO, FACOFP *dist*.

American College of Osteopathic Family Physicians
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