

CLINICAL IMAGE

ENLARGING PAINFUL TUMOR ON FINGER WEBSPACE

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Friable

Mass

Painful tumor

A 72-year-old male with a past medical history of diabetes mellitus type 2, atrial fibrillation, heart failure, hypertension and coronary artery disease presents to the outpatient clinic with a painful growth on his right hand for the past 3 months. He went to the ER for evaluation 1 month ago. The patient notes that the lesion had grown and caused swelling and pain. The base would slowly bleed if manipulated. The patient did not recall any injury or trauma; however, he often has small nicks and injuries without realizing it.

Examination revealed an irregular erythematous friable 2 cm x 3 cm tumor along the webbing between the fourth and fifth digits of the right hand with minimal yellow discharge and scaling at the base.

FIGURE 1:**CORRESPONDENCE:**

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FIGURE 2:**QUESTIONS:**

1. Which of the following is the most likely diagnosis?

- A. Amelanotic melanoma
- B. Bacillary angiomatosis
- C. Orf zoonotic infection
- D. Pyogenic granuloma

2. Mucosal lesions of the above diagnosis are most common in which age group?

- A. Adult men
- B. Adult women
- C. Children
- D. Pregnant women

3. What histological findings are most expected with the above diagnosis?

- A. Polymorphic arrangement of vessels
- B. Lobular capillaries with prominent endothelial cells with neutrophils and lymphocytes
- C. Intraepidermal vesiculation, eosinophilic inclusions, and papillary dermal edema
- D. Proliferating capillaries in a lobular arrangement lined by bland endothelial cells

4. Which of the following is the best treatment option for this patient?

- A. Cryotherapy
- B. Excision and electrodesiccation
- C. Intralesional steroids
- D. Topical timolol

ANSWERS:

Which of the following is the most likely diagnosis?

Correct Answer:

D. Pyogenic granuloma

Given the history of growth and bleeding, this is a classic case of pyogenic granuloma. Diagnosis is generally clinical, with report of rapid growth of an erythematous vascular lesion with occasional mention of previous trauma to the area.¹ Amelanotic melanoma should always be considered in the differential, and a biopsy needs to be obtained to rule it out.

Bacillary angiomatosis is caused by *Bartonella henselae*, typically from a patient being exposed to a cat bite. This is more commonly seen with immunocompromised or HIV/AIDS patients. Clinical presentation is similar to pyogenic granuloma; however, there is usually a history of a cat bite.

Orf zoonotic infection can also look similar to pyogenic granuloma, but there is an exposure to sheep or goats.

Mucosal lesions of the above diagnosis are most common in which age group?

Correct Answer:

A. Adult women

Pyogenic granulomas occur in all age groups. Mucosal pyogenic granulomas are more common in adult women than men, at an incidence rate of 2.6:1. It is noted that cutaneous pyogenic granulomas, as is the presentation in this case, are more common in male patients as compared to female patients, at an incidence rate of 1.2:1.² They are relatively common in children. Intraoral pyogenic granulomas can occur in the first months of pregnancy.

What histological findings are most expected with the above diagnosis?

Correct Answer:

D. Proliferating capillaries in a lobular arrangement lined by bland endothelial cells

Pyogenic granulomas often have the typical findings of a lobular arrangement of proliferating capillaries representing epithelial collarette. A histological difference between this and bacillary angiomatosis is the finding of bland endothelial cells in pyogenic granulomas as opposed to the expected finding of

multiple neutrophils, lymphocytes, and possible histiocytes in the latter.^{1,3,4,5} While amelanotic melanoma is a great masquerader, the vessel arrangements are often more polymorphic in nature.⁶ Intraepidermal vesiculation and eosinophilic inclusions are more commonly seen in Orf zoonotic infections.⁷

Which of the following is the best treatment option for this patient?

Correct Answer:

B. Excision and electrodesiccation

Cryotherapy would be reasonable for lesions smaller than 1 cm; however, recurrence is common. Given the large size of the lesion in our patient, cryotherapy is not the best option.

Shave excision with curettage and electrodesiccation of the base is the preferred treatment for larger lesions. Excision provides a histologic diagnosis, and electrodesiccation of the base controls bleeding and prevents recurrence.

Intralesional steroids are an option for therapy, but they require frequent treatments and recurrence is high.

Topical timolol is an option for smaller multiple lesions or use in pediatric patients, but it also has a high recurrence rate.^{8,9}

DISCUSSION:

Pyogenic granuloma, also known as lobular capillary hemangioma, is a common benign vascular tumor.¹⁰ This is a cutaneous or mucosal growth that typically has a friable surface and is further characterized by rapid growth.⁴ It can occur at any age but is more often seen in children and young adults.¹¹ Peak incidence is typically within the second or third decade of life. Pyogenic granuloma during pregnancy is common.¹² Mucosal pyogenic granulomas are most common in adult females.

The exact cause of pyogenic granuloma is unknown, although traumatic injury has been theorized as a trigger.¹³ Another theory involves drug-induced pyogenic granuloma. Possible offending pharmacologics include oral contraceptives, systemic retinoids, epidermal growth factor receptor inhibitors, topical fluorouracil, cyclosporine, tacrolimus, and HIV protease inhibitors.^{14,15} Formation of pyogenic granulomas during pregnancy has also been theorized to be secondary to hormone changes.¹⁰ Congenital variants of pyogenic granuloma are exceptionally rare and difficult to distinguish from infantile hemangiomas without histologic examination.

Pyogenic granulomas start off as small red papules that rapidly grow. The initial vascular appearance is due to the underlying capillaries being more prominent. This can lead to more bleeding in developing pyogenic granulomas.¹² In children, it is most common on the head and neck, whereas in adults, it is more commonly seen on the trunk and extremities.⁸ The size can range from a few millimeters to a few centimeters. Diagnosis of pyogenic granuloma is clinical based on history and physical examination. It is important to biopsy all pyogenic granulomas to rule out amelanotic melanoma.¹³

These tumors do not have potential for malignancy. However, spontaneous resolution of pyogenic granulomas is rare, with patients reporting frequent profuse bleeding episodes, ulcerations, and secondary infections.¹⁵ Surgical treatment is often necessary. Shave excision followed by curettage and electrodesiccation may be used in cosmetic areas; however, there remains a risk of reoccurrence. Complete primary surgical excision is generally recommended in less cosmetic areas.¹⁵ Surgical excision has the lowest recurrence rate but a high incidence of scar formation.¹³ Cryotherapy has a low recurrence but requires multiple treatments and has risk of scar formation. Topical timolol is useful for multiple smaller lesions in pediatric patients but has a high recurrence rate.^{8,9}

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