

## The Case of the Hemorrhagic Gingival Mass

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The following Case Challenge is provided in conjunction with the American Academy of Oral and Maxillofacial Pathology.

### **Case Summary**

This case challenge presents a patient with a gingival mass arising from the buccal interdental papilla between teeth #19 and #20.

This 24-year old black female presented with a chief complaint of this gingival mass. She states she first noticed the lesion about three months ago and it has gotten progressively larger. What is your diagnosis?

After you have finished reviewing the available diagnostic information, make the diagnosis.

## Diagnostic Information

### Clinical Findings

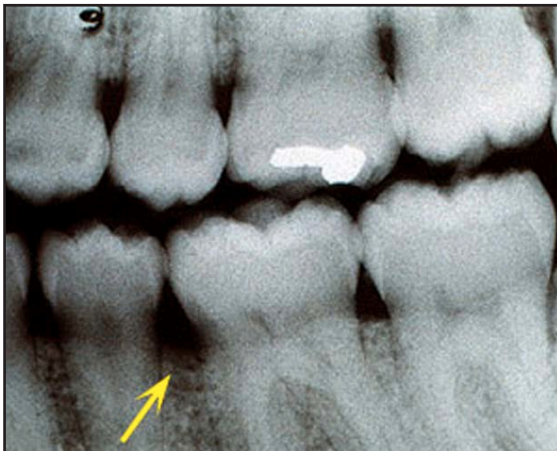
Clinical examination revealed a non-tender, bright-red pedunculated mass which arose from the buccal interdental papilla between teeth #19 and #20. (Figure 1) The mass tended to bleed easily upon manipulation. Generalized marginal gingivitis was seen throughout the mouth.



**Figure 1.** Buccal view of lesion.

### Bitewing Radiograph

A bitewing radiograph revealed slight bone loss at the crest of the alveolar bone between #19 and #20. (Figure 2) However, no obvious intrabony lesion was observed.



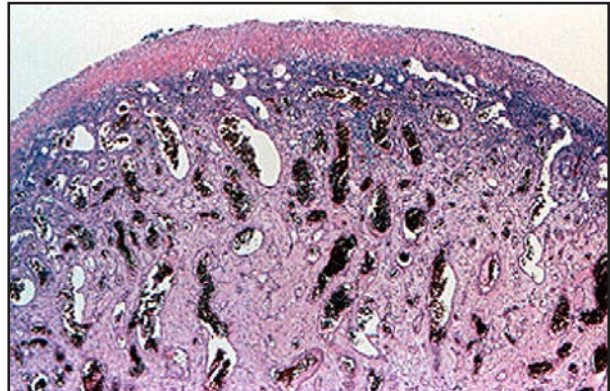
**Figure 2.** Bitewing radiograph showing only slight alveolar bone loss between #19 and #20.

### Additional Clinical History

During the review of the patient's medical history, she stated she currently was five months pregnant.

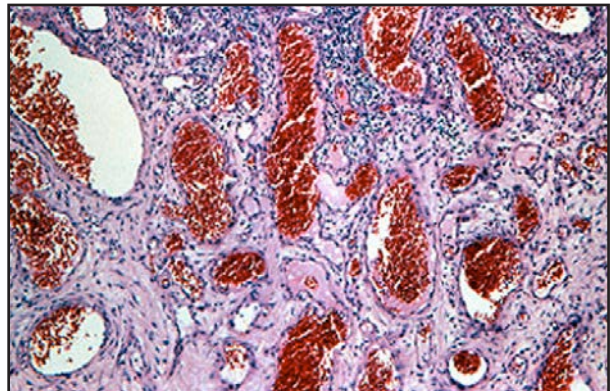
### Photomicrographs

Because the large size of the lesion was creating problems with eating and speaking, it was decided to excise the mass and submit it to the Oral Pathology Laboratory. Microscopic examination showed an ulcerated mass of granulation tissue that was covered by a thick fibrinopurulent membrane. (Figure 3)



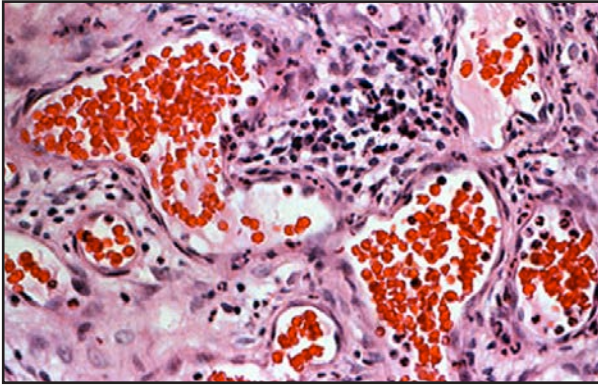
**Figure 3.** Low-power photomicrograph showing a mass of highly vascular granulation tissue. The epithelial surface is ulcerated and replaced by a fibrinopurulent membrane.

This tissue was characterized by numerous capillaries which were engorged with red blood cells. (Figure 4)



**Figure 4.** Medium-power photomicrograph showing dilated blood vessels engorged with red blood cells.

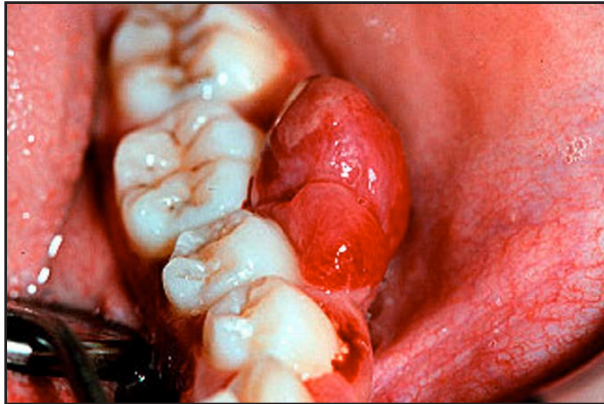
There was an associated mixed inflammatory infiltrate which included polymorphonuclear leukocytes, lymphocytes, and plasma cells. (Figure 5)



**Figure 5.** High-power photomicrograph showing capillaries with adjacent polymorphonuclear leukocytes, lymphocytes and plasma cells.

### Can you make the diagnosis?

This case challenge presents a patient with a gingival mass arising from the buccal interdental papilla between teeth #19 and #20.



### Select the Correct Diagnosis

- A. Squamous cell carcinoma
- B. Pyogenic granuloma
- C. Peripheral giant cell granuloma
- D. Peripheral ossifying fibroma

## Squamous Cell Carcinoma

**Choice A. Sorry, this is not the correct diagnosis.**

Although squamous cell carcinoma can occur on the gingiva, features of this malignant tumor were not present on the biopsy. Squamous cell carcinoma can occur at almost any age, but it is most common in middle-aged and older adults. The young age of this patient would be unusual for squamous cell carcinoma.

Please re-evaluate the information about this case.

## Pyogenic granuloma

### Choice B. Congratulations! You are correct.

The clinical and microscopic findings are both consistent with this diagnosis.

#### Discussion

The pyogenic granuloma is a reactive tumor-like growth of hyperplastic granulation tissue which is not considered to represent a true neoplasm.<sup>1-3</sup> The name is a misnomer; although it originally was believed to be caused by pyogenic organisms, it now is thought to be unrelated to infection but rather to be an exuberant tissue response to local irritation or trauma.<sup>1,4</sup> In addition, it is not a true granuloma.

The lesion typically presents as a smooth or lobulated mass with an ulcerated surface.<sup>1,4</sup> The mass usually is pedunculated, especially examples on the gingiva which characteristically arise from the interdental papilla. Pyogenic granulomas can show rapid growth, which may create concern for the patient or clinician that the lesion could be malignant.<sup>1,2</sup> Because of their vascular nature, most examples appear red to purple, although older lesions tend to become more collagenized and pink. Although the lesion usually is ulcerated and may bleed easily, most pyogenic granulomas are relatively painless. The size can vary from small growths of only a few millimeters to large masses that are several centimeters in diameter.

The pyogenic granuloma can occur anywhere in the oral cavity, but it shows a striking predilection for the gingiva which accounts for about 75% of all cases.<sup>4,5</sup> The lips, tongue, and buccal mucosa are the next most common sites.<sup>1,4,5</sup> Gingival

pyogenic granulomas are slightly more common on the maxillary arch and are more frequent on the anterior gingiva than the posterior gingiva.<sup>2,4</sup> They tend to occur more often on the facial gingiva than on the lingual aspect; some will grow between the teeth to include both the facial and lingual gingiva.

Pyogenic granulomas are most common in children and young adults, with a female predilection noted in most studies.<sup>1-3,5</sup> This female prevalence may be related to the vascular effects of estrogen and progesterone.<sup>6</sup> Gingival examples frequently develop in pregnant women, which has resulted in the terms “pregnancy tumor” and “granuloma gravidarum” for these lesions.<sup>7,8</sup> Such lesions may begin to develop during the first trimester, with the incidence increasing up through the seventh month of pregnancy.<sup>7</sup>

The pyogenic granuloma is treated by conservative surgical excision and usually does not recur. For gingival lesions, the excision should extend down to the periosteum, and the adjacent teeth should be thoroughly scaled in order to eliminate any source of continuing irritation.<sup>9</sup> On occasion, the lesion will return and require re-excision. In rare instances, multiple recurrences have been noted. As with any excised pathologic tissue, microscopic examination should be performed to rule out other more serious diagnoses.

For pyogenic granulomas associated with pregnancy, treatment may be deferred unless the mass causes a functional or cosmetic problem, as occurred in the present case.<sup>7,8,10</sup> The recurrence rate is higher for lesions removed during pregnancy, and some lesions have been known to resolve spontaneously after parturition.

## Peripheral Giant Cell Granuloma

**Choice C. Sorry, this is not the correct diagnosis.**

Although the clinical features would be consistent with this diagnosis, microscopic examination of the biopsy specimen did not show a proliferation of multinucleated giant cells.

Please re-evaluate the information about this case.

## Peripheral Ossifying Fibroma

**Choice D. Sorry, this is not the correct diagnosis.**

Although the peripheral ossifying fibroma may present as an ulcerated gingival mass, microscopic examination of the biopsy specimen did not reveal the formation of bone within the lesion.

Please re-evaluate the information about this case.



## References

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## About the Authors

*Note: Bio information was provided at the time the case challenge was developed.*

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