DIAGNOSTIC CHALLENGE Answers

Case 1

Diagnosis

1.Peripheral Giant Cell Granuloma

Management

2.Complete surgical excision (excision biopsy) along with curettage of underlying periosteum/periodontal ligament and removal of local irritants (plaque, calculus, and any traumatic factors)

Discussion

Peripheral Giant Cell Granuloma (PGCG) is a reactive, non-neoplastic, hyperplastic lesion that occurs exclusively on the gingiva or alveolar mucosa. It is characterized histologically by the presence of numerous multinucleated giant cells within a vascular fibrocellular stroma. The lesion is considered a localized response to chronic irritation rather than a true neoplasm.

PGCG most commonly arises from the periodontal ligament or periosteum. It is usually triggered by local irritants such as dental plaque, calculus, chronic trauma from mastication, faulty restorations, or food impaction. These irritants induce a reactive proliferation of connective tissue, leading to the formation of the lesion.

Clinically, PGCG is more frequently seen in adults, with a slight female predilection, and is commonly located in the mandibular anterior region. It typically presents as a localized gingival growth that may be sessile or occasionally pedunculated. The lesion appears as a reddish-blue to purple nodular mass that gradually increases in size. It is usually soft to firm in consistency and bleeds easily on probing or minor trauma. In some cases, superficial ulceration may also be present. Larger lesions may cause displacement of teeth or mild discomfort, although pain is generally absent.

Radiographically, early lesions may show no changes; however, in long-standing cases, superficial “cupping” resorption of the underlying alveolar bone may be observed. Occasionally, widening of the periodontal ligament space of adjacent teeth may also be seen.

Histopathologically, PGCG is characterized by the presence of numerous multinucleated giant cells dispersed within a highly cellular fibrovascular stroma. The connective tissue background often shows abundant blood vessels, extravasated red blood cells, and areas of hemosiderin deposition, along with varying degrees of chronic inflammatory infiltrate.

The differential diagnosis includes pyogenic granuloma, peripheral ossifying fibroma, and fibrous epulis, as these lesions may present with similar clinical appearances in the gingiva. Definitive diagnosis relies on histopathological examination.

The treatment of PGCG involves complete surgical excision of the lesion, including thorough curettage of the underlying periosteum or periodontal ligament. It is also essential to eliminate local irritants such as plaque, calculus, and any contributory traumatic factors to minimize recurrence. The prognosis is generally good, although recurrence may occur if excision is incomplete or irritants persist.

Our Patient

An excisional biopsy was performed under local anesthesia. The lesion was completely excised down to the base, and the specimen was submitted for histopathological examination. Oral prophylaxis was carried out, and local irritants were removed. The patient was advised periodic follow-up to monitor for recurrence.

Answers

Case 2

Diagnosis:
Fibrous Epulis

Differential Diagnosis:

Differential Diagnosis	Distinguishing Clinical Features
Peripheral Ossifying Fibroma (POF)	Firm gingival mass arising from interdental papilla; may show calcifications radiographically. Histopathology shows calcification and ossification
Peripheral Giant Cell Granuloma (PGCG)	Usually reddish-purple, bleeds easily, may produce superficial "cupping" resorption of underlying bone. Histopathology shows multiple giant cells
Pyogenic Granuloma (PG)	Soft, highly vascular, bright red lesion with marked tendency to bleed on minor trauma. Histopathology shows marked proliferation blood vessels

Discussion
Fibrous epulis is a common benign reactive lesion of the gingiva that develops in response to chronic local irritation rather than representing a true neoplasm. The term epulis refers to any localized gingival enlargement, while fibrous epulis specifically denotes a fibrous hyperplastic growth arising from the gingival connective tissue. Common etiological factors include plaque accumulation, calculus deposits, food impaction, defective restorations, ill-fitting prostheses, and chronic trauma. The lesion typically presents as a slow-growing, painless, sessile or pedunculated gingival mass that is pink in color and similar in appearance to the surrounding mucosa. It is usually firm to hard in consistency due to the abundance of collagenized fibrous tissue and is often immobile because of its attachment to the underlying gingiva. Although fibrous epulis is generally asymptomatic, larger lesions may interfere with mastication, oral hygiene practices, and esthetics. In some cases, surface ulceration caused by repeated trauma during chewing or tooth brushing may result in intermittent bleeding.
Clinically, fibrous epulis most commonly occurs on the interdental papilla and may be difficult to distinguish from other localized reactive gingival lesions such as pyogenic granuloma, peripheral giant cell granuloma, and peripheral ossifying fibroma. Therefore, clinical examination alone is insufficient for establishing a definitive diagnosis. Radiographic examination is usually performed to assess any underlying bone involvement and to exclude other pathologies, although significant radiographic changes are uncommon. Histopathological examination remains the gold standard for diagnosis and typically reveals dense collagenized fibrous connective tissue containing numerous fibroblasts, varying degrees of chronic inflammatory cell infiltration, and an overlying stratified squamous epithelium that may be hyperplastic or ulcerated. Unlike peripheral giant cell granuloma, multinucleated giant cells are absent, and unlike peripheral ossifying fibroma, there is no evidence of calcified material or bone formation.
The treatment of choice for fibrous epulis is complete surgical excision of the lesion along with elimination of all local irritational factors. Thorough scaling and root planing should be performed, and any contributing factors such as defective restorations or traumatic occlusal forces should be addressed. The prognosis is excellent, with recurrence being uncommon when the lesion is completely removed and local irritants are eliminated.

Our Patient
The lesion was surgically excised under local anesthesia, and the specimen was submitted for histopathological examination. Scaling and root planing were performed to eliminate local irritants. The patient was instructed regarding his oral hygiene and follow-up visits.