

## *From Our Office to Yours...*

*Acute periodontal problems require accurate diagnoses to ensure that appropriate emergency care can be provided to relieve the patient's symptoms.*

*Diagnosis and management of these emergencies is often complicated because many of these conditions present with similar symptoms. Consequently, differential diagnosis and appropriate treatment planning is essential.*

*In this current issue of **The PerioDontaLetter**, we address the most common emergency periodontal conditions faced by clinicians along with their diagnosis and treatment.*

*As always, we welcome your comments and suggestions.*

## Emergency Periodontal Procedures

The two most common acute periodontal problems are periodontal abscess and acute necrotizing ulcerative gingivitis (ANUG). Other acute periodontal problems include perio-endo lesions, vertical root fracture and cracked tooth syndrome.

Because these acute conditions share similar symptoms, a differen-

tial diagnosis is essential to the development of appropriate treatment regimens.

Obtaining accurate differential diagnosis includes tests for thermal sensitivity, analysis of pain on percussion, radiographs, probing and pain on mastication. Adjacent teeth should be similarly tested and used as a control.



*Figure 1. A periodontal abscess with swollen and cyanotic tissue is apparent facial to the upper right lateral incisor. (See Figure 2 on Page 2.)*

A periodontal abscess is often a sub-acute manifestation of preexisting chronic periodontal disease or localized impaction of a foreign object such as a popcorn hull.

The most common symptom is pain localized to the area. Other signs may include swelling, color changes, mobility, extrusion, purulence, sinus tract, lymphadenopathy and fever.

A thorough clinical examination and assessment of symptoms will likely narrow the choices to a single diagnosis. Radiographs are useful in confirming the diagnosis. Findings may reveal the presence of a radiolucent area along the lateral aspect of an abscessed tooth. However, radiographic findings are commonly not observed in acute conditions.

Patients presenting with emergency conditions should be treated immediately to relieve pain and resolve the infection. Delaying attention may contribute to irreversible periodontal attachment loss. After establishing drainage, root planing to remove

plaque and calculus deposits from the root surfaces will usually complete the process.

Systemic antibiotics are indicated if systemic symptoms are present or if the patient is medically compromised. Many clinicians advise the use of a chlorhexidine mouthwash. Follow-up appointments should be scheduled to monitor the resolution of the abscess and the relief of painful symptoms. Definitive treatment of remaining problem defects should then be planned.

If the root surface has been difficult due to the presence of anatomical features such as furcations or deep grooves, periodontal surgery may be required in order to minimize the risk of recurrence of the abscess.

Although an acute periodontal abscess often results in considerable loss of bone, such lesions offer an excellent potential for repair after proper treatment. Treatment of acutely affected teeth should be undertaken even though there appears to be little

remaining periodontal support because remarkable regeneration of lost periodontal attachment is frequently possible.

## Acute Necrotizing Ulcerative Gingivitis

The clinical features of acute necrotizing ulcerative gingivitis (ANUG) characteristically include necrosis of the crest of the marginal gingival tissues and the interdental papillae. Destruction of tissue is rapid and is associated with spontaneous bleeding, breath malodor, and pain. ANUG is usually self-limiting, but left untreated, it may spread laterally and apically to involve the entire gingival complex.

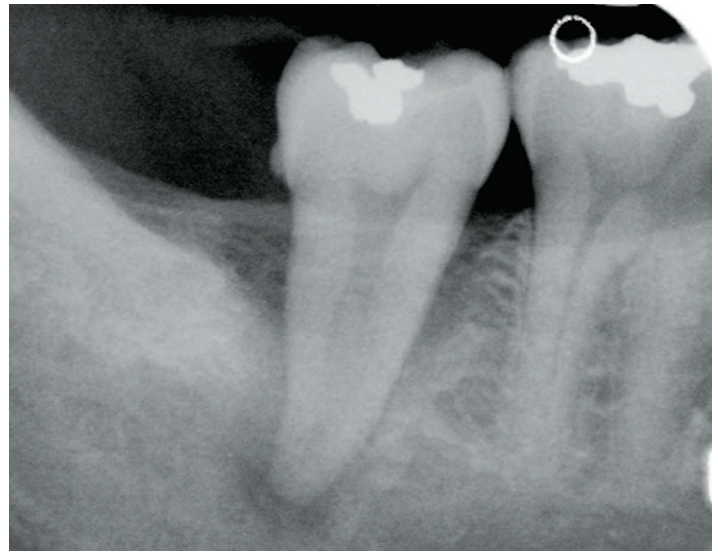
ANUG is characterized by punched-out and cratered depressions in the interdental papillae. The surfaces of the lesions are often covered with a gray or grayish-yellow pseudomembrane. Patients often report having a "metallic" taste. ANUG is generally accompanied by systemic symptoms including high fever, malaise and lymphadenopathy.

While the diagnosis of ANUG is usually straightforward, other oral mucosal lesions may be confused with ANUG such as primary herpetic gingivostomatitis and other erosive gingival lesions. ANUG is occasionally indicative of an immuno-compromised system.

Due to the pain associated with ANUG, emergency treatment can sometimes pose a challenge. Management of infection and removal of local factors may be achieved with local anesthesia and gentle debridement of the affected tissues with ultrasonic and hand instruments. The patient should be instructed to use a chlorhexidine mouthwash, and the adjunctive use of antibiotics (Metronidazole 500mg or Penicillin VK bid for 5 days).



*Figure 2. Flap reflection reveals subgingival calculus as the primary etiologic agent of the abscess.*



**Figures 3 and 4. Mesial distal cracks on the lower right second molar and the radiographic appearance of bone loss on the proximal and apical areas are indicative of a perio-endo lesion.**

The patient's status should be checked after one week, and additional local debridement and oral hygiene instructions should be provided. Depending on the amount of soft tissue damage caused by the infection, gingivoplasty may be required to recontour the gingival defects.

## Periodontic-Endodontic Lesions

Combined perio-endo lesions occur when pulpal necrosis and/or periapical lesions are associated with periodontal pockets. Such lesions generally present with the symptoms of both types of pathology.

Pain is the most common presenting complaint of patients with combined lesions. Pulp testing and careful evaluation of apical radiographic changes are necessary to establish contributory pulpal pathology. Periodontal probing is essential to confirm the presence and morphology of associated periodontal pockets and if there is communication with the apical lesion.

The long-term prognosis for a tooth with a combined lesion is closely related to the extent and configuration of the periodontal attachment loss. With advanced attachment loss, even an optimal endodontic result may not be sufficient to retain the tooth in comfort and function.

Once the decision to retain the tooth is made, appropriate endodontic treatment should be instituted before beginning definitive management of the periodontal lesion. Once successful endodontic treatment has been accomplished, residual periodontal pockets can be more predictably treated.

## Vertical Root Fracture

Vertical root fractures are usually characterized by a fracture line extending through the long axis of the root.

Early diagnosis based on both clinical and radiographic findings is imperative, as delay may result in rapid loss of supporting bone and possible tooth loss. However, the clinical findings are varied and non-

specific, often masquerading as a periodontal abscess. Discomfort, pain on biting or chewing, noticeable gingival swelling, presence of a sinus tract or a deep narrow isolated pocket along the surface of the tooth all contribute to making a longitudinal fracture diagnosis.

Studies suggest that thin, halo-like radicular radiolucencies are indicative of vertical root fracture. Surgical exposure and direct visual examination are most often required to confirm the diagnosis of root fracture.

Vertically-fractured teeth almost always are hopeless.

The most predictable treatment after confirming the diagnosis of root fracture is extraction and tooth replacement with an implant therapy or a fixed bridge.

## Cracked Tooth Syndrome

Pain on biting, sensitivity to heat and cold, unexplained pain (usually leakage of sugar into tooth crack), are common findings in cracked tooth syndrome.

The presence of a cracked tooth may sometimes be verified when the tooth is prepared for restoration, exposing a fracture within the prepared tooth structure.

The treatment of cracked teeth depends on the severity, location, and extent of the crack or fracture. The majority of teeth with coronal cracks can be treated by placement of a crown on the tooth which may contain the fracture and prevent further progression.

In rare instances, endodontic treatment, possibly some crown lengthening, and a full coverage restoration

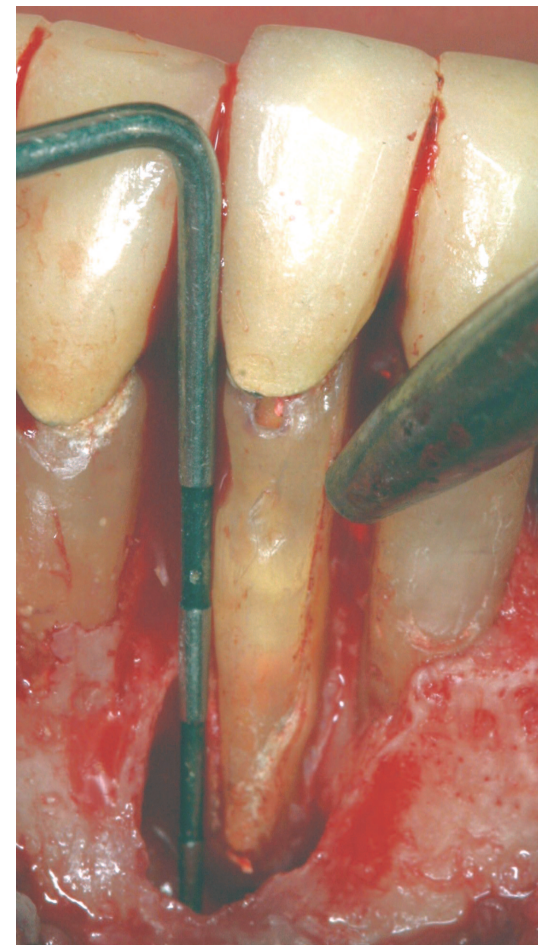
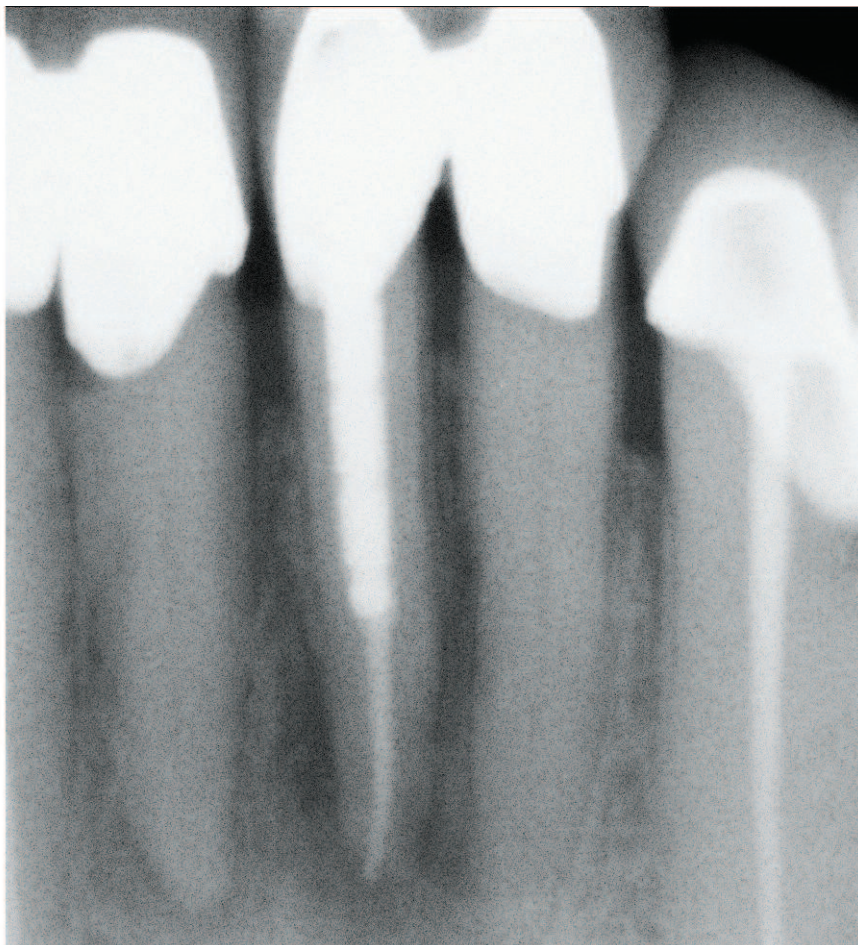
may be used to retain a portion of the crown of the tooth.

If a portion of the tooth crown has broken off subgingivally, crown lengthening may be required before a full coverage restoration can be placed. The objective of crown lengthening, in this context, is to expose sufficient sound tooth structure to prevent the crown margins from extending too far underneath the gingival margin and violating the biologic width.

In all cases of cracked teeth, the patient should be informed that the prognosis is guarded.

In all of these periodontal emergencies, careful follow-up of the affected areas is important to prevent recurrent problems, which can lead to further soft and/or hard tissue destruction.

We look forward to working with you in managing the acute conditions your patients present with to ensure their long-term dental health.



*Figure 5. Endodontic treatment and a post restoration with a periradicular radiolucency raises a strong suspicion of root fracture.*

*Figure 6. Flap reflection confirms a longitudinal root fracture and a hopeless prognosis.*