



I28A



I28B

I28A, B Rotated maxillary premolars in a dog.

As a result of the malpositioning, teeth may be slightly infraerupted or crowded. Infraeruption will result in a pseudopocket on the affected tooth. The combination of crowding and infraeruption often contributes to the early onset of significant periodontal disease in the area². Oftentimes, periodontal disease may be the only untoward effect caused by the malocclusion. However, if occlusal trauma is present, it can result in severe palatine damage (potentially causing an ONE) or periodontal damage to the opposing tooth^{5,14}. An additional problem that may occur secondary to the occlusal trauma is traumatic pulpitis of the opposing tooth⁵, which may result in endodontic disease and abscessation¹⁷.

There are two common class I malocclusions (base narrow mandibular canines and mesiooccluded maxillary canines) that often have significant traumatic ramifications. These are discussed in detail in their own sections.

DIFFERENTIAL DIAGNOSES

- Any other cause of tooth movement (i.e. trauma, cyst, periodontal disease).

DIAGNOSTIC TESTS

Visual examination is diagnostic. However, dental radiographs should be exposed prior to definitive therapy.

MANAGEMENT

Depending on the presentation, class I malocclusions may be cosmetic only, or may cause periodontal or traumatic disease. In cases of traumatic or periodontal disease, therapy is mandated. In strictly cosmetic cases, treatment is not recommended. There are several options for treatment of maloccluded teeth, which include: orthodontic movement of the tooth, coronal amputation and vital pulp therapy, or extraction(s)⁴.

Orthodontic therapy should not be performed in patients destined for a show career, or for cosmetic purposes only. This type of therapy should be reserved for cases of traumatic malocclusions where extraction or coronal amputation is either impractical or declined by the client. Orthodontic therapy involves the use of an appliance, which can be created in-house or by an orthodontic lab^{2,4}. There are numerous types of appliances available depending on the case. Orthodontic correction should only be performed by an experienced clinician and with a very committed owner. Methods of correction which are more expedient and reliable include either extraction, or coronal amputation and vital pulp therapy of the offending tooth or teeth^{2,4,5}.

KEY POINTS

- Class I malocclusions are typically considered nongenetic; however, there are conditions that appear to have a genetic predisposition.
- Secondary crowding and infraeruption can hasten the onset of periodontal disease.
- Class I malocclusions may create orthodontic problems and secondary lip/tooth/gingiva trauma.
- Orthodontic therapy for this condition may be effective, but is complicated and extensive.

MANAGEMENT

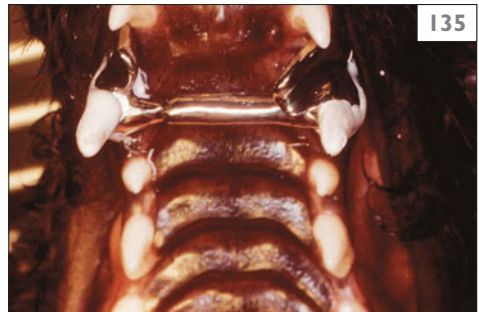
There are numerous options for treatment of base narrow canines. These can be separated into two distinct categories: orthodontic movement of the tooth or removal of the source of trauma.

If the malocclusion is minor and diagnosed early, a wedge of the maxillary gingiva can be removed to guide the tooth into the correct position⁴. In addition, composite crown extensions can be added to the canines to encourage buccal movement. Ball therapy has been used with success by some dentists, which is inexpensive and noninvasive²¹. Finally, surgical movement of the tooth has proven successful in some cases²².

Orthodontic therapy has an excellent success rate for this condition. The most common means of achieving the desired movement is via an incline plane². This can be formed in the patient's mouth with dental acrylics or by an orthodontic lab using stone models which are created by the veterinarian (135)⁴. If the owner desires a one step therapy, removal of the source of trauma can be achieved in several different ways. It is best achieved via coronal amputation and vital pulp therapy⁴. When performed skillfully, this procedure has an excellent success rate but the client must be made aware of the need for follow-up radiographs^{4,23}. Alternatively, the tooth may be extracted, but due to the size of the tooth and the importance of the mandibular canines in tongue retention and esthetics, this is generally not the treatment of choice².

KEY POINTS

- Patients will often show no clinical signs, but they are in pain.
- Base narrow canines can cause severe periodontal disease or ONF.
- This is a very treatable problem.
- Many treatment options exist depending on age of patient, presentation, and owner's goals.



135 Laboratory fabricated cast metal incline plane for a base narrow condition in a dog.

CLINICAL FEATURES

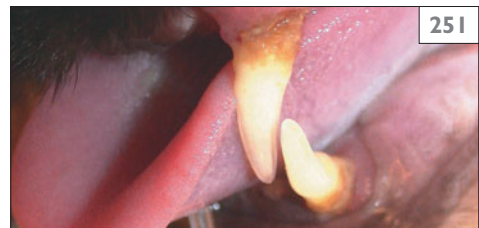
In addition to gingivitis, gingival bleeding, and halitosis, the oral examination findings may include varying amounts of plaque and calculus accumulation, gingival recession (247, 248), furcation exposure (249), mobile teeth (250–255), missing teeth (256), and oral ulcerations (257, 258) (254-258 over page) .



250 Cat with sudden onset of oral 'discomfort' and inability to close his mouth. Note the left maxillary canine is deviated towards the midline.



247 Localized periodontitis, severe gingival recession (attachment loss).



251 Left upper canine of patient in 250, gingival inflammation, calculus accumulation, and bulge over the tooth root, mobile tooth (mesial to lower canine instead of in the normal distal position).



248 Generalized, chronic periodontitis, gingival recession, furcation exposure.



249 Generalized, severe periodontitis post scaling, severe attachment loss (gingival recession, furcation exposure).



252 Dental radiograph of the patient in 250 revealing root and bone resorption and alveolar bone expansion secondary to chronic periodontitis.



253 Dental radiograph of the patient in 250 revealing root resorption and alveolar bone expansion secondary to chronic periodontitis.