



Toothy Thomson Handout

Feline Malocclusion Class 1: Palatoverted Maxillary Premolars

Class 1 malocclusions are defined as a normal length of the maxilla and mandible (upper and lower jaw) in relation to each other, with one or more displaced teeth.

The most common malocclusion in cats is palatoverted maxillary fourth premolars; with or without elongated crowns.



Class 1 malocclusion in 3 cats, with mild (top), moderate (center) and severe (bottom) effect on the mandibular gingiva

Palatoverted simply means that a tooth is “tipped” towards the palate. In cats it usually affects their largest premolar on the upper jaw; the maxillary fourth premolar. It can sometimes also affect the third maxillary premolar.

Often, the issue is bilateral; on both sides, but not always.



Side view of a cat's mouth with no malocclusion. The maxillary third (red) and fourth (blue) premolars (blue) and the first mandibular molar (green) are seen.

Malocclusions are congenital, meaning your cat is born that way: it does not appear over time and the teeth don't shift as the cat gets older.

However, the consequences of the malocclusion will worsen over time which is why diagnosing and treating these malocclusions when the cat is young is important.

When the premolars are palatoverted it reduces or eliminates the space between the tip of the maxillary premolar tooth and the gingiva on the

mandible beside the mandibular molar. The contact of the tooth on the gingiva is a trauma and that trauma slowly causes more and more damage to the tissues around the lower molar.



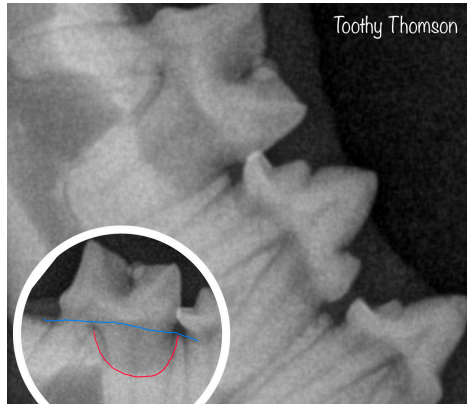
This is the same patient with their mouth closed (left) and slightly open (right) with a class 1 malocclusion

When the malocclusion is caught and treated early, the mandibular trauma is removed and there are no more consequences of the malocclusion.

When it is unnoticed or left untreated the traumatic contact leads to oral pain, inflammation (gingivitis), gingival recession (loss of the gingival tissue), bone loss and/or pyogenic granulomas. Cats are very good at hiding pain, you may not notice how this is affecting them. The trauma over time compromises the health of the mandibular molars and extraction may be necessary.



These are two examples of consequences of untreated class 1 malocclusions. The patient on the left has severe gingival recession along his mandibular first molar and the patient on the right has a pyogenic granuloma (confirmed with histopathology)



This radiograph of the right mandible of a cat shows the typical bone loss seen in cats with class 1 malocclusions. The overlay shows the bone loss in red on the buccal side and the normal bone height in blue on the lingual side.

There are two ways to treat a class 1 malocclusion in felines. The first is to perform a crown reduction and odontoplasty and the second is to extract the palatoverted teeth.

A crown reduction and odontoplasty requires a veterinary dentist. This is where they will slightly shorten and recontour the teeth so they no longer contact the mandible. Following an odontoplasty, the teeth should be radiographed annually to ensure they remain vital.



This is a feline patient's right maxillary fourth premolar before (left) and after (right) a crown reduction and odontoplasty. The patient had their right mandibular molar extracted due to severe attachment loss

The second option is to extract the maxillary palatoverted teeth. While this is more invasive, it does not require any follow-up other than ensuring the incisions are healed.

Extracting the mandibular teeth that are being contacted/traumatized without shortening or extracting the palatoverted teeth is not recommended. Left untreated maxillary teeth will still be contacting the gingiva on the mandible. It may also prevent the healing of a mandibular incision and will continue to be a source of discomfort.

At the time of treatment, the mandibular teeth should be examined both visually and with a radiograph; if their periodontal health is compromised, they should be treated.



This is a feline patient during a crown reduction. Currently, in the picture, their right maxillary third premolar is being shortened, and the maxillary fourth premolar behind it was also shortened during the procedure

Catching class 1 malocclusion in cats early is the best option for your pet. Oral exams should be part of every vet visit, and if a malocclusion is found it needs to be treated.