



RECURRENT FACIAL SWELLING

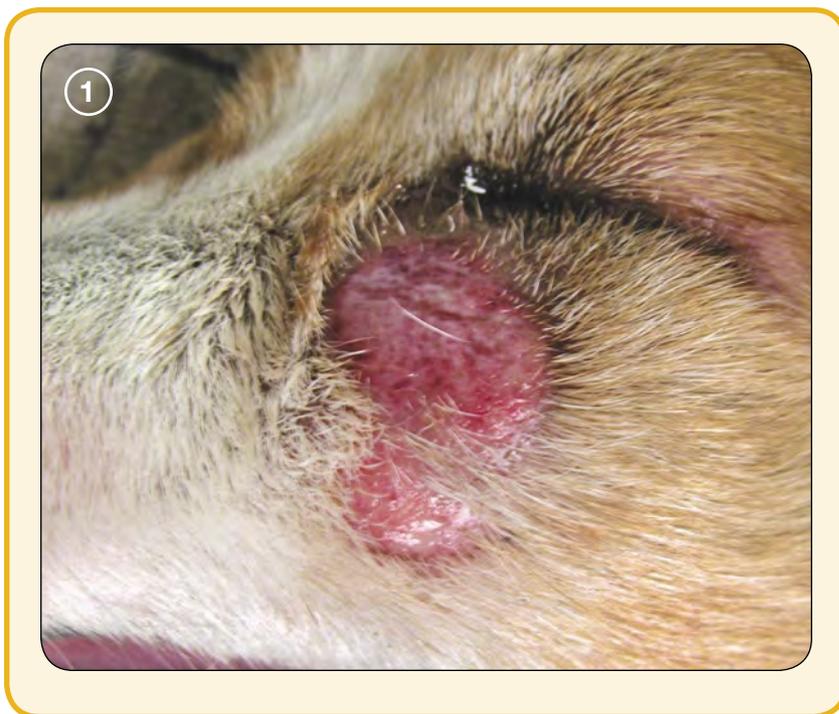
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QUESTIONS

Figure 1 shows a dog with facial swelling under the left eye. This patient had similar swelling in the same area 6 months previously that responded to extraction of the maxillary fourth premolar (208).

1. What is your tentative diagnosis?
2. What is your recommendation to the client based on the information presented?

Turn to page 50 for the answers to the questions and further information about the case.



American Animal Hospital Association Approves Mandatory Dental Standard

In a move endorsed by the American Veterinary Dental College, the American Animal Hospital Association (AAHA) announced it will require accredited veterinary hospitals to anesthetize and intubate patients undergoing any dental procedures, including dental cleanings.

The 2013 AAHA Dental Care Guidelines for Dogs and Cats state that general anesthesia with intubation is necessary to properly assess and treat the companion animal dental patient. Proper dental care is a key component of good health for companion animals. General anesthesia with intubation is necessary to remove plaque and tartar from the entire tooth, at least 60% of which is under the gum line.

General anesthesia with intubation also facilitates pain-free probing of each tooth, and provides the required immobilization necessary to take intraoral dental films. Without anesthesia, a veterinary professional can only partially clean the exposed crown, which is more cosmetic than therapeutic.

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ANSWERS

1. There are several causes for a maxillary facial swelling, including:

- Insect envenomation
- Neoplasia
- Abscesses.

Facial abscesses may be caused by penetrating wounds, foreign bodies, or abscessed teeth.

2. Diagnostic and treatment options for facial abscesses include:

- Empirical therapy with antibiotics and pain medications +/- anti-inflammatories
- Aspiration and cytology
- Exploration and biopsy under anesthesia
- Extraction of suspect tooth/teeth
- Dental radiographs under anesthesia
- Advanced imaging, such as CT or MRI, may be needed in some cases, especially if neoplasia is suspected, but only after dental radiographs have been performed first.

Empirical therapy is certainly an option, but not ideal, especially for recurrent conditions. **Aspiration and cytology** is also a viable option and, in this case, cytology would have revealed septic inflammation. **Exploration, biopsy, and/or extraction under anesthesia** are commonly pursued in cases such as this; however, **dental radiographs** may influence the treatment plan and its overall success.

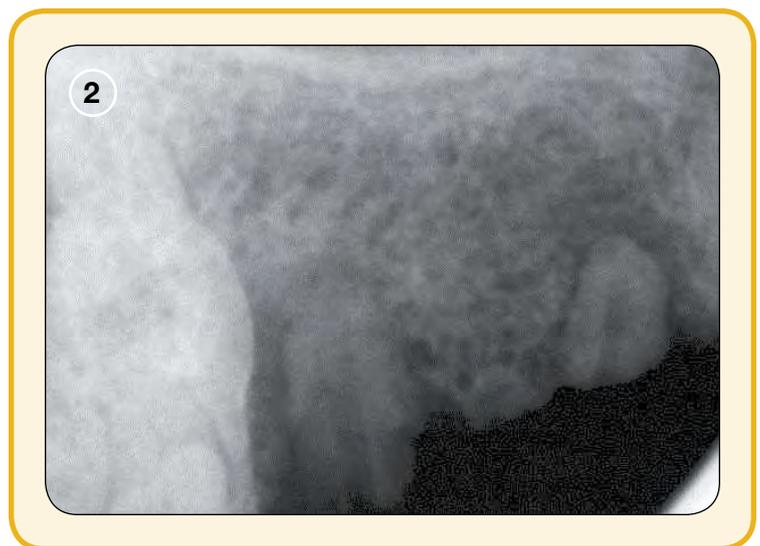
A thorough dental examination and radiographs are always helpful and, in my opinion, indicated in any case of facial swelling regardless of dental tissue appearance. This is because:

- Normal appearing teeth can be infected
- Retained tooth roots may be present from a previous injury or extraction attempt
- Neoplasia may be identified.

QUESTIONS

Figure 2 is a dental radiograph focused on the area where the maxillary fourth premolar was previously extracted.

1. How does this additional information provided by the radiograph affect your chosen diagnosis?
2. Based on the radiographic findings, what are your treatment recommendations?



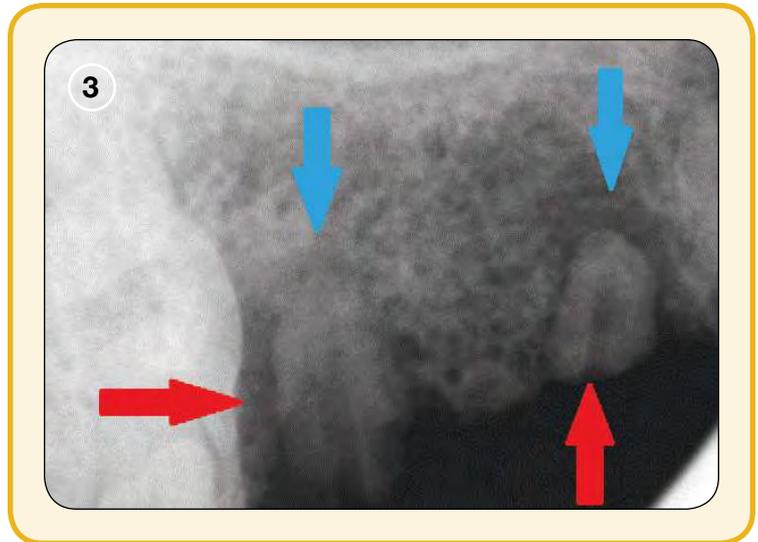
Turn to page 51 for the answers to the questions and case discussion.

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This radiograph (**Figures 2 and 3**) reveals retained roots from the extraction attempt of the maxillary fourth premolar (**red arrows**). Note the significant periapical rarefaction to the roots, which is indicative of endodontic infection (**blue arrows**).

ANSWERS

1. The dental radiograph strongly supports a diagnosis of facial swelling caused by retained and infected roots from the previous extraction attempt.
2. These roots must be surgically extracted and the alveolus thoroughly debrided in order to remove the infection. Additionally, a sample of the area should be submitted for histopathology. Extraction of retained roots can be quite challenging as the normal landmarks are absent and hemorrhage will further complicate the extraction effort. Referral to a veterinary dental specialist for this procedure should be considered.



CASE DISCUSSION

Endodontic abscesses are created by an infected root canal system, not directly from the fractured crown of the tooth. Therefore, a carnassial abscess can develop even if the crown is not present.

Extraction Complications

Retained roots are a very common complication associated with dental extractions. Dental radiographs should always be exposed post extraction to document complete removal of all roots.

A recent study (accepted for publication in *JAAHA*) reported that 92% of dogs and cats with extracted carnassial teeth have retained roots. Unless a postoperative radiograph was exposed, do not assume that a carnassial tooth was completely extracted.

Prevalence of Retained Roots

I believe the high prevalence of retained roots in carnassial teeth involves several factors:

1. These are large teeth that are usually periodontally healthy, which means the roots are more likely to fracture during extraction attempts.
2. The generalized lack of hands-on training in den-

tistry within the veterinary field.

3. Dental radiology is not yet a standard of care in veterinary practices (although it is progressing to this status).

Evidence of Infection

This particular study also found that 90% of retained roots had radiographic evidence of infection. A retained root tip may become infected or, at least, act as a foreign body, creating significant inflammation.

While there are rarely any clinical signs observed with this complication, occasionally retained roots create an abscess, as demonstrated in this clinical case, which results in significant discomfort for the patient.

In Summary

Facial swellings (especially recurrent ones) are often of dental origin, and typically involve the maxillary fourth premolars. However, it is critical to note that a complicated crown fracture is NOT necessarily the cause of infection. Furthermore, multiple teeth could be infected. In cases of facial swelling, it is crucial to take full-mouth radiographs or, minimally, image the entire arcade involved and treat appropriately. ■



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