Clinical Commentary

Dentigerous cysts: Congenital anomaly of many names

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Dentigerous cysts, known to laymen as ear teeth, are also known by a number of varying descriptive terms utilised over quite a long period, since the syndrome was first described (DeBowes and Gaughan 1998). In this issue, Easley et al. (2010) have reviewed the nomenclature aspect of this anomaly. Regardless of whether one calls the anomaly a dentigerous cyst, heterotopic polydontia or one of the other descriptors, we are all probably discussing the same abnormality, even though multiple clinical presentations are possible. This report very thoroughly describes an unusual case of a young horse with a complete adult dental element combined with a deciduous cap for a molar-like ectopic tooth within a cystic capsule.

Several consistent clinical observations occur with dentigerous cysts and many variants can accompany the usual clinical signs. Most typically, an abnormal mass lesion can be noted somewhere on the dorsal or lateral aspects of an affected horse’s head. The most common site is in rather close proximity to one of the ears. The mass can be as firm as bone or dental tissue but can also be soft and fluctuant, the difference seemingly associated with the fluid-filled cyst typically associated with deep seated dental elements. The difference in palpation may also be associated with the size or absence of a draining fistula. Most commonly, an affected horse’s owner will seek veterinary attention for abnormal fluid appearing to drain from or near one of the ears. The fluid can be clear to cloudy and is often mucoid in texture. The most common site for the exit portal for these draining tracts is at the base of the cranial pinna, but the location can be quite varied between individual horses. Removing hair that is often matted with exudate can help locate the draining tract exit portal. Palpation of the mass and associated draining tract does not usually generate a painful response, but may express an additional volume of the mucoid, cystic fluid.

When the described clinical signs are present, diagnosis of dentigerous cyst is reasonable. However, there is a wide variation of cyst contents that can fall under this diagnostic categorisation. Therefore, it is very important to appropriately image an affected horse’s head to best understand what is associated with the visible mass and draining tract. Survey radiographs may be all that is necessary to appropriately understand what tissues comprise a dentigerous cyst. Radiographic projections that are tangential to the mass are typically required for best imaging. Most commonly, the potential list of tissues include dental elements with enamel components, some variant of a dental alveolus or bony association to the cranium, a cystic epithelial lining, a fibrous capsule and exiting tract with the fluid contents of the cystic structure. Further understanding of the location and extent of a dentigerous cyst can be obtained with computed tomography (CT). Performing a CT scan is suggested when the technology is available and when clinical and radiographic assessments indicate the extent of a cyst would make surgical complications more likely. A simpler technique for further defining the extent and dimensions of a dentigerous cyst is to perform a positive contrast radiographic study; introducing radiopaque dye into the exit portal of the draining tract and filling with a volume that will distend and define the cyst.

Dentigerous cysts are benign structures and the possibility of a clinical syndrome that worsens over time is not likely. The most likely complication with chronic presence of a dentigerous cyst is ascending sepsis, although this is not a common observation. Decisions for surgical treatment are typically driven by the owner’s desire for a more cosmetic head appearance and to be rid of the chronic discharge associated with the draining tract. Medical management of the draining tracts has been routinely disappointing. The goal of surgical treatment is total resection of the dental elements, the cyst capsule and epithelial lining and potentially to address any bone abnormalities. Incomplete resection of the complex tissues of a dentigerous cyst can lead to recurrence of clinical signs.

Perioperative antibiotics are recommended due to the potential for bacterial presence within the exiting tract. Nonsteroidal anti-inflammatory drugs are suggested to assist in controlling post surgical inflammation. General anaesthesia is recommended to reduce the possibilities of
incomplete resection. Aseptic preparation of the predetermined surgical site and appropriate draping are required.

A circumferential incision around the exit portal of the draining tract can be extended the length of the tract and then become elliptical around the main body of the cyst. A malleable stainless steel probe placed in the draining tract can maintain palpability of the tract. Vital staining of the tract and cyst with new methylene blue can also guide appropriate tissue resection. Careful dissection, using sharp and blunt techniques can assure total resection of abnormal tissues. However, it may be difficult to resect all associated tissues en bloc. Commonly, the soft tissue components of the cyst and tract can be readily dissected and removed. The dental and bony elements will probably require more effort. Careful elevation and resection are required to avoid damage/traverse of the bony cranium. A curette or elevator can often be used successfully to separate the dental elements from the cranial bone. If a deep seated, aberrant dental alveolus is present, some amount of bone resection to free the dental elements is required. Care should be exercised in this resection to avoid cranial trauma. A motorised burr may be a superior instrument choice over a chisel or osteotome and mallet. Excessive trauma is less likely, and more controlled bone resection is possible with a powered burr. Careful attention to haemostasis is an important aspect of the surgical procedure, as this will allow simpler closure and reduces post operative complications. Closure typically requires complete, good apposition of subcutaneous tissues and skin. Although not required, a simple compression bandage can also help reduce residual tissue space and post operative swelling.

Two weeks of rest is recommended after surgery. Skin sutures can be removed 2 weeks post operatively and tack can usually be used without concern for wound interference. Any wound dehiscence or other complications from surgery are expected to occur in such a 2 week period. If recurrence of a cyst occurs, clinical signs may appear in weeks to months of time. Careful attention to tissue handling can usually avoid this complication.

Dentigerous cysts are usually disconcerting to the owner of an affected horse due to the exudative discharge and possible disfigurement of the head. However, surgical treatment is usually successful and recurrence minimal when complete excision is accomplished.

References