

Ectopic mandibular third molar: Extraction by extraoral access

Terceiro molar inferior ectópico: exodontia por acesso extra-bucal

Abstract

Purpose: The unerupted third molar mandibular teeth can be associated to dentigerous cysts. These cysts can dislocate the unerupted tooth for uncommon positions. This study reports a case of ectopic third molar, located in the mandibular angle, associated with a cystic lesion, which was removed by extra-oral access.

Case description: Patient with 28 years old, leucoderma, with complains about increase of volume in jaw, region of mandibular angle. The imagenologic exam evidenced radiolucent image, delimited, with involved unerupted tooth located in the mandibular rami area. The removal of the tooth was made under general anesthesia and submandibular extraoral access. The microscopic analysis revealed fragments of fibrous conjunctive tissue of capsular conformation with hemorrhage and chronic intense infiltrated inflammatory nonspecific and focuses widespread areas, besides epithelium odontogenic covering the conjunctive surface, compatible characteristics with cyst dentigerous infected.

Conclusion: The position of the tooth and the presence and extension of the lesion were decisive in the choice of the extraoral access, that it allowed good visualization of the surgical place and effectiveness enucleation of the cystic lesion.

Key words: Oral surgery; dentigerous cyst; third molar; unerupted tooth

Resumo

Objetivo: Os terceiros molares inferiores inclusos podem estar associados a cistos dentígeros. Estes cistos podem deslocar o dente para posições incomuns. Este trabalho apresenta um caso clínico de terceiro molar inferior ectópico, cuja exodontia foi realizada por acesso extra-bucal.

Descrição do caso: Paciente com 28 anos de idade, leucoderma, com queixa de aumento de volume em mandíbula, região de ângulo mandibular. O exame imagenológico evidenciou imagem radiolúcida, bem delimitada, com dente incluso envolvido e deslocado para a base da mandíbula na região de ramo. A remoção do dente foi feita sob anestesia geral e acesso extra-bucal submandibular. O cisto foi enucleado e a análise microscópica revelou fragmentos de tecido conjuntivo fibroso de conformação capsular com extensas áreas de intenso infiltrado inflamatório crônico inespecífico e focos de reagudecimento e hemorragia, além de epitélio odontogênico revestindo a superfície conjuntiva, características compatíveis com cisto dentígero infectado.

Conclusão: A posição do dente e a presença e extensão da lesão foram determinantes na escolha do acesso extra-bucal, que permitiu boa visualização do campo cirúrgico e enucleação da lesão cística com maior eficácia.

Palavras-chave: Cirurgia bucal; cisto dentígero; terceiro molar; dente não erupcionado

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Introduction

Third molars may be associated with a cystic lesion and an ectopic position in the mandible (1,2). The ectopic inclusions are rare conditions, I occurs with y of approximately 1% of the general population. These teeth usually remain asymptomatic, however, when the tooth is associated with a cyst, patients may present significant morbidity. The pressure exerted by the cyst can cause the displacement of the tooth to the regions: condylar, coronoid, ramus and angle of the mandible, complicating its removal (3).

Intra-oral access incisions in the retromolar and relaxing incisions on the buccal aspect of the gum and buccal mucosa of the mandible is a surgical routine field and provides adequate surgical removal of third molars. When the tooth is positioned deeper in the ramus, medial and inferior to the mandibular nerve, the intra-oral approach does not favor surgery, preventing and restricting viewing the surgical field. Ectopic these positions, the extra-oral access is indicated (Fig. 1).

We present a case of ectopic third molar, located in the mandibular angle, associated with a cystic lesion, which was removed by extra-oral access, a surgical approach is not routine. The specifics of this case are described and discussed.

Case Description

Subject: A 28 years old, male, Caucasian patient, complaining of swelling in the region of the left third molar mandibular. The intra-oral examination did not reveal the presence of this element in the arcade. The buccal mucosa presented with characteristics of normal consistency and color and absence of symptoms.

Panoramic radiography allowed to observe the presence of the third molar displaced to the mandibular angle associated with a radiolucent lesion (Fig. 2) and bounded around the crown of the tooth, extending to the alveolar ridge, near the distal of the second molar. This image is an extension of the cystic capsule and was confirmed during surgery for its removal. In our opinion it was probably the displacement of the base of the tooth to the jaw cyst growth.

In helical CT, we observed third molar associated with intraosseous radiolucent lesion (Fig. 3), with expansion and perforation of the cortical bone and mandibular canal external to internal cortical moved above the tooth involved, without being associated with the injury.

The differential diagnosis was keratocystic odontogenic tumor, dentigerous cyst and cystic ameloblastoma. The clinical diagnosis was dentigerous cyst associated with third molar.

The treatment consisted of the removal of the tooth and enucleation of the lesion, for extra-oral access, under general anesthesia. The incision was in the region of sub-mandibular angle with five centimeters, followed by dilatation of the tissues (subcutaneous tissue, platysma muscle, masseter muscle and periosteum) (Fig. 4), osteotomy at the site of perforation of cortical bone, to expand access and fully

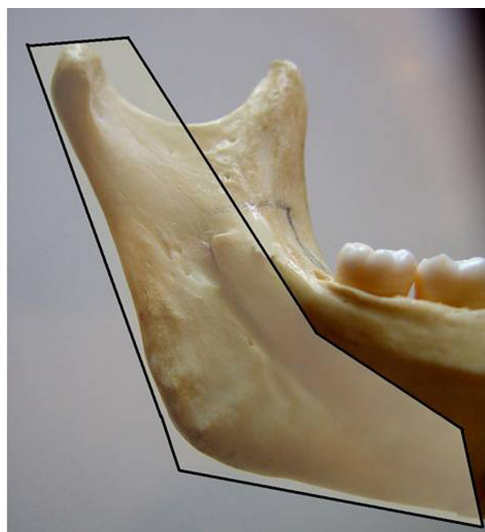


Fig. 1. The jaw areas where headgear access is recommended.



Fig. 2. Panoramic radiograph – tooth 38 in the mandibular angle region associated with a radiolucent lesion surrounded the crown.

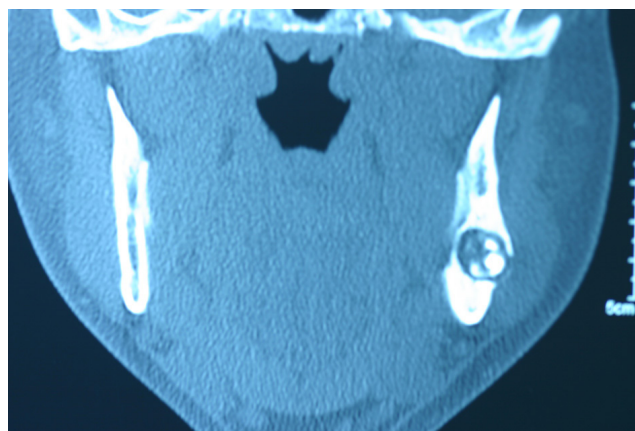


Fig. 3. Coronal cut scan, window bone tissue – expansion and perforation of the labial cortical bone, tooth 38 without regard to the inferior alveolar nerve.

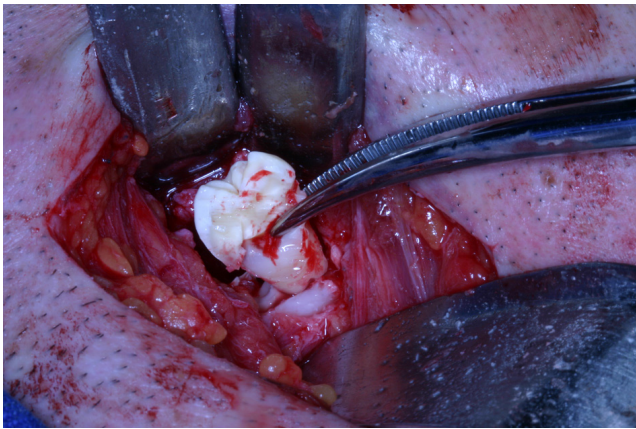


Fig. 4. Extra-oral submandibular access – skin divulsion, subcutaneous tissues and masseter. Extraction by isolating tooth 38 associated with the lesion enucleation.

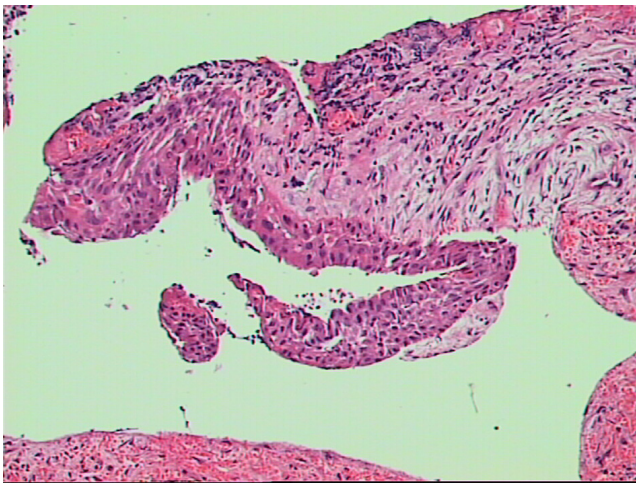


Fig. 5. Histologic aspect. HE 40X ME. Cystic epithelium and loose connective tissue. infected dentigerous.

expose the crown, odontosection, tooth removal, enucleation of the lesion, treatment of bone and suture shop for plans, and the skin sutured with 5-0 nylon (Ethicon 5-0 – Johnson & Johnson Brazil's Industry and Trade Products Health Care Ltd.) intra-dermal.

The medication used was a light bulb cephalosporin (1 g neutral keflin – antibiotics do Brazil Ltda) EV induction in another ampoule of ketoprofen (100mg Profenid – sanofi-aventis) EV. After hospital discharge follow anti-inflammatory medication (50 mg Profenid – rhodia pharma ltd) and analgesic (paracetamol 750 mg – medley).

The fragments, along with the involved tooth were placed in 10% formalin and sent for pathological anatomicopathological in oral pathology department of dental school Araçatuba – FOA – UNESP. The anatomicopathological diagnosis showed fragments of fibrous connective tissue forming capsular with extensive areas of chronic inflammatory infiltrate and foci of hemorrhage

and reagudement, and odontogenic epithelium lining the surface of the conjunctiva (Fig. 5), featuring dentigerous infected. The patient had no postoperative complications, the sutures were removed after seven days and is under follow-up without evidence of recurrence.

Discussion

The dentigerous cyst is the most common developmental odontogenic type of maxillary (1,3-5), it comes after the crown of the tooth is fully formed by the accumulation of fluid between the reduced enamel epithelium and the crown tooth (3). According to Saravana & Subhashraj (6) mandibular third molars are the most commonly impacted teeth in the oral cavity and are usually involved in the formation of dentigerous cysts, which was confirmed in their studies, where they found 77% of cases of dentigerous cyst associated with impacted mandibular third molar. They also observed a higher incidence on the right side of the jaw, in the age group between 20-24 years mostly asymptomatic with prevalence twice more in men than in women. The prevalence in young band is justified because of the prophylactic removal of third molars, the teeth that are most involved in this injury in young age, leaving few cases of dentigerous cysts to be diagnosed at an older age (7). The stinger male and Caucasian, as the lower prevalence in females is justified by the lower incidence of impacted teeth in gender. The incidence is 75% in the mandible and maxilla in 25%, being more frequent in the lower third molars, followed by maxillary canines, third molars maxillary and supra-numerary teeth. The higher incidence in the jaw is explained by the higher prevalence of impacted teeth in the mandible than in the maxilla (4,8).

The removal of third molars, in most cases, requires local anesthesia and is made by an intra-oral. The teeth are usually included in the alveolar bone in the distal of the second molar and this position favors intra-oral access. There are situations, however, that the conventional approach does not apply. The third molars may take positions in ectopic mandibular bone, as the notch of the mandible, mandibular condyle, and mandibular body and when it does the surgical approach is modified. The conventional removal of impacted third molars deep is very difficult besides being often associated to the inferior alveolar nerve injury (11,12). In cases where they are needed most accurate images or when the close relationship is very close, computed tomography is indicated as it will provide the exact location of the inferior alveolar nerve in relation to the dental roots of inferior elements (13). The information provided by tomography ensures the reduction of damage to the nerve at the time of extraction, and help in choosing the best form of operative approach (14).

A parameter in the selection of intra-or extra approach to oral ectopic teeth in the jaw is vasculo-inferior alveolar nerve. When the tooth is in ectopic branch, formerly the vascular-nervous bundle intra-oral access is well indicated. Incisions on the front edge of the branch, similar to those

made for access osteotomies in orthognathic surgery jaw advocated can be adopted. When the tooth is posterior to the inferior alveolar or below, the extra-oral access is indicated, and in this case, it is suggested anesthesia of the patient. The exposure and visualization of the tooth and the use of high rotation odontosection is a factor to be considered in the planning of incisions.

The World Health Organization (1992) defines the dentigerous cyst as “a cyst that arises from the separation of the follicle from the crown of an impacted tooth” (4) and involve the crown of the tooth and are attached to the neck, near the junction-cementum, those not yet erupted. Histologically, the dentigerous consists of a fibrous wall which may contain variable amounts of tissue and debris odontogenic myxoid. He is surrounded by a stratified epithelium squamous non-keratinized, which may occasionally display mucous cells, ciliated and, rarely, sebaceous cells (5). The dentigerous cyst presents a capsule of fibrous connective tissue arranged loosely, general lined by epithelium, stratified squamous type of non-keratinized, with two to four layers of cubic epithelial cells, and the epithelial-connective junction flat, and yet, hyperplastic squamous epithelium and reduced enamel epithelium can also take the lesion (8). In the capsule the presence of a mononuclear inflammatory infiltrate and small islands or ridges of residual odontogenic epithelium can be observed (9). The cystic content is represented by a hemorrhagic or serous exudate with the possible presence of epithelial and inflammatory cells (9).

Microscopic analysis of the sample revealed fragments of fibrous connective tissue forming capsular with extensive areas of intense chronic inflammatory infiltrate and foci of hemorrhage, and odontogenic epithelium lining the surface of the conjunctiva, which is compatible with dentigerous infected.

There are no aspects microscopic characteristic that can be safely used to diagnose a dentigerous of other injuries. There is usually a thin wall of tissue, coated with light thin layer of stratified squamous epithelium, usually without formation of epithelial buds, except in infected cases; fairly thick connective wall tissue and loose connective tissue

composed of myxomatous tissue or sparsely collagenized. The walls of connective tissue appear islands of odontogenic epithelium. In dentigerous infected presence of Rushton bodies (bodies hyaline peculiar linear) in the epithelial lining (4).

The width of the pericoronal space in panoramic radiograph cannot be considered a single parameter in the differential diagnosis of dental follicle and dentigerous cyst and cannot be used as the sole method for differential diagnosis between the two, being necessary to the sum of clinical, radiographic and histopathologic to establish the correct diagnosis (15). Histopathological analysis after enucleation of the lesion should be considered extremely important for the differential diagnosis, since there are similar clinical and radiographic features of dentigerous cyst with a cystic ameloblastoma, odontogenic tumor keratocystic or ameloblastic fibroma.

“The prognosis for most is favorable dentigerous cysts, and rarely occurs recurrence after complete removal of the cyst” (4,5), patients should be monitored for a long time.

Conclusions

Surgical access submandibular extra-oral provided adequate exposure of the surgical field, favoring enucleation of the cyst and removal of the tooth. The positioning of the tooth and the cyst and its relation to the inferior alveolar nerve was demonstrated by panoramic radiography and computed tomography. A decision parameter in the type of surgical approach is the position of the tooth in the jaw, and recommend locations medial and inferior to the inferior alveolar nerve to be accessed via headgear with use of general anesthesia.

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