

Surgical management of a large complex odontoma associated with a deeply impacted mandibular third molar

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Summary

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Odontomas are non aggressive, slow-growing tumours of hard, odontogenic tissue that can cause disorders of dental eruption. A 26-year-old man was referred to our department with an intraoral swelling located in the right mandibular angle. Clinically, an odontoma, preventing the eruption of the right mandibular third molar, was diagnosed. The odontoma was completely excised via an intraoral conservative approach. This procedure preserved the buccal plate, reducing the risk of fracture, and gave excellent access to the site where the tumour was located, even though this approach is associated with the risk of injury to the lingual nerve.

Key words: complex odontoma, odontomas, radiopaque lesion, third molar.

Sommario

Terapia chirurgica di un odontoma complesso associato ad un ottavo inferiore incluso

Gli odontomi sono tumori non aggressivi formati da tessuto duro odontogenico e caratterizzati da crescita lenta che possono causare disordini nell'eruzione dentale. Un uomo di 26 anni è stato inviato presso il nostro dipartimento a causa della presenza di una tumefazione intraorale nell'angolo mandibolare destro. Cli-

nicamente è stato diagnosticato un odontoma che impediva l'eruzione del terzo molare mandibolare destro. La lesione fu completamente asportata con un approccio intraorale conservativo. Con questa procedura si è mantenuta la corticale buccale, riducendo il rischio di fratture, avendo comunque un accesso eccellente alla lesione, sebbene questo approccio possa causare lesioni al nervo linguale.

Parole chiave: odontoma complesso, odontomi, lesione radio-opaca, terzo molare.

Introduction

Odontomas are non aggressive, slow-growing tumours of hard, odontogenic tissue (Kramer, 1992). They often interfere with dental eruption, causing disorders such as impaction or delayed eruption, abnormalities in the position of teeth, or displacement of adjacent teeth (Hisatomi, 2002). Large complex odontomas of the mandible are rare. A review of the literature revealed little information about the preferred surgical approach to these lesions (Blinder, 1993). The aim of the present paper is to describe a case of large complex odontoma of the mandibular angle associated with a third molar impaction. The odontoma was excised via an intraoral conservative approach.

Case report

A 26-year-old man was referred to our department with an intraoral swelling located in the right mandibular angle, which until the appearance of the swelling had been symptom-free. The family history did not indicate any similar or related anomalies. No previous trauma in the region of the face or mouth was recalled. The medical history was unremarkable. Extra-oral examination did not reveal any facial asymmetry. Intra-oral examination revealed expansion of the buccal plate in the area of the right mandibular angle, presence of the roots of the right mandibular second molar and absence of the right mandibular third molar. All other teeth were present and normal. No other anomalies were noticed in the soft and hard tissue of the right mandible. Panoramic radiography showed a large, localized, radiopaque lesion surrounded by a thin, radiolucent area in the right mandible angle (Fig. 1A). Clinically, a complex odontoma, preventing the eruption of the right mandibular third molar, was diagnosed. It was decided to remove the lesion and the impacted tooth. One week before the operation, the roots of the right mandibular second molar were removed. A vestibular intraoral incision was performed un-

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der general anaesthesia after naso-tracheal intubation. The primary incision was extended from the external oblique line to the distal aspect of the first molar and then lingually to the mesial aspect of the second premolar. A vertical release incision was made in the buccal aspect of the first molar down to the vestibule. The next step was the elevation of full-thickness mucoperiosteal flaps. The buccal and lingual plates of the mandible angle, part of the lateral aspect of the ramus and the upper margin of the lesion were exposed. A chisel was used to execute an occlusal-lingual window, completely exposing the lesion. The mass of the lesion was contained in a fibrous capsule. It was completely excised using a bur and chisel (Figg. 1B-1C). All tissues obtained were placed in 10% buffered formalin and submitted for histopathological examination (Fig. 1D). The third molar was found to be detached from the lesion but its roots

were unciform, anchored to the lower border of the mandible and very close to the inferior alveolar nerve. Carefully, the impacted tooth was removed by performing an odontotomy. The bur and chisel were used with particular caution in order to prevent injury to the inferior alveolar nerve and unwanted fracture of the mandible. Bone wax was used to obtain haemostasis. The flaps were sutured with 4-0 black silk sutures. On clinical examination a few days after the operation the soft tissues were judged to be healing well. After 12 months, sensation in the innervation area of the inferior alveolar and lingual nerves was preserved. The pathology report confirmed the clinical diagnosis of complex odontoma. Healing was uneventful with postoperative radiographs showing satisfactory osseous regeneration of the defect and continuity of the inferior mandibular border (Figg. 1E-1F).

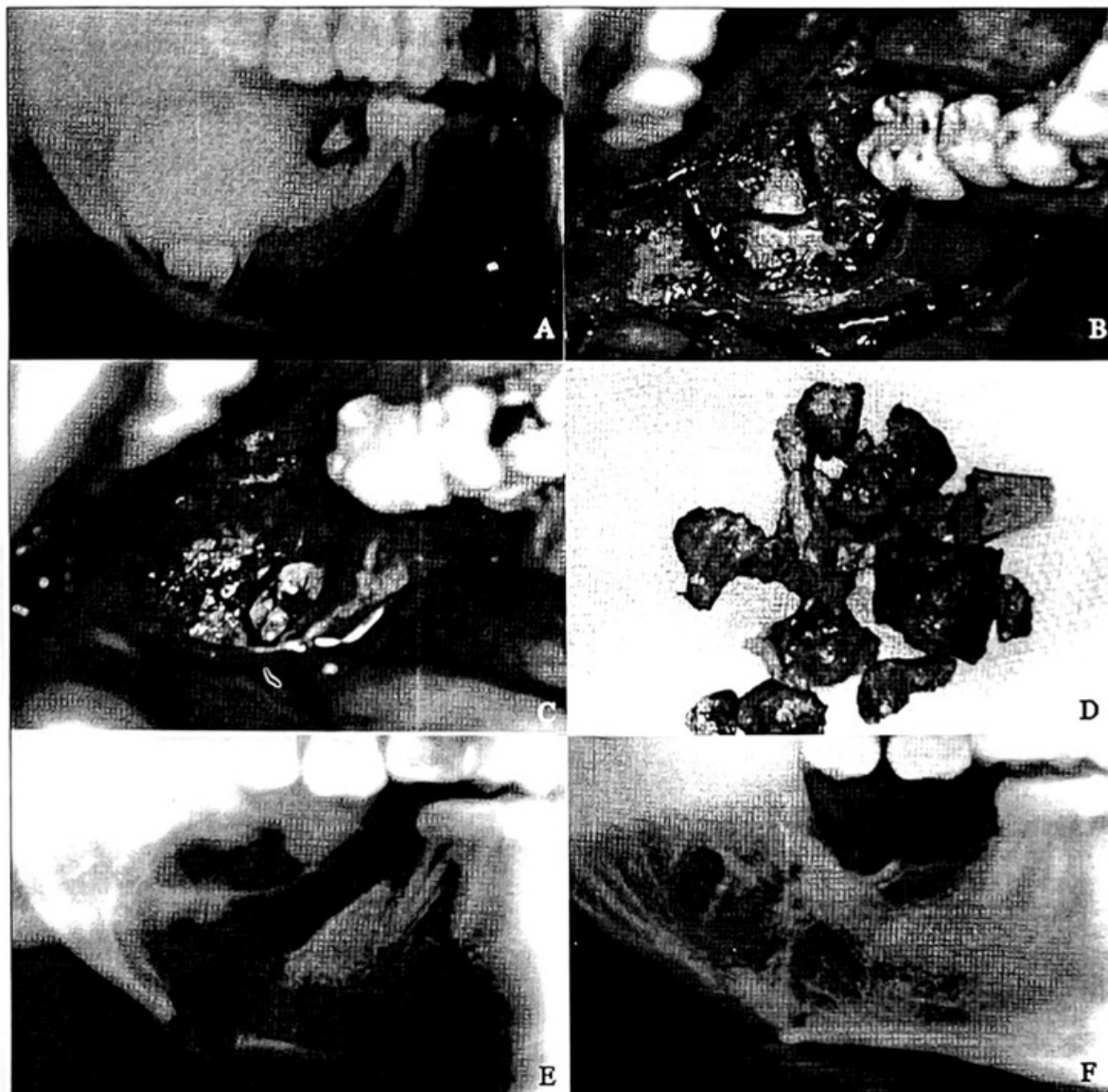


Figure 1 - A) A panoramic radiograph showing a complex odontoma, preventing the eruption of the right mandibular third molar. B-C) Intra-operative views of the lesion. D) Tissues obtained from the excision of the odontoma. E) A panoramic radiograph showing the area of intervention immediately after surgery. F) A panoramic radiograph showing the area of intervention 12 months after surgery.

Discussion and conclusions

Because they are often asymptomatic (Miki, 1999), odontomas are usually discovered on routine radiographic examination. However, they can cause signs and symptoms such as delayed eruption, impacted or unerupted teeth, and/or swelling (Hisatomi, 2002). Radiologically, an odontoma appears as a dense radiopaque lesion surrounded by a thin radiolucent halo. In the presence of an X-ray image compatible with odontoma, a differential diagnosis must be made *versus* inter-radicular or pericoronal lesions. The results of retrospective studies show that odontomas are most likely to be located in the anterior maxilla and to occur in the second decade of life (Owens, 1997). Odontomas are the most common maxillary tumours. An odontoma has limited growth potential but should be excised because it can interfere with the eruption of permanent teeth and can cause considerable bone resorption (Hisatomi, 2002). Odontomas should be removed via an intraoral approach (Blinder, 1993). Depending on the extent of the lesion, its lingual-buccal location and whether the lingual or buccal cortical are eroded, odontomas can be removed by buccal, lingual or occlusal exposure (Blinder, 1993). In this case we decided to perform an occlusal-lingual osteotomy since the lingual plate and the upper border of the mandible were already eroded by the lesion. This procedure preserved the buccal plate, reducing the risk of fracture,

and gave excellent access to the site where the tumour was located. This type of approach is associated with the risk of injury to the lingual nerve. However, this complication was avoided by careful elevation of the lingual mucoperiosteal flap and protection of the same by a curved retractor. Although the impacted tooth had uniform roots, anchored to the lower border of the mandible and close to the inferior alveolar nerve, we succeeded in preventing the nerve injury and in preserving sensation in the area supplied by the inferior alveolar nerve.

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