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Huge Complex Odontomas in Two Cases with Unique History and Treatment Protocols

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Abstract

Odontomas are one of the mixed odontogenic tumors. Complex odontomas are a subgroup of odontomas and they usually occur in posterior mandible. We present two cases with huge complex odontomas dealt with surgical treatment approach using radical or conservative options. Case 1 was examined clinically and radiologically using panoramic roentgen and 3D computerized tomography with being one year late. Case 1 was operated using radical surgical approach involving intra-oral and extra-oral technique. In addition, a reconstruction plate was used to strengthen the mandible due to compulsory condition. Case 1 recovered in three years uneventfully. Case 2 was diagnosed based on the same clinical and radiological methods mentioned in Case 1. Unlike, Case 2 was operated using only conservative treatment option since the accompanying impacted tooth could be removed. Practitioners must be careful to make early diagnosis of such lesions in order to avoid radical treatment options or other unnecessary treatments.

Keywords: Complex odontomas; Radical treatment; Conservative treatment; Early diagnosis

Introduction

Odontomas are the most common odontogenic tumors and cause malformations in dental hard tissues such as enamel, dentin, cementum and pulp [1]. According to the 2005 and the most recent 2010 update classification of the World Health Organization, based on lesions development, radiographic and histological aspects, they are classified as complex and compound odontomas [2-4]. Compound odontomas show an orderly pattern on all dental tissues, and appear as tooth-like structures. Complex odontomas occur in all dental tissues as a mix of histological features and unorganized tooth structures [2,3]. Odontomas usually are treated surgically without recurrence [5]. The type of surgical approach may change as conservative or radical including reconstruction procedure according to their size and remaining bone quantity [5]. In this present study, we report two rare huge complex odontoma cases which were treated via different surgical procedures of radical or conservative approach and follow up data from these cases with successful healing.

Case Presentation

Case 1

A 16-year-old female patient was referred to the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry in Tokat, Turkey with a mass and trismus of the mandible. She had been taking antibiotic therapy repeatedly in the last twelve months. Her systemic anamnesis was unremarkable. Based on clinical examination, she was not able to open her mouth regularly and hyperemia had been seen in the third molar area. There was a swelling in intraoral and extra-oral view. First, the panoramic X-ray was taken and it revealed a huge radiopaque lesion with an impacted molar tooth at the lower border of mandible (Figure 1). Her dentist misdiagnosed the lesion since only a periapical X-ray was taken. To manage the infection in the oro-facial region, the surgeon prescribed an antibiotic therapy to the patient. Then the patient was referred to radiologist to examine 3D construction of the lesion using CT. Radiologist found out that the lesion resembled odontomas and impacted molar tooth (Figure 1). Then, an incisional biopsy procedure was applied to the lesion area. Histopathologic examination revealed a complex odontoma lesion (Figure 2). Then, a major surgical operation with reconstruction procedures was planned taking proper consent of the patient's guardian. Surgical plan was carried out based on 3D shape of the lesion. Then, the maxillofacial surgeon operated the tumor and impacted tooth using intraoral and extra-oral approach while preserving the facial nerve under general anesthesia (Figure 3). Despite careful extra-oral dissection technique, the surgeon had to ligate the facial arteria and vein. Due to the removal of odontoma lesion and impacted molar

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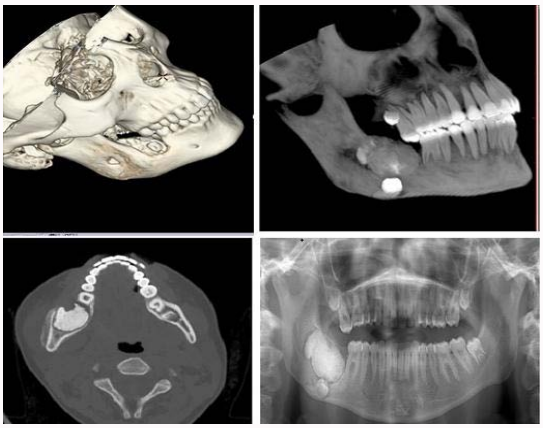

Figure 1: Radiological view of Case 1 regarding preoperative situation.

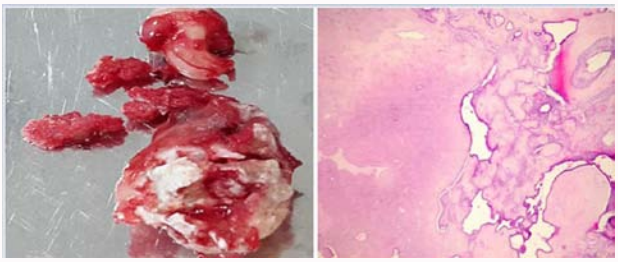

Figure 2: Surgical material and disorganised histopathological view of Case 1 including dentin, enamel matrix and cementum (HE X 100).

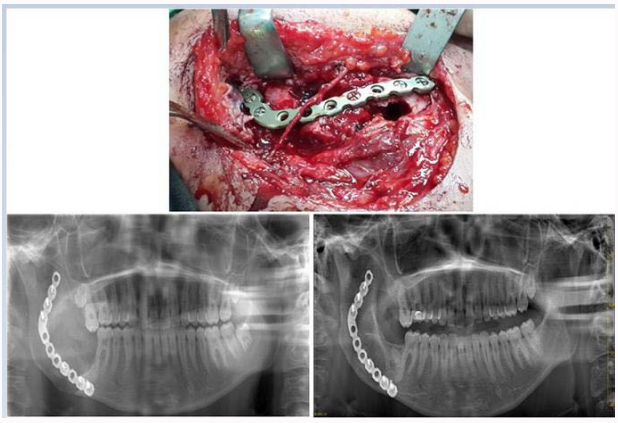

Figure 3: Intra-operative photograph and postoperative panoramic roentgen follow up of Case 1.

tooth through operation, mandible became very weak with a thin cortical plate remaining at lingual base side of mandible. Therefore, the mandible was reconstructed with major titanium plate and screws through extra-oral approach (Figure 2). The surgical material was sent to histopathological survey and the previous diagnosis that it was a complex odontoma lesion was confirmed (Figure 3). The patient was followed about three years and the surgical area healed in a natural mandible shape (Figure 2). The reconstructed plate was placed in a somewhat improper position (Figure 2). But, the patient had no functional or esthetical problem. In addition, teeth number 18 and 38 were removed sequentially in the latter control session, since they could not have erupted into oral cavity. In the final evaluation, the patient's condition was satisfactory with uneventful jaw functions, preserving the sensation of inferior alveolar nerve.

Figure 4: Radiological view of Case 2 regarding preoperative situation.

Figure 5: Postoperative panoramic roentgen follow up of Case 2.

The patient is still under control without any complaints. The Case 1 was presented as a poster in 17th International Congress on Oral Pathology and Medicine, Joint Meeting of the British Society for Oral and Maxillofacial Pathology, 25-30 May 2014, Istanbul, Turkey.

Case 2

A 16-year-old female patient was referred to the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry in Tokat, Turkey, with complaint of pain in her third molar area at the right side of the mandible. Her systemic anamnesis was unremarkable. She was examined based on clinical and radiological examinations.

Panoramic roentgen revealed a huge radiopaque lesion that impacted molar tooth under it (Figure 4). Then the patient was referred to radiologist to examine 3D shape of the lesion via CT (Figure 4). Radiologist confirmed that the lesion resembled odontomas and impacted molar tooth. He also constructed a 3D shape of the lesion (Figure 4). Then, an incisional biopsy was applied. Histopathologic examination revealed the odontoma lesion. A surgical operation was planned after taking proper consent of the patient's guardian. Maxillofacial surgeon operated the tumor and impacted tooth using intraoral approach under general anesthesia with proper surgical technique but without any reconstruction method mentioned in Case 1. The patient has been followed up closely with periodical control sessions (Figure 5). According to the last panoramic roentgen the lesion has fully healed (Figure 5) and sensation of the inferior alveolar nerve has been preserved 1.5 year after the surgical operation. She is still under control. After the patient reaches 18th years of age, the edentulous area will be rehabilitated with dental implant supported by porcelain crown. All presented two cases treated with their legal guardian's approval of informed consent forms.

Discussion

Odontomas are mixed tumors originated from both epithelial

and mesenchymal cells. Some authors report odontomas as hamartomatous lesions [1,5]. Most odontomas are asymptomatic [4,5] unlike the present cases, where the Case 1 presented with pain, trismus and oral infection findings, and the Case 2 presented with orofacial pain.

However, real signs and symptoms may reveal the presence of odontoma in a routine dentist visit. The most common clinical appearance is delayed eruption of teeth, and the most common complaint is swelling at the lesion site [4,5] despite the young age of patients, slight facial swelling and asymmetry, orofacial infection and trismus especially in Case 1 was noted probably due the unusually large size of the lesion. Some reports indicated that complex odontomas usually seen in posterior mandible [4,5]. In consistent with those literatures, complex odontomas in our cases were seen in posterior mandible above the impacted molar teeth. The surgical removal techniques of large benign tumors located at the molar or angle of the mandible include: segmental osteotomy via an extra-oral submandibular approach, unilateral sagittal split osteotomy and intraoral excision using a buccal or the lingual cortex approach [4,5]. In the presented Case 1, the surgery team used both extra-oral and intraoral surgical approaches to remove the huge odontoma lesion with impacted molar tooth and reconstruction of the mandible. In Case 1, the surgery team made placed reconstruction plate somewhat erroneously towards to coronoid process of the mandible. Fortunately, the patient did not have any functional or aesthetic problem with her jaws. In Case 2, the surgery team did not use extra-oral approach and reconstruction plate due to its size, and an intraoral surgical approach was enough to remove lesion and the patient did not have any fracture risk with her mandible. In addition, the inferior neurovascular bundle in Case 2 was not damaged because of the conservative surgical approach. Different surgical techniques were employed in both cases because of different lesion sizes and remaining bone quantities. In conclusion, early detection of such lesions is very important to avoid radical treatment efforts which may be harmful to the patients like the presented Case 1. We suggest that practitioners take panoramic roentgen in the first meeting session to detect these lesions and also not to carry out unnecessary treatment like presented Case 1.

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