Conservative Management of Odontogenic Myxoma - A Case Report

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Abstract

Rationale: This is a 14-year-old girl with odontogenic myxoma of the right posterior mandibular region, which was managed conservatively by intraoral marginal mandibulectomy rather than segmental mandibulectomy. **Patient Concerns:** The patient and her parents were concerned about her aesthetics. **Diagnosis:** The patient came with the complaint of swelling on the right lower back tooth region of the jaw, which was not associated with pain. On palpation, the swelling was bony hard and there was buccolingual expansion. On radiographic examination, there was a sunray appearance. Histopathological examination confirmed it to be an odontogenic myxoma. **Treatment:** Marginal mandibulectomy was done for the patient. The whole procedure was done intraorally and closed using primary closure. **Outcomes:** Postoperatively, the patient was asymptomatic and is on follow-up. **Take-away Lessons:** We can say that odontogenic myxoma can be managed conservatively.

Keywords: Mandibulectomy, odontogenic myxoma, paediatric, posterior mandible

Introduction

Odontogenic myxoma is an uncommon benign tumour of the jaw that usually manifests as a gradual, painless enlargement of the bone that causes a deformity on the face.[1] It most frequently occurs in conjunction with an unerupted tooth and most likely originates from the tooth germ's mesenchymal layer.[2] In the paediatric population, it is an uncommon occurrence, particularly in females.[3] Here, we report a unique case of odontogenic myxoma, which occurred in a young female patient and the conservative treatment protocol that we followed. The surgical procedure was performed intraorally. The treatment plan followed was marginal mandibulectomy, instead of segmental mandibulectomy, which is the standard treatment for such an aggressive tumour.

Case Report

A 14-year-old girl reported to the department with the chief complaint of swelling on the right side of the face for 5 months. The patient complained of no pain. The patient had no surgical or medical history. No relevant family history was noted. No treatments and medications were taken priorly.

The patient was conscious, oriented and afebrile. On extraoral examination, there was a facial deformity on the right side. The swelling extended from the right lip commissure to the lower border of the mandible superoinferiorly and from the right lip commissure to the angle of the mandible anteroposteriorly. A single mobile right submandibular lymph node was tender on palpation. The right submandibular lymphadenopathy was noted.

On intraoral examination, the swelling was noted in respect to the 44-46 region [Figure 1]. The lesion measured roughly 5 cm × 4 cm in size. No caries or calculus was noted. On palpation, the swelling was bony hard in nature, non-tender and extending from 43 anteriorly to 47 posteriorly. Teeth 44, 45 and 46 were mobile.

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Based on clinical findings, differential diagnoses given were ameloblastoma, ossifying fibroma, osteosarcoma, fibrous dysplasia, cemento-osseous dysplasia, fibro-osseous lesion, central giant cell granuloma and odontogenic myxoma.

On radiographic examination, in orthopantomogram, a well-defined mixed radiolucency in relation to 45 was seen with a sunray appearance. The roots of 44 and 46 were displaced away and the lesion extended from 44 to the mesial surface of 47. In computed tomography, a well-defined lesion with bony septa was noted extending from the 43 to 46 region and up to 2 cm from the lower border of the mandible. Buccal and lingual cortical plate expansion was seen [Figure 2].

Based on radiographic and clinical findings, the provisional diagnoses given were osteosarcoma and odontogenic myxoma. An incisional biopsy in respect to the 45 region was done. Histopathological examination revealed loose myxoid connective tissue consisting of randomly oriented stellate, spindle-shaped and oval cells [Figure 3].

Figure 1: Intraoral swelling extending from 44 to 46 region

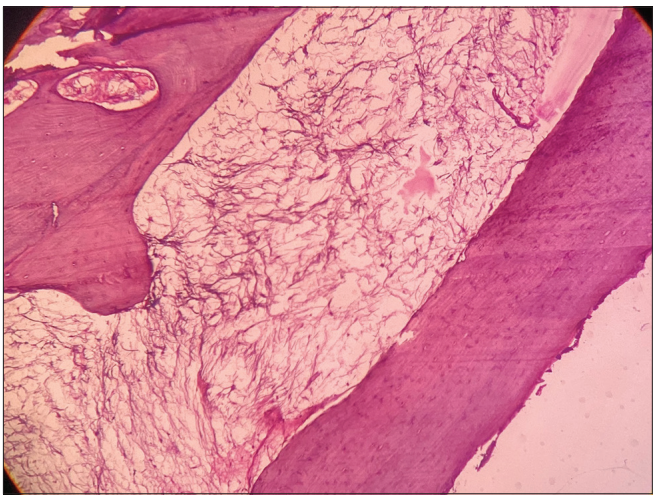

Figure 3: Heamatoxylin and eosin stained section under 10x magnification showed myxoid connective tissue stroma showing polygonal to spindle shaped cells at several areas with numerous blood vessels and devoid of inflammatory cell infilterate

Hence, the lesion was confirmed to be odontogenic myxoma of the right posterior mandible.

Considering the age of the patient, marginal mandibulectomy was done for the patient. Intraorally, a crevicular incision was made from 41 to 47 region and then an anterior releasing incision was made mesial to 41 and posterior releasing incision was made distal to 47 [Figure 4]. Osteotomy cuts were made mesial to 41, distal to 47 and about 10 mm from the lower border of the mandible. The bony mass along with the teeth was resected in *toto* [Figure 5]. Reconstruction was done using 2-mm 20-hole stainless steel miniplate secured using 2 × 6 mm screws (five numbers) [Figure 6]. During the procedure, a pathological fracture was observed on the lower border of the mandible which was

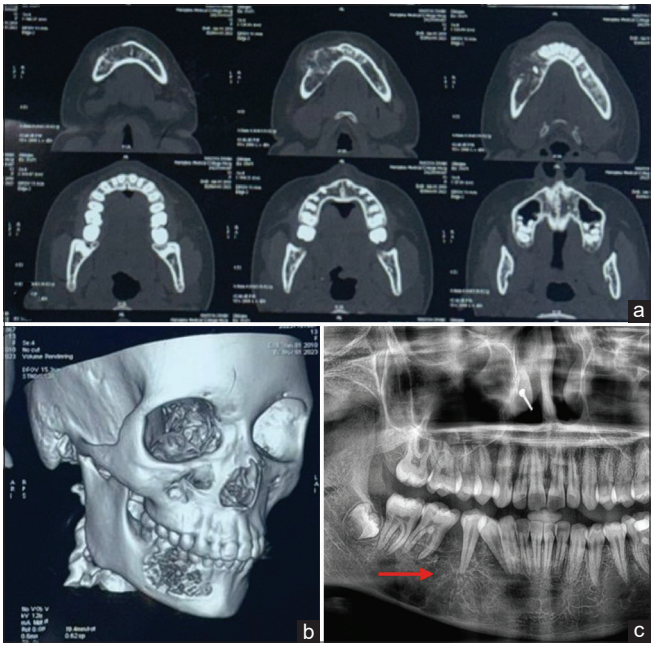

Figure 2: (a) Buccolingual expansion seen on the right mandibular region. (b) 3D reconstructed CT showing lesion extending from 43 to 46 region. (c) Sunray appearance seen in relation to 45 extending towards 46 and 44 region

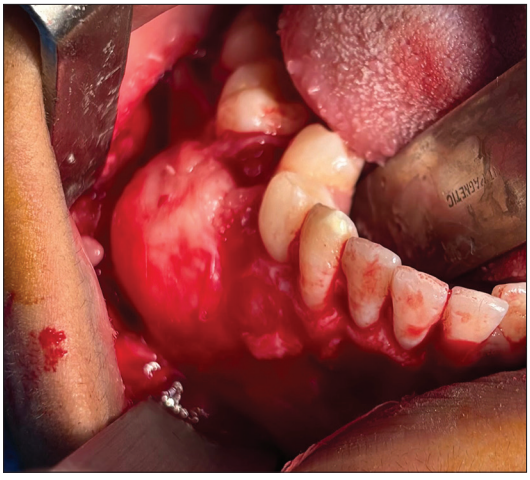

Figure 4: Surgical exposure of the lesion

stabilised using transosseous wiring [Figure 7]. Primary closure was done followed by Bactigras packing. During the patient's hospital stay, Injection Taxim 1 g BD, Injection Metrogyl 500 mg BD, Injection Dexamethasone 8 mg BD, Injection Paracetamol 1 g BD and injection Pantoprazole 40 mg OD was administered intravenously for 5 days. Postoperatively, the patient was kept on intermaxillary fixation for 4 weeks. The chlorhexidine dressing (Bactigras) was changed for the patient every 4 days for 8 weeks. The healing is satisfactory [Figure 8]. The patient is on follow-up for the past 3 months and is asymptomatic.

Discussion

The odontogenic myxoma is a locally invasive benign odontogenic tumour of the jaws, which apparently arises from the mesenchymal portion of the tooth germ.[1,4] It usually manifests in the second or third decade of life, with an average age of 23-30 years.[5] It is extremely rare before the age of 10 or after 50 years. Posterior body and angle of the mandible region is primarily affected. However, rare occurrences can be seen in the maxilla and is known to be more aggressive.[6]

The radiograph may show a multilocular lesion with a mottled or honeycombed appearance of the bone composed of fine trabeculae grouped at right angles, resembling a 'tennis racquet' or 'step ladder'.[5] A 'sunray' or sunburst appearance, as recorded in the literature, may indicate a destructive and expanding radiolucency.[4] The internal configuration of the bony septa gives it a resemblance of 'lichen planus of the jaw bone' appearance.[7] Displacement of teeth by tumour mass is a very common observation, whereas root resorption is less common.[8] It causes severe bone destruction giving 'tooth floating in air' appearance.[7] Before a tumour is identified, it is usually extensive. In most maxillary lesions, the antrum is invaded.[9]

The treatment for odontogenic myxomas is surgical excision. Extensive lesions may necessitate segmental resection to remove the tumour.[10] This benign tumour might be difficult to remove due to local invasion and the tissue's loose, gelatinous structure.[4]

The above case was of a 14-year-old female patient. There was bony expansion with displacement of roots of 44 and 46 without root resorption. In the radiograph, the lesion showed a sunray appearance suggestive of a destructive expansile lesion. The treatment for such lesions, according to available literature, is segmental mandibulectomy, but for this case, marginal mandibulectomy was performed considering the age and the gender of the patient. The patient was a 14-year-old female. She and her parents were concerned about aesthetics and did not want an extraoral scar and facial disfigurement. During the procedure, a pathological fracture was encountered in relation to the lower border of the mandible when doing marginal mandibulectomy. A transosseous wiring was done to stabilise the segments and to preserve the continuity of the lower border of the mandible, thereby avoiding facial

Figure 5: Excised specimen measuring 5.5 cm × 2.5 cm × 2 cm

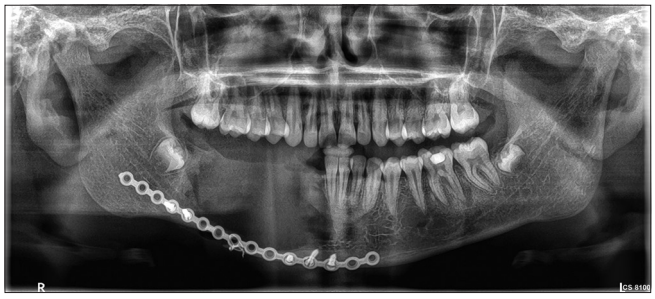

Figure 7: Orthopantomogram depicting transosseous wiring and reconstruction plate placement to maintain the continuity of the lower border of the mandible

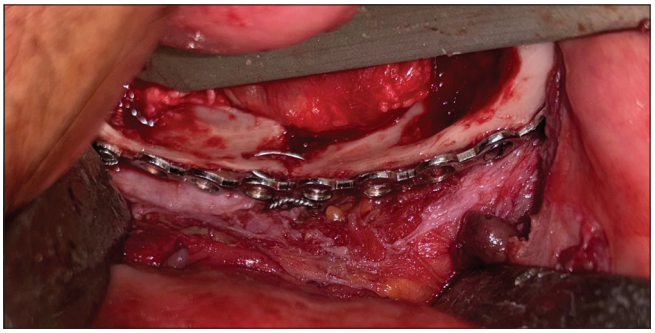

Figure 6: Reconstruction of marginally resected mandible using 2-mm 20-hole stainless steel plate to maintain stability

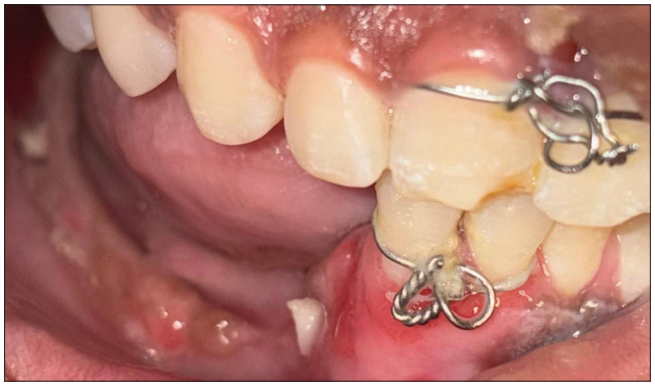

Figure 8: Two-month post-operative follow-up

disfigurement. Following wiring, a 20-hole stainless steel plate was used to provide additional strength to the mandible, also making it efficient during masticatory functions. The procedure was done intraorally, no visible extra-oral scar was present, hence the patient's aesthetics was not compromised. Therefore, complete resection of the tumour was done conservatively. The patient was satisfied with the treatment and is currently on follow-up.

Myxomas are uncommon tumours that are highly aggressive locally. If you do not treat them aggressively, they tend to come back. To improve the prognosis, good surgical planning and execution are needed, along with regular follow-up to prevent recurrence.

Conclusion

Based on the management of the above case, it can be stated that an aggressive tumour like odontogenic myxoma can be treated via an intraoral approach. This treatment protocol allows the patient to have a better quality of life, due to minimal facial disfigurement and lack of an extraoral scar.

Hence, the take home message is that odontogenic myxoma can be managed conservatively with proper treatment planning.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

Conflicts of interest

There are no conflicts of interest.

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