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ADOLESCENT CASE OF ODONTOGENIC MYXOMA IN MANDIBLE: A CASE REPORT.

Maxillofacial Surgery

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ABSTRACT

Making for 3-6% of all adult odontogenic tumors, odontogenic myxoma is an aggressive benign odontogenic tumor. Children have a lower incidence. The optimal course of treatment is up for debate because of its clinical behavior. The author of this research describes an 11-year-old boy who was diagnosed with odontogenic myxoma. A large radiolucent lesion affecting the left mandibular body and causing teeth displacement was visible on the panoramic X-ray. Tumor enucleation was followed by forceful curettage of the bone walls as part of the treatment. The inferior alveolar nerve and the mandibular base were both intact. After the surgery, the patient had no symptoms six months later. When choosing to proceed with conservative treatment, consideration was given to the patient's age as well as the radiographic characteristics.

KEYWORDS

Myxoma, Odontogenic Tumors, Pediatric Dentistry, Diagnosis, Surgical Intervention.

INTRODUCTION

A rare benign odontogenic tumor of mesenchymal origin that affects the maxillary bones without regard to gender is called an odontogenic myxoma (OM). About 3-6% of all odontogenic tumors in adults occur in the third decade of life, and the incidence of OM is significantly lower in children. There is a 25% chance of recurrence for this locally aggressive malignancy. When viewed radiographically, OM appears as a well-defined unilocular or multilocular osteolytic lesion where "soap bubble" or "honeycomb" formations are visible. Other frequent observations include displacement of the teeth and expansion of the cortical bone. The primary clinical-radiographic differential diagnosis is ameloblastoma[1-3].

Currently, there are two main surgical approaches for treating OM: conservative tumor enucleation and aggressive resections like segmental mandibulectomy or maxillectomy. There is also disagreement in the literature regarding the optimal course of treatment for pediatric patients[3-4].

The current study's goals were to describe a pediatric case of OM and go over the benefits of various treatment options.

CASE REPORT

An 11-year-old boy was referred to the Department of Oral and Maxillofacial Surgery with a chief complaint of pain being noted within the left lower back tooth region for 2 years. The pain was intermittent in nature with being dull throughout the left posterior region. Upon an extraoral inspection, a diffuse swelling was noted in the left cheek region extending anteroposteriorly from the left nasolabial fold to 3cm away from the right earlobe and superioinferiorly from the left infraorbital region to 1cm below the corner of the mouth. The skin over the swelling appeared normal. The swelling was firm on palpation with the lateral surface of the left ramus, with the swelling being pinchable. Tenderness on palpation was elicited, with no local rise in temperature and paresthesia being noted w.r.t the lips. Intraorally, tenderness on palpation was elicited w.r.t the anterior border of the ramus and buccal vestibule region. Radiographic analysis revealed a single, well-defined, unilocular lesion at the left ramus of the mandible on the distal aspect of the inferior alveolar nerve canal. A bone biopsy was conducted which came out to be an odontogenic myxoma. Thus, based on the thorough history, clinical examination, hematological, radiological, and histopathology, a final diagnosis of odontogenic myxoma was made. A decision of tumor enucleation and curettage with peripheral ostectomy under general anesthesia was decided upon, with the patient having undergone the same. The unerupted third molar was removed. Chemical cauterization was done with Carnoy's solution for 3 minutes. Hemostasis was achieved, with closure being done with an absorbable 3-0 suture. The post-operative period was uneventful, with the patient being managed with intravenous antibiotics and analgesics for 5 days. Upon being clinically stable and symptomatically better, the patient was discharged in a satisfactory condition on post-operative day 7. Subsequent follow-ups revealed no long-term complications with a healthy healing being noted.

DISCUSSION

Odontogenic mesenchymal tissue, which shares histological similarities with dental papilla and follicles, gives rise to OM. Stellate and spindle-shaped cells scattered throughout a copious myxoid extracellular matrix are its defining characteristics. Clinically, it invades nearby structures and is locally aggressive. The mandibular lesions encircle the mandibular canal, while the maxillary lesions typically reach the maxillary sinus. These tumors are more common between the ages of 20 and 40, and they occur in children under the age of 12 only occasionally. On radiography, osteolytic lesions are clearly defined when it comes to OM. One can see the "soap-bubble, honeycomb, or tennis-racket trabeculation" look[5-6]. The case study illustrates an OM affecting an 11-year-old boy's mandible. The tumor did not affect the oral mucosa, but the growth of the left mandibular body resulted in a mild facial asymmetry on the left side of the face.

Other maxillary lesions including central giant cell granuloma and various benign or even malignant odontogenic tumors are listed as differential diagnoses because of the biological nature of OM[7]. Because of the patient's age, ameloblastic fibroma (AF) was one of the possible diagnoses in this instance. This type of tumor usually affects the posterior portion of the jaw, grows slowly and painlessly, and is more common in younger people. The radiolucent lesions seen on AF radiography range in size from tiny, well-defined unilocular lesions to a multilocular pattern. Eighty percent of cases have impacted teeth, usually the first or second permanent molar; cortical perforation and root resorption are rare[8]. Another highly-considered theory was ameloblastoma (AB), which is more common in the mandibular posterior region and is also typically characterized by the radiographic patterns known as the "soap bubble" and "honeycomb." Nevertheless, our patient's age fell outside of the epidemiologic markers of ameloblastoma. Furthermore, our instance did not exhibit root reabsorption, which is typical of large ameloblastomas[7-8].A bright-yellowish, gelatinous tissue was retrieved during the incisional biopsy, indicating a prominent macroscopic characteristic of OM. We considered OM as the primary diagnostic hypothesis based on this observation related to radiographic characteristics.

Kaffe et al.[6] reported 7% occurrence in first decade of life while reviewing 164 cases of odontogenic myxoma while Keszler et al.[7] reported 8.4% occurrence in less than 16 years of age while reviewing 367 cases of odontogenic myxoma. Stout defined myxoma as, “a true neoplasm made up of tissues resembling primitive mesenchyme”. Thus, it is composed of stellate cells arranged in loose mucoid stroma which also contains delicate reticulin fibres. The lesion is benign and occurs commonly in the skin, the genitourinary tract, the gastrointestinal tract or in organs such as the liver, the spleen or even the parotid gland[8].

When choosing a treatment for odontogenic tumors in children, both functional and cosmetic factors should be taken into account. This is particularly true for OM, a benign tumor that is locally aggressive. To prevent recurrences, the surgical strategy varies from conservative enucleation to radical resection with sufficient surgical margins[4-6]. Kansy et al.[2] added 4 examples involving the maxilla to their review of the literature on OM. These authors demonstrated the tendency toward extreme surgery for adults, while children should be treated with more conservative methods including lesion curettage and enucleation. When enucleation and partial maxillectomy were compared, the

recurrence rates were comparable[9]. Surgeons should be aware that performing drastic surgeries on youngsters might have an adverse effect on the growth and function of the jaw bones and surrounding structures, as noted by Subramaniam et al.[7]. Rotenberg et al.[8] suggested conservative or narrow resection of margins for myxomas of pediatric maxilla and found it to be effective. King et al.[9] did enucleation with peripheral osteotomy of 0.5–1 mm of bone and application of liquid nitrogen in two cases and found no recurrence. Liquid nitrogen cryosurgery may limit recurrence because of its ability to devitalize the organic content while leaving the inorganic framework intact[10].

Conservative therapy may also lead to lower morbidity and acceptable recurrence rates. A long-term, close follow-up is necessary in this instance, nevertheless, because the conservative approach-enucleation and forceful curettage-was made possible by the presence of cortical (lingual and basal) remains. A sufficient level of bone development, including the mandibular bone's height, was seen after six months. The patient is being closely monitored right now[6-8].

To sum up, OM behaves aggressively locally, and extensive resections are more often recommended. To prevent facial and functional abnormalities, a conservative approach (enucleation and forceful curettage) may be considered in extreme circumstances, as the one covered in this case report. It's imperative to closely monitor any potential recurrences[9-10].

CONCLUSION

Myxomas are very rare and locally aggressive tumors. If aggressive treatment is not received, they have a tendency to return. As we have stated, in order to enhance the prognosis, a precise histological diagnosis, good surgical planning, and its execution are necessary. Particular focus should be placed on preserving as much tissue as possible, particularly in cases involving the pediatric population.

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