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AMELOBLASTOMA BY HEMIMANDIBULECTOMY AND PLATE RECONSTRUCTION IN A YOUNG CHILD: A RARE-ENTITY

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ABSTRACT

Background: Ameloblastoma is a benign tumor derived from odontogenic epithelium showed locally aggressive behavior with a high recurrence rate. More than 80% of ameloblastoma developed in the area of the mandibular ramus or molar regio. **Aim:** To provide information about hemimandibulectomy and reconstruction with titanium plate in ameloblastoma on patients who is a 7-year-old girl with is a rare entity in children with ameloblastoma of bucal regio dextra.. **Conclusion:** We reported patient with ameloblastoma, a 7-year-old girl a rare case of multicystic ameloblastoma in the right mandibular, with the treatment by hemimandibulectomy and reconstructed with titanium plate and the outcome was satisfying.

Keywords : *Ameloblastoma, Hemimandibulectomy,reconstuction*

INTRODUCTION

The ameloblastoma is a benign odontogenic tumor of epithelial origin that exhibits a locally aggressive behavior with a high level of recurrence. It arises from any number of residual epithelial elements of tooth development : reduce enamel epithelium, rests of serres, rests of malasez or the basal layer of the oral mucosa. There is no gender bias. More than 80% of ameloblastomas develop in the mandibular ramus or molar region.[1,2,3]

Ameloblastoma normally present in the third and fourth decades of life, but cases have been reported at almost any age from the second to the ninth decades of life. It is usually asymptomatic and does not alter sensory nerve function.[1,3]

Ameloblastoma has been categorized broadly into 4 groups biological variants:cystic(unicystic),solid,peripheral and malignant.Unicystic ameloblastoma (UA),refers to those cystic lesions that show clinical and radiological features of an odontogenic cyst but in histological examination show ameloblastomatous epithelium lining the cyst cavity with or without luminal or mural proliferation. [2,4]

The primary treatment principle for any intrabony ameloblastoma is complete removal, regardless of the technique, due to its locally destructive potential and high risk for recurence. Enucleation and curretage was once considered the recommended treatment for unicystic ameloblastoma. The effects of resection on the recurrence data after a follow-up period of at least 5 years were evaluated. Furthermore, these recurrence data were analyzed with respect to clinical types and WHO patterns.[2,4,5]

We report a rare case ameloblastoma with surgical resection by hemimandibulectomy and plate reconstruction of the defects with titanium plate.

Case Report (MR 60 63 11)

A 7 year-old girl was brought by her parents to the Haji Adam Malik General Hospital on July 2th, 2014.The parents were concerned with appearance of a diffuse swelling on the right side of child's face which gradually increased in size over the past 7 months. The swelling was painless lump, slow- growing mass, no chewing disturbance was complaint, patient can eat and drink. No abnormalities found ear nose and throat. During ENT routine examination we found ears were normal. Anterior rhinoscopic and orofaring examination we found normal. Oral Hygienes was good on the right buccal mucosa appears a growing which masses, painless and palate was intact. As showed in the figure 1.

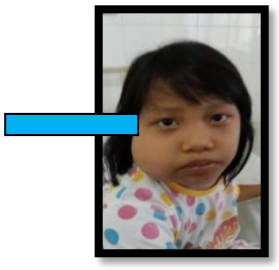

Figure 1. Revealed soliter mass with size 10x9x5 cm in the mandibular dextra

The location of the mass was found on the state of regio bucal dextra with solitary mass with size 10 x 9 x 5 cm,cystic, fluctuating and enlargement of non- palpable lymph nodes on the colli regio. A fine needle aspiration biopsy was performed C_2 Benign smear (trans cyst).

Figure 2 : Panoramic radioghrap, was found ameloblastoma type uniocular

Ct scan 3D face (July 3th 2014),impression: revealed swealing angulus-ramulus mandibular dextra with hypodense predominant lession tooth within. Corpus mandibular dextra ventricle system and cysterna were in good condition, pathologic findings hipodens, shows on the right hemispheres was found. As conclusion its possibility could be an ameloblastoma angulus ramus mandibula dextra.The result of full blood examination shows hb: 11,7 g%, leucocyte 10500 mm^3, thrombocyt 354 10^3/ul,protombin time 13,80 second, APTT 32,3 second. Thorax x-ray was normal. As showed in the figure 3:

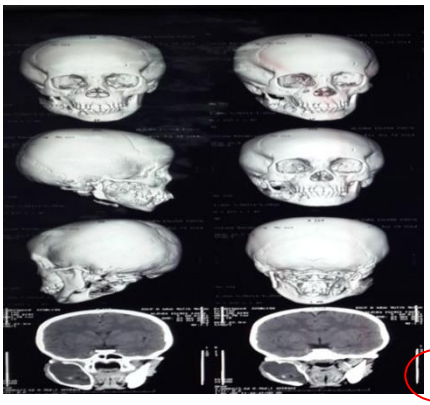

Figure 3: Result 3D face without contrast, was found destruction mandibular bone and right mandibular mass.

Patient was diagnosed with ameloblastoma and we planned for surgery hemimandibullectomy with reconstruction on October 8th 2014 using general anasthesia to removed the mass. Surgery procedure : Desinfection and pehacain infiltration to the incission site. Incission on submental from cutis, subcutis until mass and mandibular bone seen, follow through mandibular area until zygoma to evacuate the mass. Slowly mass been removed and the uniciystic mass which was filled with serous fluid. The mass only left with capsule after the serous was extirpated through hemandibullectomy by using gigli saw, the mandibular bone was resected according to vertical mentum area. The bleeding was control by spooling using Nacl and betadine. Reconstruction of mandible with plates been fixed by the oral surgeon following the fixixation with screw,stiching of the layer of the drain.

Figure 4: Patient lying on operation table

Figure 5: incision until mandibular bone seen

Figure 6. Folllowing mandibular area until zygoma

Figure 7. Slowly mass been remove

Figure 8. Reconstruction of mandible with plates ti

Figure 9. fixixation with screw titanium

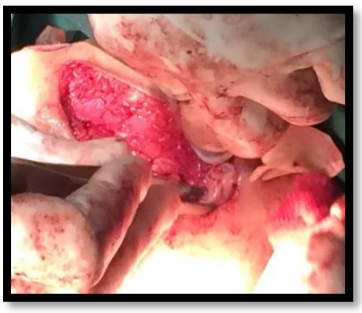

Figure 10. Drain instalation of drain

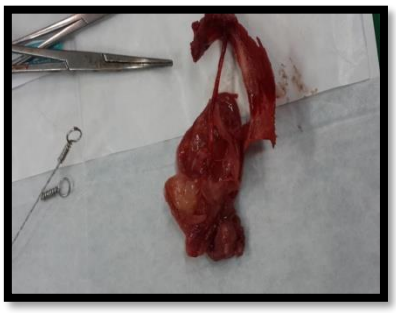

Figure 11. Resected part of mandible and mass

Figure 12. Stiching of the layer

Post operation,patient was given antibiotic: ceftriaxon 500 mg/12 hr, analgetic : ketorolac 30 mg/ 8 hr, anti-fibrinolytic : Transamin 250 mg/8 hr and steroid injection 5 mg/ 12 hr. The follow-up of the overall result was satisfying and the patient was discharged on the 7th day after operation. The histopathology examination showed ameloblastoma multicystic type with follicular pattern.

Figure 13. 7th day post operation

Figure 14. 14th day post operation

Discussion

This study reports a case of granular cell ameloblastoma that developed at the posterior mandible of a 7-year-old a female and has carried out by hemimandibullectomy and reconstruction with titanium plates.

Ameloblastoma normally present in the third and fourth decades of life, but cases have been reported at almost any age from the second to the nineth decades of life and with equal frequency in both sexes. Ameloblastomas have been found located in the mandible in around 80% of the cases and in the maxilla in the remain-ing 20%.[1,2,6] We report a rare case of multicystic ameloblastoma in the right mandibular of a 7-year-old girl . As showed in the figure 15.

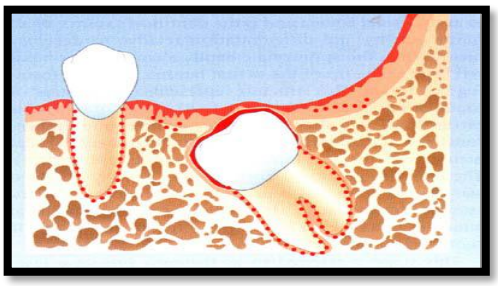

Figure 15. Likely source of the cause of ameloblastoma.[8]

The ameloblastoma is classified by the WHO as a benign epithelial odontogenic tumor without ectomesenchyma with locally invasive behavior and a high recurrence rate. It represents 11-18 % of all odontogenic tumors primarily affecting the posterior mandible. Generally asymptomatic, slow growing, it can perforate the cortical bone of teeth, resorb and cause facial asymmetry.[7] In the case, the parents were concerned with appearance of a diffuse swelling on the right side of child's face which gradually increased in size over the past 7 months.

Ameloblastoma can be classified into 4 groups: unicystic, solid or multicystic, peripheral, and malignant. The unicystic ameloblastoma usually appears as a “cystic” lesion with either an intraluminal or an intramural proliferation of the cystic lining. Radiographically, it may resemble a well-circumscribed slow-growing radiolucency. Multicystic ameloblastoma can infiltrate into the adjacent tissue and has the ability to recur and even metastasize. Its prevalence is a slightly older age group than the unicystic ameloblastoma. Radiographically,the appearance is generally unilocular or multilocular.Peripheral ameloblastoma mostly appears in the alveolar mucosa. It is a soft-tissue version of an ameloblastoma but can also involve the underlying bone. The malignant ameloblastoma is a rare entity. It is defined as an ameloblastoma that has already metastasized but still maintains its classical microscopic features. A histological classification subdivides into follicular, plexiform, acanthomatous and granular ameloblastoma.[2] In the case, the histopathology examination result shows ameloblastoma multicystic type with follicular pattern. As showed in the Figure 16 below of the ameloblastoma multicystic type with follicular pattern.

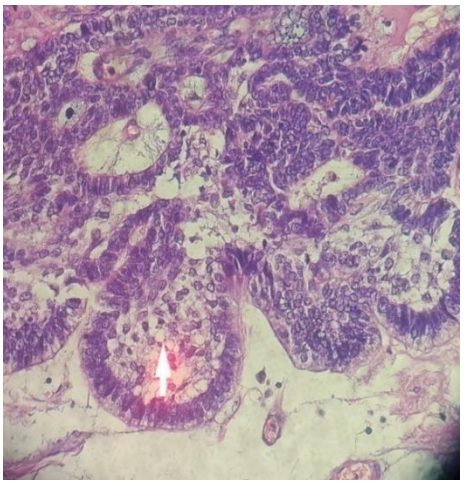

Figure 16: The mass of tumor that is composed of a proliverative odontogenik epitelial (HE.400x).

The methods of treatment consisted of radical surgery (segmental resection) and conservative treatments (enucleation with bone curettage). *Radical surgery* was defined as the procedure in which the ameloblastoma was resected, with a safety margin of at least 2 cm of normal bone, with or without a continuity defect. Conservative

treatment has been carried out in accordance with our comprehensive conservative treatment protocol for ameloblastomas since the 1980. Small lesions are submitted to excisional biopsy, and once the ameloblastoma has been diagnosed, the lesion is enucleated and curetted, including the surrounding healthy bone. Unilocular or multilocular cystic lesions are usually marsupialized before surgery. Lesions of solid-type tumor with clear margin viewed by means of radiographical examination are usually curetted extensively, and lesions with unclear margins, such as those with a soap-bubble appearance, or those with ineffective marsupialization are subjected to marginal or segmental resection depending on their size and location.[2,7,9,10] In the case reported a patient with ameloblastoma has been treated with resection hemimandibulectomy.

Reconstruction of the mandibular defect has been performed by various techniques including iliac bone grafts, costochondral grafts, a sliding vertical osteotomy on the posterior border of the mandibular ramus, sternoclavicular grafts, scapular flaps, vascularized second metatarsal joint grafts and reconstruction with plate.[5,11] In this case a patient was reconstructed with titanium plate (*titorp plates*).

The prognosis for ameloblastoma is more dependent on the method of surgical treatment rather the histologic type of tumour. Resection with some safe margin (marginal, segmental or composite resection depending on the site and size of the lesion) is the best primary method for treating solid/multicystic ameloblastomas to avoid recurrence.[12] We reported a 7-year-old patient with a rare case of multicystic ameloblastoma located at in the right mandibular, which is treated with hemimandibulectomy and reconstructed with titanium plate and the outcome was satisfying.

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