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Case Report

Management of Aneurysmal Bone Cyst of the mandible with successful bone regeneration of the defect – A Surgical Case report.

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Abstract

Aneurysmal Bone cyst (ABC) are rare benign bony lesion infrequent in the craniofacial region. ABC's are characterized by rapid growth pattern with resultant bony expansion and facial asymmetry, moreover it can also affect the surrounding teeth.

A routine radiographic investigation was performed in a 17-year-old female patient for orthodontic treatment and incidental identification of a bony lesion in the right side of the mandible was seen. This case report details the further surgical management of the lesion which was diagnosed as Aneurysmal Bone cyst and further regeneration of the surgical site using PRF.

Keywords: Aneurysmal Bone Cyst; Regeneration; PRF; Bony Lesions

Case Report

A 17-year-old female patient reported to the dental clinic for an orthodontic consultation, followed by which routine radiographic investigation was advised. However, on interpretation of the panoramic radiograph a large unilocular radiolucent lesion in the body of the mandible (right side) was incidentally identified [Figure 1] wherein the lesion extended from the mesial root of the first molar to the distal aspect of the canine root. Patient was asymptomatic at the defect area, with no signs of pain, swelling or paraesthesia, followed by which a vitality test was performed for the teeth involved (#46 to #43), which exhibited a positive response for vitality ruling out root canal treatment for the tested teeth.

Figure 1: Preoperative OPG revealing the ABC in ramus of the mandible.

Based on the clinical examination and investigations it was decided to go forward with flap elevation of the surgical site [Figure 2] and Fine Needle Aspiration Cytology (FNAC) [Figure3] under local anaesthesia was done. On performing FNAC blood-tinged aspirate was collected for histopathological investigations to confirm the diagnosis. Subsequently, a conservative surgical entry to the lesion was achieved by removing the cortical bone from the body of the mandible adjacent to the lesion.[Figure 4] Furthermore, on

visualising the lesion the defect was filled with blood fluid and no epithelial lining was found, complete curettage of the area was performed with utmost care not to damage the root of the adjacent teeth. Since the vitality test was positive, a high possibility of bone regeneration was anticipated at the curetted site, following which blood was drawn from the patient arm to prepare Platelet Rich Fibrin (PRF) for the regeneration of the bone deprived defect site. [Figure 5] Sutures were placed, and patient was prescribed routine analgesics and antibiotics and was on regular follow up.

Figure 2: Flap elevation of the surgical site.

Figure 3: Blood-tinged fluid collected by FNAC.

Figure 4: Surgical access to the site for curettage

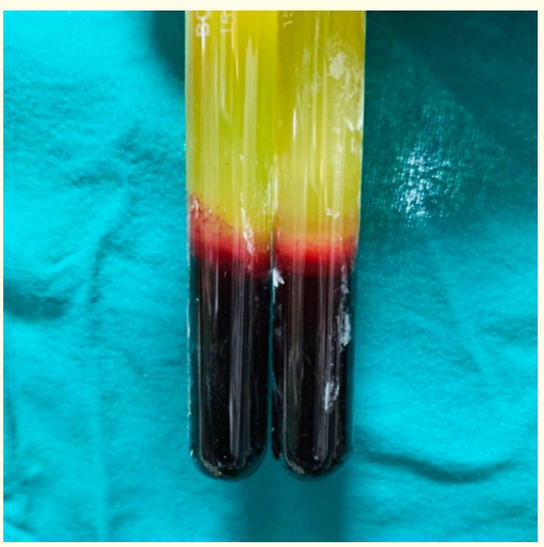

Figure 5: Platelet Rich Fibrin for regeneration.

Histological reports showed presence of large number of RBCs filled in vascular spaces, concluding the final diagnosis as Aneurysmal Bone cyst (ABC) of Jaw. Moreover, when the patient returned after a week for suture removal healing was uneventful and satisfactory. Post-operative OPG was taken after 9 months which revealed satisfactory bone regeneration, which has filled up the void defect site [Figure 6]. Patient was recalled for yearly follow up to check for any signs of recurrence as it is a frequent clinical feature of ABC.

Discussion

ABC occurs only 1.8% in the jaws and its aetiology is yet to be understood completely. This non-malignant lesion is seen more commonly in long bones and vertebras and shares similar features

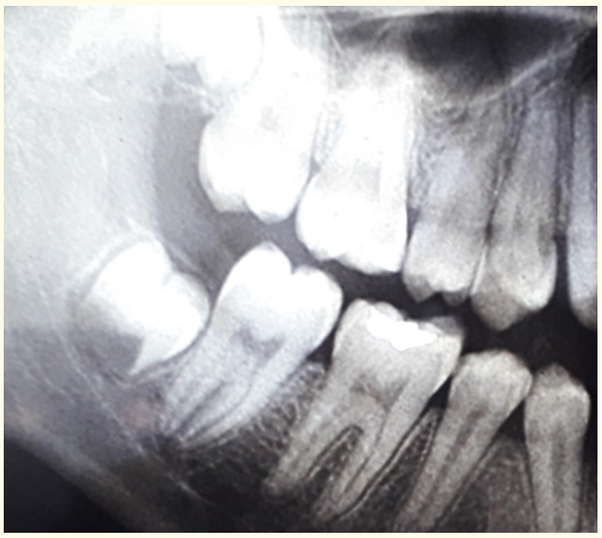

Figure 6: Postoperative OPG revealing bone regeneration after surgery.

of other perilous cystic entities like giant cell granuloma, epithelial cyst, ossifying fibroma, ameloblastoma and sarcomas. Making it complicated to arrive to a diagnosis with clinical and radiographic investigations, rather a histopathological assessment is crucial for the final diagnosis. Recent studies have shown that the recurrence rate of ABC's is alarmingly high, hence, regular follow ups with examination previously treated sites should be performed.[1,2] ABC is hemmed in by several misconceptions due to the scarcity of documented cases and varied clinicopathology, making it extremely controversial.

ABC is classified into three types as conventional or vascular (95%), solid type (5%) and mixed variant with features of both vascular and solid types. The case presented above is a vascular type of ABC [3].

Immediate reconstruction of the defect with autogenous graft is recommended in cases of aesthetic deformity, high risk for fractures and loss of mandibular continuity. In this case PRF was used for the bone regeneration, which exhibited excellent result of bone formation in the defect site.

ABC can occur in young individuals (below 20 years) with no sex predilection; however, incidence is fewer in the maxilla than the mandible (1:3) and its occurrence is seen predominantly in the body, ramus, and angle of the mandible [3,4].

Conclusion

Aneurysmal bone cysts are tumours that exhibit local aggressiveness and occasional rapid growth, despite being non-neoplastic in nature. Due to the diverse radiological characteristics of aneurysmal bone cysts, which can resemble various lesions, histopathological analysis is essential for final diagnosis.

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