**Introduction**

Ossifying fibroma is a rare tumor entity and a well-demarcated benign fibro-osseous lesion that is composed of fibrous tissue, metaplastic bone and varying amounts of mineralized material. The ossifying fibromas have been grouped into conventional and juvenile clinicopathologic types. Conventional ossifying fibromas are slow growing and tend to occur in the third-fourth decades of life. The juvenile form is clinically more aggressive, invasive and has a high recurrence rate. Hence, it is a clinically significant lesion which requires aggressive therapy and post-operative follow-up.

**Case Report**

An 18-year-old female visited the dental clinic with a chief complaint of swelling and pain on the right side of the jaw for the past 2 months. On extra oral examination, a diffuse ill-defined swelling was seen involving the right body of the mandible causing facial asymmetry [Figure 1].

No lymph nodes were palpable. Her medical history was non-contributory.

**Figure 1:** A diffuse ill-defined swelling involving the right body of the mandible
a multilocular lesion in the body of the right mandible causing pathologic fracture of the inferior border. The margins appeared scalloped, and resorption of roots was seen in relation to teeth 46, 47 and 48 [Figure 2].

A provisional diagnosis of ameloblastoma was arrived at. A differential diagnosis of keratocystic odontogenic tumor was established.

Microscopic examination of the incisal biopsy revealed a highly cellular stroma consisting of plump, uniform, stellate, and spindle-shaped cells arranged in the form of whorls [Figure 3]. Spherical calcifications were seen distributed throughout the stroma that demonstrated a basophilic center and peripheral brush border [Figure 4]. A final diagnosis of psammomatoid juvenile ossifying fibroma (PJOF) was concluded.

On surgical exploration, the lesion was fibrous in consistency and poorly demarcated from the adjacent normal bone. Due to the high recurrence rate of JOF, the patient was treated aggressively by a wide segmental resection; a mandibular reconstruction plate was placed [Figure 5]. The patient was discharged uneventfully. There was no evidence of recurrence of the tumor 4 years after surgery, and the patient is continuing to receive routine follow-up.

**Discussion**

The PJOF is an aggressive lesion. The maldevelopment of the basal generative mechanism essential for root formation appears to play a role in the pathogenesis of these jaw lesions. The developing tooth can either be missing, displaced or remain unerupted.[2]

The age at diagnosis varies markedly with cases being reported in infants less than 6 months to adults over 70 years of age. Although both trabecular and psammomatoid variants reveal similar radiographic features and growth patterns, the trabecular form is, usually, diagnosed in younger patients. The mean age of trabecular JOFs is approximately 11 years, whereas the age of patients diagnosed with the psammomatoid variant approaches 22 years. Both patterns occur in either jaw but reveal a maxillary predominance.

PJOF is a variant of JOF that has a predilection for sites such as the sinonasal tract, orbital, frontal and ethmoid bones. The lesion has the potential to be aggressive, proliferative and invasive in nature. A recurrence rate as high as 30-58% has been reported.[3]

A feature that helps differentiate trabecular JOF from psammomatoid JOF is its location, with the psammomatoid variant frequently appearing outside the jaws with over 70% arising in the orbital, frontal bones and paranasal sinuses whereas

**Figure 2**: Orthopantomogram showing a large lesion in the body of the mandible causing pathologic fracture

**Figure 3**: Photomicrograph showing a highly cellular stroma consisting of plump, uniform, stellate, and spindle shaped cells arranged in the form of whorls (H and E, ×100)

**Figure 4**: Photomicrograph section showing Psammoma-Like bodies, with a central basophilic area and a peripheral eosinophilic fringe or peripheral brush border (H and E, ×400 magnification)

**Figure 5**: Post-operative orthopantomogram with mandibular reconstruction plate
the trabecular JOF occurs mainly in the maxilla. Mandibular and extra cranial involvement is rare. Only 10% of cases involve the mandible. The present case occurred in the body of the mandible.

Based on the site, symptoms such as paresthesia, pain, sinusitis, malocclusion and proptosis can also occur. Malignant transformation has been reported to develop in lesions that, usually, recur.

Although many of these tumors are initially discovered upon routine radiographic examination cortical expansion may result in clinically detectable facial enlargement.

Radiographically a well-defined, osteolytic or mixed lesion with a cystic appearance is observed, as seen in the present case. Sclerotic changes in the lesion may produce a ground-glass appearance. The lesions may range in size from 2 to 8 cm in diameter. In tumors arising near the cribiform plate, intracranial extension is a common finding because of the circumscribed growth pattern of the tumor. The frontal lobe is typically elevated without any associated neurologic signs. Root displacement is common, and resorption is rare. Both expansion as well as perforation is observed as seen in the present case.

Histologically both trabecular and psammomatoid patterns are nonencapsulated with demarcation from the adjacent bone. A tumor consists of a highly cellular and dense fibrous connective tissue stroma. The mineralized component in the two patterns is very different. The trabecular variant shows irregular trabeculae of cellular osteoid with plump and irregular osteocytes. In contrast the psammomatoid pattern forms concentric lamellated and spherical ossicles that vary in size and demonstrate a central basophilic area with peripheral eosinophilic rims forming brush borders that blend into the adjacent stroma. Golg (1949) was the first to term these spherical calcified structures. The term is derived from the Greek word psammos meaning “sand.” The psammoma bodies appear as numerous small, round ossicles or called as “psammomatoid” bodies embedded in a cellular fibrous stroma. The ossicles are mineralized collagenous foci that vary from small, smoothly contoured round-to-oval patterns to larger, irregular shapes, with concentric layering.

The treatment for smaller lesions is complete local excision or thorough curettage. For rapidly growing lesions, a wider resection may be required. The present case was treated by wide resection, and a mandibular reconstruction was planned. No recurrence has been observed in the present case 4 years after surgery.

**Conclusion**

Even though, the ossifying fibroma is a benign lesion, the PJOF has aggressive clinical behavior along with a very strong tendency to recur. JOF as a progressively growing lesion can attain enormous sizes with resultant deformity if left untreated. Hence, radical surgery is necessary with close follow-up. Early diagnosis and treatment can aid in better prognosis and lesser morbidity.

**References**