

# Four Cases of Ossifying Fibromas: A Rural Medical College Hospital Experience

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## Abstract

**Background:** Ossifying fibroma is an uncommon tumor of the craniofacial skeleton presenting in several variant histopathological subtypes. Ossifying fibroma is a benign fibro-osseous lesion that commonly involves the maxilla.<sup>1</sup> Ossifying fibromas occur predominantly in women, frequently during the 3rd and 4th decades of life.<sup>1</sup> The overlapping clinical and histopathological features of these subtypes have led to diagnostic dilemma and confusion.<sup>1</sup> Complete excision of this tumor has become a necessity since it is notorious for recurrence.<sup>1</sup>

**Aims:** To study and compare the clinical profiles of various types of ossifying fibroma and also the surgical approaches to the tumor. To discuss the diagnostic difficulties and controversies associated with the tumor.

**Setting:** Medical college referral hospital.

**Design:** Case reports of 4 patients presenting to our medical college OPD.

**Methods:** Planned surgical excision based on criteria.

**Results:** Four cases of different types of ossifying fibroma were successfully treated by various surgical approaches. 42 papers related to diagnostic and treatment aspects of ossifying fibroma were studied.

**Conclusion:** The diagnostic dilemma of ossifying fibroma can be overcome with a combination of clinical, radiological and pathological criteria. Complete surgical excision of the tumor is possible when surgery is based on preplanned criteria. Combination of 2 or more surgical approaches may be necessary in many cases in order to ensure complete clearance and prevent recurrence of the tumor.

**Keywords:** Ossifying fibroma fibrous dysplasia, lateral maxillectomy.

## INTRODUCTION

Ossifying fibroma is a destructive, deforming, slow growing, benign fibro-osseous tumor that can occur almost anywhere in the facial skeleton.<sup>2,3</sup> This uncommon tumor can present a diagnostic dilemma for the clinician and the pathologist, owing to overlapping clinical and histomorphologic features.<sup>2</sup> Many synonymous nomenclatures exist for a single entity and the controversy in classification and staging of the subtypes in the literature has added to the confusion.<sup>3</sup>

Hence there is a need to highlight the points of controversy existing for this tumor so that they could be avoided through a consensus in future.<sup>3</sup> The tumor can produce sinus obstruction, infection, facial deformity, proptosis and intracranial complications, even though it can remain asymptomatic in the early stage.<sup>3</sup> Therefore, the tumor needs to be excised completely in order to prevent recurrence.<sup>3</sup> Complete excision is dependent on the correct surgical approach.<sup>3</sup>

Ossifying fibromas may have features that are characteristic of fibrous dysplasias (e.g., woven bone without osteoblastic rimming), and fibrous dysplasias may

have histologic features that are consistent with ossifying fibromas (e.g. lamellar and osteoblastic rimming).<sup>4</sup> Therefore, imaging correlation is important; otherwise such lesions are designated as benign fibro-osseous lesions.<sup>4</sup>

Orbital and maxillary involvement is generally asymptomatic, but associated pain or swelling may be present.<sup>5</sup> These lesions are occasionally identified as an incidental finding.<sup>5</sup>

Fibro-osseous lesions of craniofacial skeleton are rare and are thought to be the result of replacement of normal bony architecture by fibrous tissues, which may mineralize in various forms like woven, lamellae bone, or cementum and include a broad spectrum of distinct entities with different clinical presentations and microscopic appearances.<sup>2</sup>

Microscopically, ossifying fibroma consists of irregular spicules of trabecular bone lined by osteoblasts.<sup>6</sup> These osteoblasts produce a rim of lamellar bone around centers of woven bone.<sup>6</sup> Ossifying fibroma stains positive for cytokeratin.<sup>6</sup> The question has been raised if ossifying fibroma is a variant of fibrous dysplasia or a true neoplasm.<sup>6</sup>

## OBSERVATIONS

All the patients in our study group are females (100%). The average age among the study group is 40.75 years. The average duration of symptoms in the study group is 8.75 weeks.

All cases were unilateral lesions with left maxillary involvement in 75% of cases and right maxillary involvement in 25% cases. Complete excision by sublabial approach was done in 3 cases with only anterior wall involvement and lateral maxillectomy was done in one case with tumor extending to lateral wall of maxilla.

The appropriate treatment for a benign fibro-osseous lesion, irrespective of its aggressive nature includes either curettage or enucleation of the lesion, until the healthy bony margins are reached.<sup>6,7</sup>

## DISCUSSION

Ossifying fibromas occur predominantly in women, frequently during the third and fourth decades of life.<sup>5</sup> All the patients in our study group lie in 3rd and 4th decade only.

Included in the group of benign fibro-osseous lesions are fibrous dysplasias and ossifying fibromas. Although, these two lesions are considered to be separate entities, they may not be distinguishable on histopathologic evaluation.

The lesion's CT features depend on its stage of development and the amount of mineralized matrix that is present.<sup>1,4</sup> Lesions generally appear as well-circumscribed masses with smooth margins.<sup>1,4</sup>

In its early stage, a lesion may appear as a solitary radiolucent cyst-like mass with minimal or absent internal calcified components; in its late stage, the lesion is radiodense.<sup>1,5</sup>

On MRI, ossifying fibromas appear to be heterogeneous.<sup>8</sup> They reflect intermediate signal intensity on T1-weighted imaging and hypointense signal intensity on T2-weighted imaging with moderate enhancement following intravenous administration of contrast on T1-weighted imaging.<sup>8</sup>

## CONCLUSIONS

Ossifying fibroma is an uncommon tumor of the craniofacial skeleton presenting in several variant histopathological subtypes.<sup>9</sup>

The overlapping clinical and histopathological features of these subtypes have led to diagnostic dilemma and confusion.<sup>9</sup> Complete excision of this tumor has become a necessity since it is notorious for recurrence.<sup>9</sup>

Ossifying fibroma has a distinctive radiologic picture.<sup>10</sup> This lytic lesion occurs in the anterior cortex of the diaphysis or metaphysis of the tibia and often causes anterior-posterior bowing.<sup>10</sup>

This well-circumscribed tumor has a multiloculated appearance and causes distortion of the thin cortex.<sup>10</sup> Ossifying fibromas have increased uptake on bone scan.<sup>10</sup>

The radiologic differential includes adamantinoma, fibrous dysplasia, nonossifying fibroma and osteoblastoma.<sup>10</sup>

The overall prognosis with most types of ossifying fibroma appears to be good.<sup>11</sup> Despite their tendency for local invasion and recurrence, there are no reported instances of metastatic disease with the exception of certain subtypes of ossifying fibromyxoid tumor.<sup>11,12</sup>

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