

## Prosthetic Rehabilitation for a Rare Case of Fibrous Dysplasia

Dayanand Huddar<sup>1</sup>, Sandhyarani B<sup>2</sup>, Sanjay Byakodi<sup>3</sup>, Rohit Dhole<sup>1</sup>

<sup>1,2</sup> (Department of Prosthodontics, Bharati Vidyapeeth Dental College and Hospital/ Bharati Vidyapeeth deemed University, Sangli, India).

<sup>3</sup> (Department of Oral and Maxillofacial surgery, Bharati Vidyapeeth Dental College and Hospital/ Bharati Vidyapeeth deemed University, Sangli, India).

---

**Abstract:** Fibrous dysplasia is a skeletal developmental anomaly of the bone-forming mesenchyme that manifests as a defect in osteoblastic differentiation and maturation. Virtually any bone in the body can be affected. It is a nonhereditary disorder of unknown cause. It may extend from monostotic lesion to a polystotic involvement. Hence here is a case where-in maxilla is involved with missing teeth and thus after surgical shaving and contouring, cast partial denture was fabricated for the good esthetic appearance in a 45 year old male patient.

**Keywords:** Fibrous Dysplasia, Cast partial denture, Monostotic type, Polystotic, Shaving.

---

### I. Introduction

Fibrous dysplasia is defined as a slowly progressive, expansile benign bony disorder of unknown etiology in which the normal bone is replaced by abnormal fibrous osseous tissue. <sup>(1)</sup> Lesion was first described by Lichtenstein in 1938. <sup>(2)</sup> It accounts for about 2% of all bone tumors. <sup>(3)</sup> Fibrous dysplasia can affect any bone and can be divided into four subtypes, although there is some overlap: (i). monostotic type, in which only one bone is involved, (ii) polystotic type where in multiple bones are involved, (iii) craniofacial fibrous dysplasia where skull and facial bones alone are involved and (iv) cherubism where only mandible and maxilla alone are involved, however it is not considered as true fibrous dysplasia. <sup>(4)</sup>

Fibrous dysplasia appears in late childhood and an average age of onset is considered to be 10 years. <sup>(5)</sup> Patients with craniofacial dysplasia will have facial asymmetry especially palatal asymmetry and missing teeth. Maxilla is more often involved than mandible. Rarely both the jaws are involved bilaterally. Presence of fibrous dysplasia can affect the tooth development and function. <sup>(5)</sup>

This paper reports a case of fibrous dysplasia involving maxilla, wherein patient's complain of missing teeth has been attended with both surgical correction and Prosthetic rehabilitation, emphasizing more on multidisciplinary approach.

### II. Case Reports

A 45 year old male patient reported with the chief complaint of missing upper left back teeth. No much contribution was there from his family, dental and medical histories. On intra-oral examination, patient had bulbous elevation in edentulous area and the teeth missing were 22, 23, 24, 25, 26, and 27. (Fig-1) Patient gives the history of increase in swelling over the years. Diagnostic impressions were made using irreversible hydrocolloid impression material and then the patient was sent for biopsy. (Fig-2) An excisional biopsy was planned and thus a template (Fig-2) was fabricated before biopsy which was useful for bony contouring. An excisional biopsy was done under local anesthesia and specimen was sent to oral pathology department for further investigations. (Fig-3) It was then revealed that it is a monostotic fibrous dysplasia. Patient was recalled after a month for follow-up. Primary impressions were made using irreversible hydrocolloid impression material. Impression was poured with dental stone. After surveying the diagnostic cast, rest seat was prepared for cast partial denture fabrication. After this again impressions were taken using elastomeric impression material and poured with die stone. Designing was done for cast partial denture. Metal frame work was fabricated and try in was done on patient's mouth. (Fig-4) Jaw relation was done and then transferred to articulator. Teeth arrangement was done and after try-in it was sent for acrylicization. Finally after processing cast partial denture insertion was done. (Fig-5) Patient was satisfied with his appearance and appreciated the multidisciplinary approach for his missing teeth. Patient is under continuous follow-up.

III. Figures And Tables



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

#### **IV. Discussion**

Fibrous dysplasia is a developmental anomaly in which normal bone is replaced by fibrous connective tissue. As the lesion matures, the fibrous connective tissue is replaced with irregularly patterned trabecular bone and hence is classified as a benign fibro-osseous lesion. <sup>(6)</sup> Fibrous dysplasia constitutes about 70-80% of fibrous dysplasia patients, mostly seen in 2<sup>nd</sup> and 3<sup>rd</sup> decade and it occurs both in children and adults. <sup>(7)</sup>

Fibrous dysplasia is considered as a benign process, probably based on a post zygomatic mutation in the guanine –nucleotide-binding protein –coding gene which is linked to adenylyl cyclase. This results in an increased cAMP concentration, thereby enhancing certain functions of the affected cells and thus abnormalities of osteoblast differentiation. These osteoblasts produce abnormal bone with typical trabeculae of woven bone with emanating collagen fibres. <sup>(7)</sup>

Clinical symptoms arise from the expansion of the bone which compresses adjacent structures. <sup>(8)</sup> In monostotic type the commonly involved bones are calvaria, skull base, zygoma, maxilla and mandible. <sup>(7)</sup> Maxilla is more commonly involved than mandible, especially molar and bicuspid area than incisor region. <sup>(5)</sup> Progression of lesion may cause visual disturbances, proptosis, orbital dystopia, nasal malfunction, dental problems, and sensory disturbances in affected region. <sup>(7)</sup>

There are no uniformly accepted guidelines for the treatment of this disease, but the three general approaches involve monitoring, medical management or surgery. <sup>(1)</sup> Monitoring is done for disease activity and progression. No medical treatment is available to cure or halt the progression of the disease. <sup>(1)</sup> Radiotherapy is contraindicated because of possibility of subsequent development of radiation –induced sarcomas. <sup>(9)</sup> Surgery is recommended as the modality of treatment to relieve the intractable pain and skeletal deformity. The type of surgery varies from shaving and contouring of bone to radical surgery. <sup>(8)</sup> However surgery is delayed in children if possible, until puberty when the lesion tends to become static. <sup>(9)</sup>

In the present case, age of the patient was suitable for surgery and further prosthetic rehabilitation was done for the missing teeth. However prosthetic appliances have to be repeated if there is recurrence of the lesion. Malignant transformation to osteogenic sarcoma is rare, although rapid, expansile growth and surrounding destruction may frequently give a false impression of malignancy. Hence the patient is under continuous observation.

#### **V. Conclusion**

Fibrous dysplasia has the potential to cause significant cosmetic and functional disturbances and thus it is the most common cause for the patient to visit a dentist. Hence a thorough knowledge of lesion is must for a proper management.

#### **References**

- [1]. Shubha C, Sujatha GP, Ashok L. Deforming bone disease: monostotic fibrous dysplasia of maxilla *Int.J.Curr.Microbiol.App.Sci* 2014; 3(8): 358-364.
- [2]. Canitez G, Gunduz K, Ozden B, Kose HI. Monostotic fibrous dysplasia: a case report. *Dentistry* 2012; 3:2.
- [3]. Ghambir G, Batra R, Sethi N, Bansal A. A rare case of recurrent fibrous dysplasia in an elderly patient, with a brief review of literature of monostotic fibrous dysplasia of maxilla. *Indian Journal of Dental Sciences* 2011;5(3).
- [4]. Maramattom BV. Leontiasis ossea and post traumatic cervical cord contusion in polyostotic fibrous dysplasia. *Head & Face Medicine*. 2006; 2 (1): 24.
- [5]. Subramaniam AV, Subramaniam T, Sable D. *International Journal of Biological & Pharmaceutical Research*. 2014; 5(9): 768-773.
- [6]. Singer SR, Mupparapu M, Rinaggio J. Clinical and radiographic features of chronic monostotic fibrous dysplasia of the mandible *J Can Dent Assoc* 2004; 70(8):548–52.
- [7]. Assaf AT, Benecke AW, Riecke B, Zustin J, Andreas W, Fuhrmann, Heiland M a, Reinhard E, et al. Craniofacial fibrous dysplasia (CFD) of the maxilla in an 11-year old boy: A case report. *Journal of Cranio-Maxillo-Facial Surgery* 40 (2012) 788-792.
- [8]. Cherkaoui A, Nawar O, Fouad I, Najib B, N El Alami. Prosthetic reconstruction after surgical resection of fibrous dysplasia of the maxillary and palatine bone *West Indian med. j.* 2012; 61:3.
- [9]. Ruksujarit T, Kitsahawong S, Thongdee P. Multidisciplinary approach to the management of fibrous dysplasia of the maxilla: A case report. *KDJ, Jan-June 2004; 17(1): 49-60.*