



ISSN Print: 2394-7489  
ISSN Online: 2394-7497  
IJADS 2019; 5(2): 473-475  
© 2019 IJADS  
www.oraljournal.com  
Received: 07-02-2019  
Accepted: 09-03-2019

**Dr. Rashidat-ul-Khairat**  
PG, Department of Periodontics,  
Government Dental College and  
Hospital, Srinagar, Jammu and  
Kashmir, India

**Dr. Suhail Majid Jan**  
Professor and Head, Department  
of Periodontics, Government  
Dental College and Hospital,  
Srinagar, Jammu and Kashmir,  
India

**Dr. Roobal Behal**  
Assistant Professor, Department  
of Periodontics, Government  
Dental College and Hospital,  
Srinagar, Jammu and Kashmir,  
India

## Treatment of intrabony bone defect with xenograft material: A case report

**Dr. Rashidat-ul-Khairat, Dr. Suhail Majid Jan and Dr. Roobal Behal**

### Abstract

The periodontal therapy is aimed in regeneration or restitution of lost periodontal tissues destroyed by periodontal disease. There are different treatment modalities used for regeneration of the tissues. Among them different grafting material which include autografts, allografts, xenografts and alloplasts have been used and clinically applied. This article presents a case report on periodontal regeneration using bovine osseous xenograft in treatment of a periodontal intra-bony defect in relation to upper lateral incisor.

**Keywords:** Periodontal regeneration, Xenograft material, intrabony defect, open flap debridement

### Introduction

The main aim of periodontal treatment is the maintenance of the natural dentition in health and comfortable function. Regeneration of periodontal tissue that has been lost as a result of disease is the ultimate objective of periodontal therapy. Regeneration can be defined as the reproduction or reformation of organs or tissue that have been lost or injured as a result of a wound or infection. Regenerative periodontal procedure involves the creation of new alveolar bone, cementum, and periodontal ligament [1]. Periodontal regeneration can be achieved by a variety of non-surgical and surgical therapies. Treatments for intrabony defects include: open flap debridement alone (OFD); OFD plus demineralized freeze-dried bone allograft (DFDBA), freeze-dried bone allografts (FDBA), or autogenous bone; and G uided tissue regeneration (GTR) alone or with osseous grafts [2].

Bone replacement grafts are the most widely used treatment options for the correction of periodontal osseous defects [3]. Bone replacement grafts include autografts, allografts, xenografts and alloplasts. Xenografts used in the treatment of infrabony defects can be both bovine bone and natural coral, these are also referred to as an anorganic bone, since proprietary processes are suggested to remove all cells and proteinaceous material, leaving behind an inert absorbable bone scaffolding upon which revascularization, osteoblast migration, and woven bone formation supposedly occur [4].

In this report, we present the clinical and radiographic changes of a patient using osseous xenograft as a grafting material in the treatment of periodontal intrabony defect in relation to upper left incisor.

### Case report

A 17 year female patient came to the department of periodontics, govt dental college and hospital, Srinagar with the complaint of mobility and difficulty in chewing in upper front tooth region. On examination there was a periodontal pocket of 9 mm -10 mm on mesial aspect of 22 with grade I mobility. The clinical presentation included reddish pink, swollen gingiva with bleeding on probing. Radiograph showed infrabony defects on mesial aspect to 22. The treatment plan included phase I therapy (scaling and root planning) followed by an open flap debridement in 12, 22 and 23 region and utilization of bovine osseous xenograft to fill the osseous defect followed by suturing and periodontal dressing for 14 days.

Local anesthesia (2% lidocaine with 1:80000 adrenaline) was administered and intrasulcular incisions were given involving 11 to 24 regions and mucoperiosteal flaps were reflected. Vertical incisions were avoided. A thorough debridement was carried out and after complete removal of granulation tissue was done. The required quantity of the bone graft material was transferred from the vial to the dappen dish and mixed with normal saline.

### Correspondence

**Dr. Rashidat-ul-Khairat**  
PG, Department of Periodontics,  
Government Dental College and  
Hospital, Srinagar, Jammu and  
Kashmir, India

When it became a cohesive mass, it was delivered in small increments into the defect, taking care not to overfill it. The mucoperiosteal flaps were repositioned and secured in place by interrupted suture using the black braided (4-0) silk.

Then the patient was prescribed systemic antibiotic (Amoxicillin 500 mg) for 5 days and Diclofenac sodium 50 mg thrice daily for three days with 0.2% chlorhexidine rinses twice daily for 2 weeks. At every new visit, oral hygiene instructions were reinforced. The patient was evaluated clinically and radiographically at nine months, postoperatively.

**Discussion**

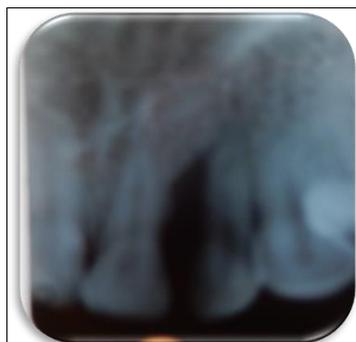
The aim of this case report was to present the use of xenograft in the management of intra osseous defects with excellent results. Periodontal pockets associated with intrabony lesions have been shown to be at higher risk of disease progression in patients who do not receive systematic periodontal therapy [5]. Intrabony pocket or defect is periodontal pocket in which the bottom is apical to the level of the adjacent alveolar bone [6]. The periodontal regeneration in intrabony defect is influenced by many factors related to the patient such as smoking, bony morphology, root topography, gingival biotype, gingival recession, surgical technique, and early supportive periodontal care [7, 8]. Bone replacement grafts used for the regeneration of lost periodontal tissues include autografts, allografts, xenografts, and alloplastic bone substitutes with proved clinical outcome. The treatment plan should include oral hygiene instructions and reinforcement and evaluation of the patient's plaque control; supra- and subgingival scaling and root planing to remove microbial plaque and calculus; control of other local factors; occlusal therapy as necessary; periodontal surgery as necessary; and periodontal maintenance [9].

In this case the infrabony defect was present around the left lateral incisor and the bovine osseous graft was used to fill the defects.

**Bone defect filled with Osseo graft**



Pre-Op Probing



Pre-Op Radiograph



Intrasulcular Incision Given



Flap Reflection



After Flap Reflection



Dreganulation



Defect Filled With Xenograft



6- Month Post-Op Radiograph



9- Month Post- Op Radiograph

- humans. *Clin Oral Implants Res.* 2000; 11:217-229.
9. Singh S. Management of infrabony defects in mandibular molars in a patient with generalized aggressive periodontitis using autogenous bone graft from maxillary tuberosity. *J Indian Soc Periodontol.* 2010; 14(1):53-56.

### Conclusion

It can be concluded from this case report that the xenogenic bone graft material can be beneficial for the treatment of periodontal intrabony defects. However further studies with larger sample size, and longer follow-ups are required.

### References

1. Saimbi CS, Gautam A, Khan MA, Nandlal. Periosteum as a barrier membrane in the treatment of intrabony defect: A new technique. *J Indian Soc Periodontol.* 2014; 18(3):331-335.
2. Ahmad R, Kidwai SM, Shrivastav P, Singh A. Periodontal Regeneration in Clinical Practice: A Case Report. *Journal of Medical and Dental Science Research.* 2016; 3(10):55-58.
3. Reynolds M, Aichelmann-Reidy W, Branch Mays G. The efficacy of bone replacement grafts in the treatment of periodontal osseous defects: A systematic review. *Ann Periodontol.* 2003; 1:227-65.
4. Bashir B, Jan SM, Behal R, Mushtaq A. Clinical Evaluation of Regenerative Potential of Xenogenic Bone Grafts in The Treatment of Periodontal Intrabony Defects. *Ann. Int. Med. Den. Res.* 2019; 5(3):DE20-DE23.
5. Papananou PN, Wennstrom JL. The angular bony defect as indicator of further alveolar bone loss. *J Clin Periodontol.* 1991; 18:317-22.
6. Keane M. *Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, Seventh Edition, 2003.*
7. Rodriguez A, Anastassov GE, Lee H, Buchbinder D, Wettan H. Maxillary sinus augmentation with deproteinated bovine bone and platelet rich plasma with simultaneous insertion of endosseous implants. *J Oral Maxillofac Surg.* 2003; 61:157-163.
8. Yildirim M, Spiekermann H, Biesterfeld S, Edelhoff D. Maxillary sinus augmentation using xenogenic bone substitute material Bio-Oss in combination with venous blood. A histologic and histomorphometric study in