

Peri-Implantitis Management - Surgical Approach: A Case Report

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ABSTRACT

Background: Dental implant supported restorations are being increasingly used in dentistry. Although high survival rate of osseointegrated dental implants is well documented, complications with these treatment options also arise due to improper patient selection and inadequate treatment planning combined with poor follow-up care leading to Peri-implantitis and eventually loss of implant. Prevalence rates of these complications have been reported to be as high as 56%. Various treatment options that have been reported to treat the complications include nonsurgical therapy, the use of locally delivered and systemically delivered antibiotics, resective and regenerative surgical protocols aimed at regenerating the lost bone and soft tissue around the implants. The purpose of the present case report is to describe the surgical management of a peri-implantitis lesion associated with a regenerative approach.

Keywords: Periimplantitis, Implantology, Periodontal disease.

INTRODUCTION

Dental implants are the most preferred option for replacement of missing teeth over the last few decades which are considered as nearest equivalent replacement for the natural tooth, and are therefore a useful addition in the management of patients who have missing teeth because of disease, trauma or developmental anomalies. In many cases dental implants have been reported to achieve long-term success¹, they are not immune from complications associated with improper treatment planning, surgical and prosthetic execution, material failure, and maintenance leading to implant failure and peri implant diseases. The most common problems associated with Periimplant region are Peri-implant mucositis and Peri implantitis. Peri-implant mucositis is a disease that involves inflammatory lesions of the mucosa that surrounds implants, without supporting bone loss^{2,3}. Assessment of peri implant mucositis always include assessment of bleeding following probing and a pocket with a

probing depth of < 4 mm. Peri-implantitis represents a clinical condition that includes the presence of an inflammatory lesion in peri implant mucosa and loss of peri-implant bone. The diagnosis of peri implantitis requires detection of both bleeding on probing, pocket with a probing depth of > 4 mm, suppuration, bone loss on radiographs or after flap refection^{4,5,6}.

The choice of treatment strategy is based on the diagnosis and severity of periimplant lesion. However, the treatment strategies must include mechanical cleaning (infection control) procedures. Several clinical protocols for treatment have been proposed, along with mechanical debridement, like the use of antiseptics and local or systemic antibiotics^{7,8}, surgical access^{9,10}, and regenerative^{11,12,13} or resective surgical procedures^{14,15}. Periimplant mucositis and incipient forms of peri implantitis require less extensive measures than advanced peri implantitis lesions with severe bone loss. In cases with severe bone

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loss surgical intervention may be indicated and the primary objective of surgical intervention is to allow the surgeon to instrument the implant surface and to perform debridement and decontamination followed by regenerative procedures using various grafting techniques. This article discusses about a case of peri implantitis managed successfully utilizing a regenerative surgical therapy.



Figure 1: Preoperative site.



Figure 2: Site showing preoperative Probing pocket depth.

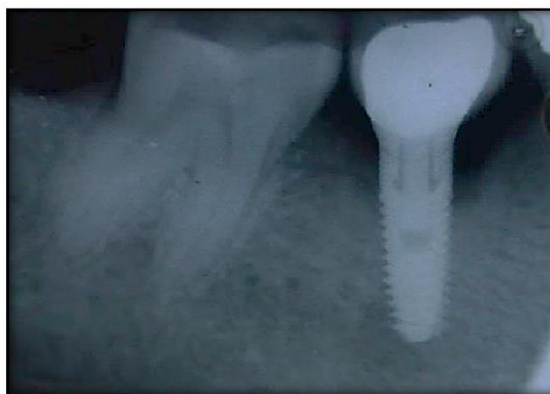


Figure 3: Preoperative radiograph revealing crestal bone loss.

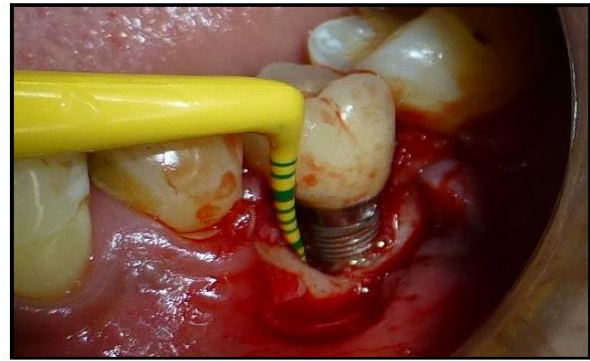


Figure 4: Reflection of mucoperiosteal flap.

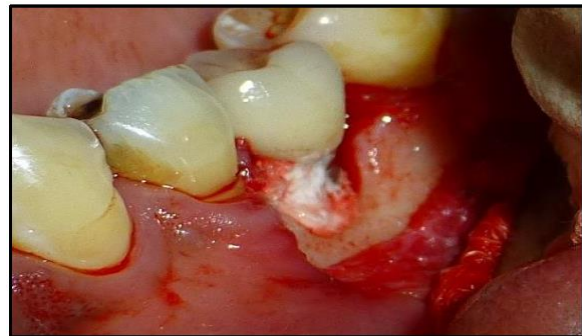


Figure 5: Placement of Osseograft.



Figure 6: Sutures placed.



Figure 7: Periodontal dressing placed.



Figure 8: Surgical site 1 week post operative.



Figure 9: Reduction in Probing depth 6 months post operative.



Figure 10: Radiograph revealing bone regeneration.

CASE REPORT

A 32yr old male patient reported to our dental office with a complaint of dull aching pain in left side of mandibular posterior region since a week. After periodontal examination the periimplant region showed inflamed gingival margin (Figure 1) with a probing pocket depth of 7 mm mesiobuccally and 6mm distobuccally (Figure 2), accompanied by bleeding on probing. The radiographic examination

revealed 3mm of crestal bone loss. (Figure 3). A surgical intervention was planned to access the bone defect and allow mechanical debridement of the infected implant surface, for which 2% lignocaine with 1:1,00,000 adrenaline was used to anesthetize the surgical site.

A buccal crevicular incision and 2 vertical releasing incisions at line angles of adjacent teeth were given with No.15c blade followed by reflection of a mucoperiosteal flap along with the interdental papilla to appreciate the defect site (Figure 4). After reflection, threads of the coronal part of the fixture are found to be exposed with a crater like intraosseous defect on mesial site measuring 7mm.

The implant surface was thoroughly debrided of calculus and granulation tissue with plastic curettes and thorough irrigation of the site with physiological sterile saline was done. A resorbable collagen membrane was pre-sutured followed by placement of Osseograft (Figure 5). The site was sutured with a non-resorbable silk suture 3/0 (Figure 6) and periodontal dressing was placed (Figure 7).

The patient received antibiotic therapy (500 mg of amoxicillin 3 times daily) for 7 days and was also advised not to brush the surgical site and to rinse with 0.12% chlorhexidine solution for 2 weeks to prevent postsurgical infection caused by plaque accumulation. The standard post-operative instructions were given to patient and recalled after 7 days for suture removal. On the day of follow up sutures were removed and povidone iodine irrigation was done (Figure 8).

Six months postoperatively, significant reduction in probing depth was observed(Figure 9). Intra oral radiographs taken 6 months post op showed good bone regeneration. (Figure 10)

DISCUSSION

Peri-implantitis is a complex multifactorial disease that shares many clinical characteristics and risk factors associated with periodontitis^{16,17}. As such, conventional treatment of peri-implantitis follows along the same lines of surgical treatment of periodontitis. In its most basic form, therapeutic intervention can be subdivided into two phases: (1) the anti-infective phase and (2) the regenerative

phase. Similar to treating periodontitis, the primary objective of the anti-infective phase is mechanical decontamination of the implant surface while the primary objective of the regenerative phase is to establish an environment that is conducive to reosseointegration.

Until now, no methodology/literature has been established as a gold standard approach for the treatment of peri-implantitis. For Peri-implantitis cases associated with probing depths > 6mm, regenerative surgical therapy yields good bone fill^{18,19,20}. (Schwarz et al. 2012). In the above mentioned case report it may be speculated that, Guided bone regeneration constituted a predictable way in treating the osseous defect with significant reduction in pocket depth from 7mm at the surgical entry to 2mm, 6 months postoperative. Long-term success of an implant depends on regular maintenance program. During maintenance phase, peri-implant tissue should be evaluated for inflammation. Radiographs will give the status of bone around implants.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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