Case Report

Innovative use of laterally positioned periosteal pedicle graft for coverage of gingivitis artefacta

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Abstract:
There are many etiological factors for nonplaque-induced gingival diseases, out of which physical trauma due to psychiatric reasons leading to self-in infliction is less studied upon. This case report presents one such case which has been successfully treated stepwise where psychological counseling was done to restrain from habit followed by using an innovative laterally positioned periosteal pedicle graft for dehiscence coverage.

Key words: Gingival recession, gingivitis artefacta, periosteum

INTRODUCTION

A habit may be defined as a frequent or constant practice or an acquired tendency which has become fixed due to frequent repetition. These habits are broadly classified as obsessive and nonobsessive disorders, which may be intentional, unintentional, or either functional habits or self-inflicting masochistic habits.[1] Many theories have been put forward for the development of oral habits which includes either due to a learned pattern due to neuromuscular immaturities leading to an unconscious repetitive pattern or due to deep-seated emotional/psychological or psychosexual behavior wherein gratification is derived by self-abuse (pain upon oneself).[2,3]

Gingivitis artefacta is a type of periodontal disease caused by self-inflicting injuries to gingival tissues either due to scratching or “picking” of gingiva with finger nails or any foreign object leading to denudation of soft tissue and bone in extreme cases of mutilation.[3] The important factor lies in the fact that although typical features of oral self-inflicting behaviors (SIB) are well documented in literature, they often present a difficult diagnostic problem for dentist and psychiatrist since even when diagnosed their treatment and management modalities are not clearly understood. The purpose of the present article is to report a case of gingivitis artefacta due to anxiety and stress leading to self-inflicted gingival injury leading to complete dehiscence of lower incisor due to nail picking in an adult male. This case also highlights the importance of psychotherapy and repeated counseling to restrain and break the habit and management of dehiscence with an innovative lateral periosteal pedicle graft (PPG) wherein the regenerative potential of periosteum was utilized for soft tissue coverage and to increase the width and thickness of attached gingiva to a maintainable level.

CASE REPORT

A 35-year-old male was referred from Department of Psychiatry who was diagnosed with anxiety and depression to the Department of Dental surgery, Armed Forces Medical College, Pune, for opinion and management of dehiscence due to masochistic habit. On electing the history of presenting illness, this patient was a known case of depression and anxiety due to socioeconomic and job insecurity. He was a migrant from Assam (North eastern part of India) in search of better prospect of life and was working as a daily wage construction employee and as a security guard in night. He reported to Department of Psychiatry 6 months back with the chief complaint of sleeplessness, insomnia, lethargy, and severe depression due to hopelessness from life. He had developed this factitious habit of gingival picking in the lower

Access this article online
Website: www.jisponline.com
DOI: 10.4103/jisp.jisp_319_16
Quick Response Code:

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Submission: 31-08-2016
Accepted: 29-08-2017

How to cite this article: Mechery R, Harshavardhana B, Rath SK, Dinakar N. Innovative use of laterally positioned periosteal pedicle graft for coverage of gingivitis artefacta. J Indian Soc Periodontol 2016;20:643-6.
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Figure 644

Wider. A partial thickness flap was raised carefully along the mesial and distal sides of tooth #31 [Figure 3]. The periosteum along the distal side was separated from the bone carefully with a periosteal elevator keeping the pedicle of 2 mm intact along the length of the root like a “wrap around” till the apex [Figure 4]. This PPG was secured and sutured to adjacent periosteum with resorbable sutures [Figure 5]. The partial thickness flap on the distal side was secured to its original position with 3-0 silk sutures whereas the partial thickness flap on mesial side was laterally slid so as to cover the “wrap around” periosteum over the defect completely. The distal end of the flap was sutured to periosteum which was exposed due to lateral sliding [Figure 6]. Periodontal pack and postoperative instructions were given to the patients. Patients were prescribed antibiotics and analgesics and instructed for oral rinsing with 0.2% chlorhexidine mouth wash twice daily. Both the sutures and pack were removed one week postoperatively followed by regular recall visit every 15 days for 2 months. At the end of nine months, there was uneventful healing with no pain, swelling, and infection. Postoperative length/width of recession was 3/4 mm with approximate soft tissue coverage of almost 70% [Figure 7]. The diagrammatic representation of the surgical procedure is given in Figure 8.

DISCUSSION

Dehiscences are isolated areas in which the root is denuded of soft tissue, bone, and periosteum which extends through the marginal bone. Such defects occur more often on the facial surface of anterior teeth than posteriors generally due to prominent root contour, malposition, and thin bony plate.

Although complete regeneration of soft and hard tissue over defects such as dehiscence is still an elusive goal, the quest for methods for predictable regeneration has led to new methods and techniques. One of such tissue engineering techniques with promising outcomes in the recent times is the use of periosteum. This case report is one of its kinds wherein the periosteum is utilized for esthetic soft tissue coverage over the dehiscence lost due to SIB. This graft utilizes the osteogenic potential of pericytes in the periosteum and its ability to differentiate into osteoprogenitor cells under appropriate condition or stimuli making it an ideal reservoir for regeneration due to its highly dense neuromicrovascular network, presence of fibroblasts, osteoblasts, and adult mesenchymal progenitor stem cells.

According to AAP classification (1999 World Workshop in Periodontics), the gingival diseases are broadly classified as plaque-induced and nonplaque-induced gingival lesions. Gingival diseases due to trauma either thermal, physical, or chemical injuries are grouped under a broad category of nonplaque-induced gingival lesions. Factitious physical injuries/masochistic habits or SIB to gingiva are group of nonplaque-induced gingival lesions.

Most accepted classification for oral SIB was suggested by Stewart and Kernohan in 1972 wherein Type A injuries are superimposed on a preexisting condition, such as herpetic lesions or localized gingival infection. Type B injuries are secondary to established habits, such as finger sucking or nail biting. Type C injuries have unknown or complex etiologies, which would include injuries due to psychological problems.
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Figure 1: Dehiscence till root tip apex #31

Figure 2: Intraoral periapical radiograph

Figure 3: Partial thickness flap

Figure 4: Laterally rotated periosteal pedicle graft

Figure 5: Resorbable suture in place

Figure 6: Flap sutured with silk

Figure 7: Postoperative 9 months

Figure 8: Diagrammatic representation of surgery
Such deliberate self-injury to gingiva is termed as gingivitis artefacta. Depending on extent and severity of the compulsive behavior, it can occur as major and minor form.[9]

Gingivitis artefacta, though not uncommon, but most published case reports mention different methods of self-infliction. Diagnosis and management of SIB are still a dilemma since there is no laid down management protocols. The aim of this article was to make aware of occurrence of such stress- and anxiety-related SIB in oral cavity to practicing medical and dental professionals. A timely diagnosis and team effort of periodontist and psychiatrist are needed for successful treatment of such cases with psychotherapeutic counseling with management of underlying stress followed by esthetic periodontal rehabilitation.

Although there are different treatment modalities advocated for recession coverage like free gingival autograft by Bjorn 1963; Sullivan and Atkin in 1968, Lateral sliding flap by Grupe and Warren, Coronally advanced flap by Bernimoullin in 1975 and the gold standard of recession coverage Subepithelial connective tissue graft by Raetzke, 1985; Langer and Langer, 1985. Very less attempts have been made for soft tissue coverage on dehiscence since the choice of technique depends on the defect size (length and width), localization of esthetic zone, and need for augmentation of attached gingiva. Use of periosteum with rich vascular plexus for soft tissue coverage over avascular cementum was advocated by Mahajan with predictable and viable graft.[9,10] Similarly, in our case, a modification of Mahajan’s technique was utilized to achieve maintainable soft tissue coverage with increased width and thickness of attached gingiva over the dehiscence.

Periodontitis-involved root surface altering can be done with root surface biomodification for formation of new connective tissues attachment. Removal of bacteria deposits, calculus, and endotoxins from cementum is generally considered essential for new attachment. The technique described even though looks feasible requires certain prerequisites such as good surgical dexterity, case selection, and periosteum firmly adherent to underlying bone. Postoperative healing in this case was uneventful with no recurrence of SIB. However, the question still remains is whether there is true regeneration of new cementum and bone beneath the soft tissue by the periosteum. Thus, histological studies are required to reveal the exact type of healing and attachment to the cementum and randomized controlled trials to compare it with already established soft tissue coverage techniques for regular use.

Self-inflicted masochistic habits in oral region are generally targeted toward gingiva and are stress and psychologically mediated. These gingival injuries can sometimes test the clinician’s diagnostic abilities. Psychiatrist or a counselor is important in the identification of triggering factors and to manage it by regular counseling to cope with stress. Behavior modification, positive reinforcement, and habit withdrawal with restraint are keys to manage such SIB. The outcome of this surgical technique suggests that laterally positioned PPG can achieve the goal of soft tissue coverage over dehiscence.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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