Case Report

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PERIODONTITIS IN A PSORIASIS PATIENT ITS ASSOCIATION, TREATMENT PROTOCOL AND PROGNOSIS: A CASE REPORT

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ABSTRACT:

Psoriasis is a disease that requires careful management to minimize the risks of complications arising from therapeutic procedures. Psoriasis is often related to oral or systemic adverse events after routine medical or dental treatment. From dental diseases, those affecting the periodontium are the once most related to psoriasis. Periodontal breakdown (periodontitis) is usually a consequence of inflammatory destruction as a result of poor oral hygiene and the subsequent accumulation of dental bacterial plaque or calculus present in children, adolescents and adults.

Dental techniques are usually invasive being likely to generate complications. Although there are many publications on dental aspects of psoriasis in the literature, few of them refer to involvement of procedures. Psoriasis and periodontitis are related in different issues able to generate uncertain outcomes. The scope of present case report is to assess the correlation between psoriasis and periodontal disease and gauge if the periodontal treatment can to contribute to the changes in psoriasis lesions.

Keywords: Psoriasis, periodontitis, Flap surgery.

INTRODUCTION:

Psoriasis is a chronic inflammatory dermatologic disease that may persist throughout life with periods of exacerbation and remission.[1] was first described around 35 A D and considered as one of the oldest recorded skin conditions.[2] It is papulosquamous disease defined by erythematous plaques characterized by pre-dominantly red skin patches, and inflamed, swollen skin lesions covered with silver-white scales.[3] Removal of the scales results in small pinpoint bleeding because of increased vascularity under focal areas of epidermal thinning.[1,4] Disease occurs most commonly in Caucasians, slightly less frequently in African-Americans and far less commonly among Asians. It affects 2-3% of population worldwide. Its prevalence in India ranges from 0.5 to 5%. Two peaks of age onset are seen, early onset between 15-25 years and late onset between 57-60 years.[5,6] The cutaneous lesions occurs majorly on the extensor surfaces of the extremities, scalp, back, chest, face and abdomen.[1,7] The autoimmune-type inflammation of the skin has a strong genetic background, but is also influenced by environmental factors. Streptococcal infections may

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precipitate psoriasis.[8] Oral manifestations of psoriasis are less well recognized than skin lesions.[9] There are only a few studies reporting intraoral psoriatic lesions in contrast to cutaneous Psoriasis.

Chronic destructive periodontal disease is a family of bacterial infections characterized by immunologically motivated destruction of periodontal supporting tissues.[10] Both psoriasis and periodontal diseases are characterized by an exaggerated immune response to the epithelial cell surface microbiota residing on epithelial surfaces with seemingly common etiopathogenesiss. Dendritic cells (DCs) play an important role in driving an exaggerated immune response,[11,12] and are crucial to the initiation and regulation of both innate and adaptive immunity, in as much as they form a bridge between the two immune systems by trafficking from the epithelial barriers to the regional lymph nodes. The immune system further induces T cells to produce cytokines and these cytokines stimulate proliferation of keratinocytes and production of antigenic adhesion molecules in the dermal blood vessels. These adhesion molecules further stimulate T cells to produce cytokines, thus perpetuating the response.[13] Very few studies have shown an association between psoriasis and chronic destructive periodontal disease.[14,15]

This Case report intends to elaborate association between periodontitis and cutaneous Psoriasis and the implication of periodontal therapy on Psoriatic lesions. To the best of our knowledge none of the studies till date have discussed surgical or more invasive procedures for treatment of periodontitis in such patients. Hence this elucidates the treatment protocol for chronic periodontitis in a patient suffering from chronic cutaneous psoriasis not involving oral mucosa with favorable prognosis of the treatment.

Aim: This case report aims to observe the prognosis, association and implication of Invasive periodontal treatment in patient suffering from cutaneous psoriasis not involving oral mucosa.

CASE DETAIL:

A 53 year old male patient reported to department of Rama Dental College, Kanpur 10 months back with chief complaint of bleeding gums, mobility in teeth, pain and sensitivity in teeth. Dental history revealed treatment in the past for restoring carious, missing teeth and routine oral prophylaxis.

Medical history revealed that patient was suffering from psoriasis past 27 years . Patient has lesion forearms, legs, abdomen & other parts of the body. He has been taking Ayurvedic medication for the same all these years and reports of periods of exacerbation and remission.

Clinical Features:

Clinical Features show moderate accumulation of plaque and calculus,

Gingiva–Smooth soft edematous, inflamed presenting Bleeding on probing, Probing depth -10-11mm.

Clinical attachment loss 4-5mm, Gingival Recession .wrt. 31, 32, 41,42. Mobility grade III -18

31,41, gradeII-32,42. Multiple Carious teeth present. (Fig.1,Fig.2) No oral psoriatic lesions were seen

Radiographic Features

Angular and horizontal bone loss is seen (Fig. 3)

Skin Lesions

Skin lesion. Cutaneous erythematous raised patch or plaque covered by Silvery whitish scales observed on extensor aspect of forearms, legs & other parts of the body. Fig. 4,5

Treatment plan: Adviced Routine blood investigation and orthopantomogram. Extraction of grade 3 mobile teeth Scaling and root planning. Restoration of carious tooth, Periodontal regenerative therapy.

Treatment done : Blood report shows no significant finding. Scaling and root planing done,(Fig 6) Full mouth flap surgery (Fig 10-17) performed with PRF (Platelet Rich Fibrin) (Fig 7, Fig 8) and Bone Graft to treat intrabony defects (Fig 9).

RESULT:

Marked reduction of inflammation and improvement in the clinical parameters was observed. Decrease in probing depth was noticed with considerable regeneration, Patient maintained a good oral hygiene. There was a substantial reduction of skin lesions too. (Fig. 18-27

DISCUSSION:

The present case reported with advanced form of periodontitis, no oral psoriatic lesion and exhibits feature of skin psoriasis lesion. It is possible that this form of severe periodontitis could have been a coincidental finding unrelated to psoriasis. The magnitude of periodontal destruction in this present psoriasis patient indicates that there may be an association between the two diseases.

The present case report is in accordance with the study of Ganzetti et al,[16] and Rahul et al,[3] who reported the prevalence of moderate and severe forms of periodontitis was significantly higher among patients suffering from psoriasis. In addition, it has been suggested that actual periodontal breakdown may be associated with exacerbation of psoriasis and that exacerbations and remissions of psoriasis may correlate with bursts and remissions of periodontal breakdown.[14,15] A link between psoriasis and stress-induced periodontitis also exists. Genetic and environmental factors are involved in the etiologies of these autoimmune inflammatory diseases. [17,18,19]

Ogorelkova et al stated that psoriasis, periodontitis, and others, could all be included in a general category of inflammatory barrier disorders.[20] One mechanism for such a claim might be that the innate immune system is directing the subsequent adaptive immune responses (T and B cell responses), important in the pathogenesis of both psoriasis and periodontitis.[21,22] Also, recent studies

have demonstrated an up-regulation of Toll-like receptor (TLR)-2 in psoriatic skin[23] and in the periodontium of periodontitis patients.[24] High expression of TLR will amplify the inflammatory reaction and subsequent T cell activation which might be the etiopathological basis for these disease entities.

Moses and Longer[25] classified psoriasis and rapidly progressive adult and juvenile periodontitis, as angiogenic and vasoproliferative-dependent diseases. Persistent granulation tissue and aberrant angiogenesis are known to contribute significantly to pathogenesis of chronic periodontitis. The activity of proteolytic enzymes (from bacteria) leads to the release of proangiogenic cytokines from inflammatory cells which in turn releases angiogenic mediators that are sequestered in the extracellular matrix and endothelial cells lining venules.

They systematically degrade their basement membrane and proximal extracellular matrix, migrate directionally, divide, and organize into new functioning capillaries. Hence angiogenesis seems to be central to the etiology and pathogenesis of psoriasis and periodontitis.[26]

Schamberg et al[27] concluded that individuals with psoriasis exhibit retention of nitrogen. This retention seems to be proportional to the extent and severity of the disease process. The nitrogen or the reactive nitrogen species (RNS) produced, and the impact of neopterin (secreted by activation of monocyte/macrophages in the course of host defense reactions) might cause amplification of the cytotoxic forces of RNS, which are directed against the invading pathogens. This mechanism is known to cause periodontal destruction.[28] Moreover, activation of monocytes/macrophages, further exacerbate the destruction of periodontal tissues. common pathways including arachidonic acid, prostaglandin E2 and leukotriene C4, are involved in pathogenesis of both diseases.[29]

Vitamin D receptor (VDR) gene polymorphisms have been reported to be associated with psoriasis and periodontitis and it was concluded that polymorphisms of the VDR gene might be associated with periodontal disease progression and tooth loss.[30,31] Thus, one may speculate that common risk factors and genetic traits affecting DCs, immune complexes, TLR expressions or other components of the innate immune response, angiogenetic mediators, nitrogen and RNS, several cytokines, and inflammatory media-tors could predispose psoriasis patients to periodontitis or aggravate periodontal status.

Present case reports of extensive periodontal destruction hence the treatment plan was to treat the patient with periodontal regenerative procedure. In this particular case it was noticed that there was a significant improvement in gingival n periodontal status.

The highlight of the present case report show a drastic improvement in patients skin lesions noticed after three months of periodontal treatment. Constant improvement was seen in periodontal

status as well as skin lesions after completion of flap surgery post-operative phase at 3 month and 6 months there by drawing an inference that periodontal destruction in patients with Psoriatic skin lesion can be treated expecting better prognosis.

This case report is in accordance with the study of Pietrzak et al.[32] who investigated the association between periodontal disease and psoriasis and concluded it can be valid. There are reports by Lazadiou E ,Rysstad RS, and Preus H and others about improvement in skin forms of psoriasis after an adequate periodontal treatment.[14,33,41]

CONCLUSION:

Periodontal surgery can be successfully carried out in psoriatic patients with skin lesions only.

Further studies are required to assess the treatment prognosis in such patients. There is a need to assess prognosis of extensive periodontal therapy in patients with oral psoriatic lesions also.

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FIGURES:

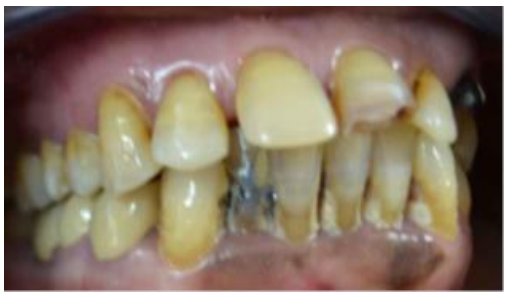

Figure 1: Preoperative intraoral

Figure 2: Preoperative intraoral

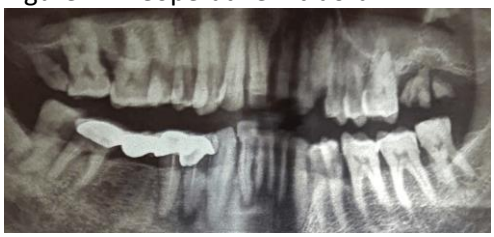

Figure 3: Preoperative Radiograph

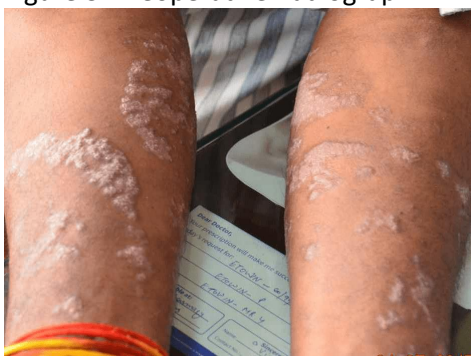

Figure 4: Preoperative psoritic skin lesions

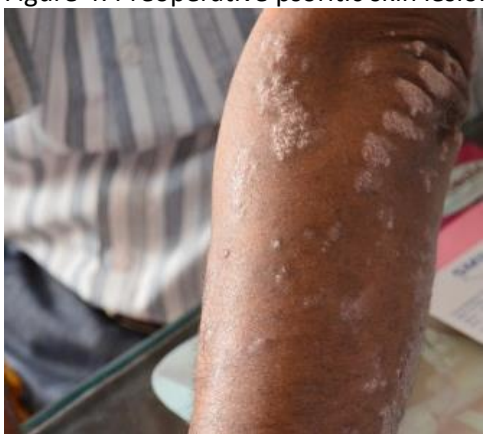

Figure 5: Preoperative psoritic skin lesions

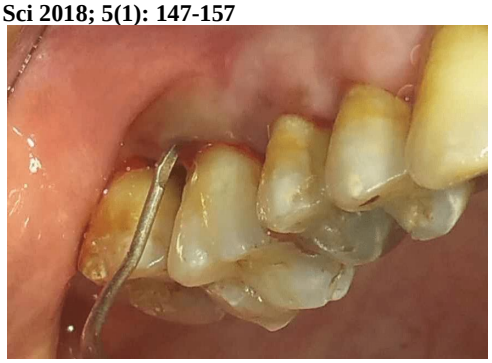

Figure 6: Scaling and root planing

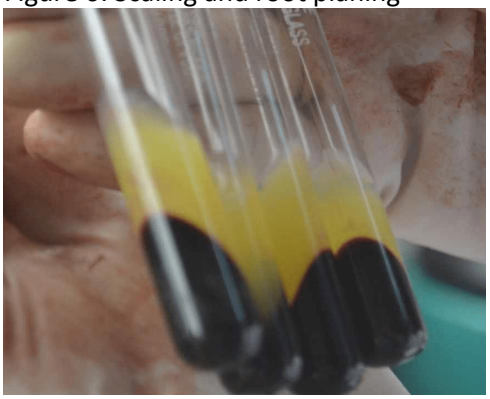

Figure 7: Platelet Rich Fibrin

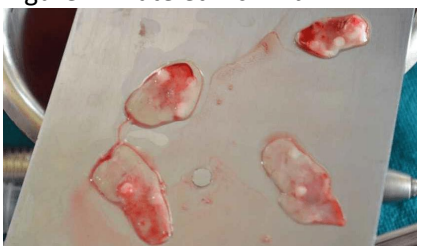

Figure 8: Platelet Rich Fibrin

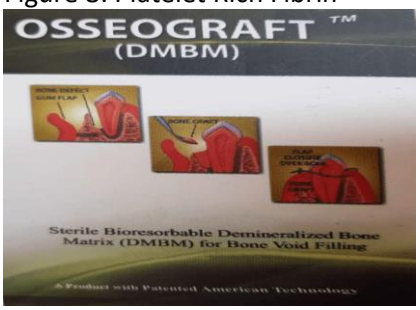

Figure 9: Bone Graft

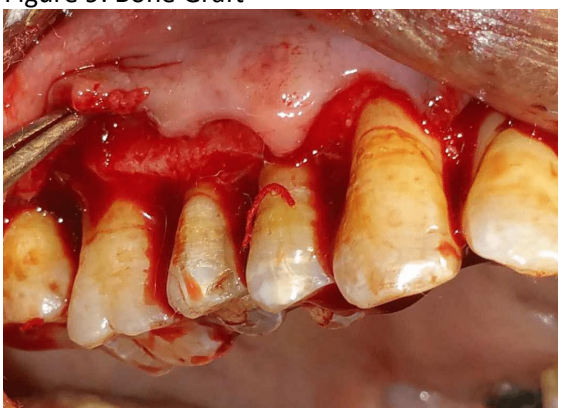

Figure 10: 1st Quadrant Flap Surgery

Figure 11: Suture Placement after placing Bone Graft and PRF

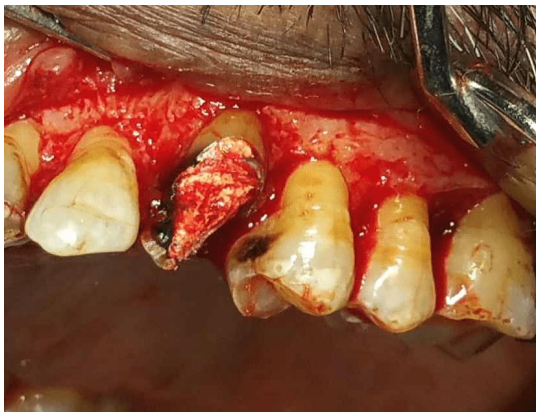

Figure 12: 2nd Quadrant Flap Surgery

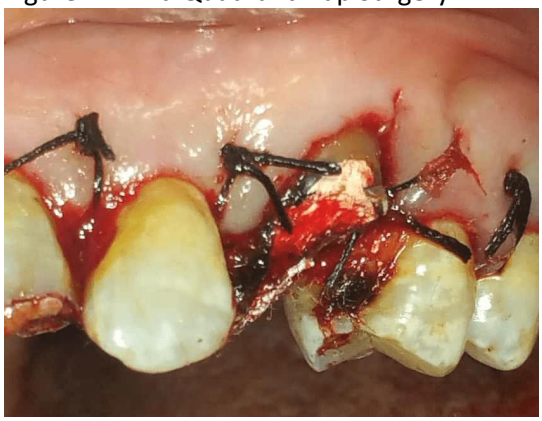

Figure 13: 2nd Quadrant suture placement after placing bone graft and PRF

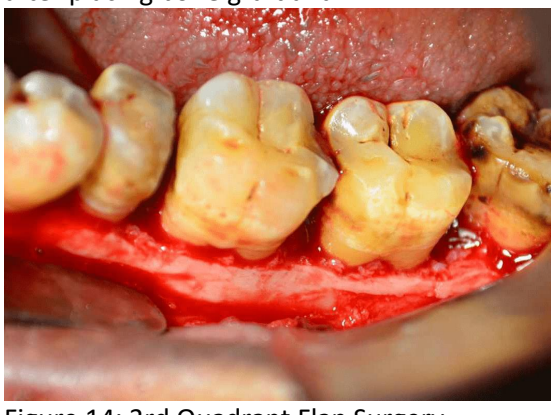

Figure 14: 3rd Quadrant Flap Surgery

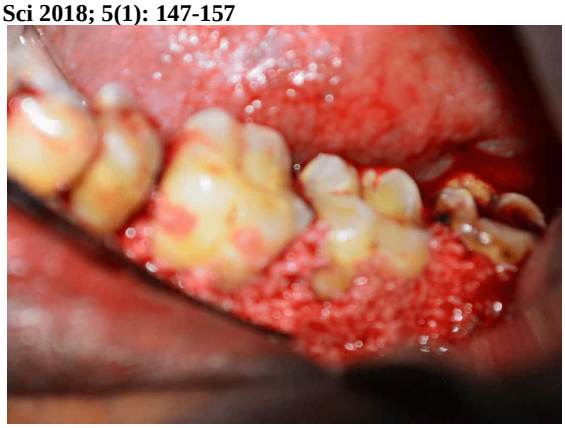

Figure 15: 3rd Quadrant placement of bone graft in the intrabony defect

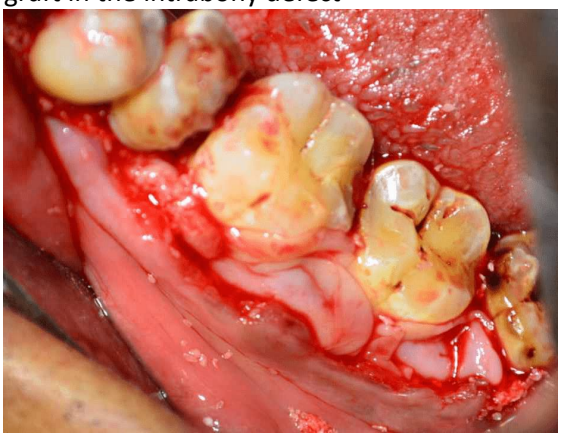

Figure 16: 3rd Quadrant placement of PRF on Bone graft

Figure 17: 3rd Quadrant suture placed

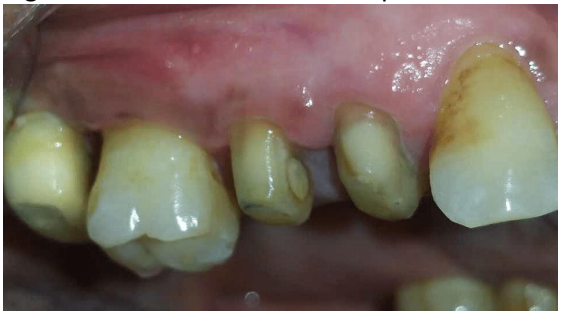

Figure 18: 1st quadrant after 3 months

Figure 19: 2nd quadrant after 3 months

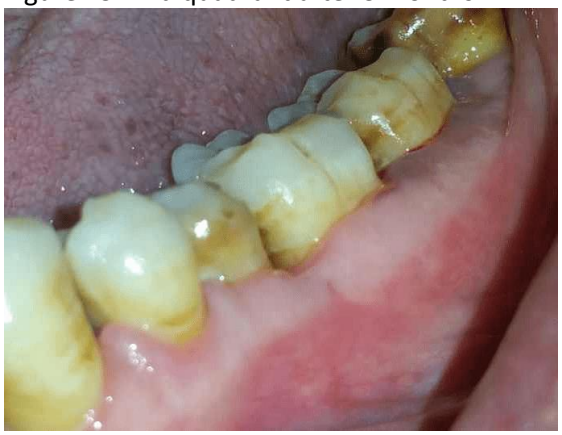

Figure 20: 3rd Quadrant after 3 months

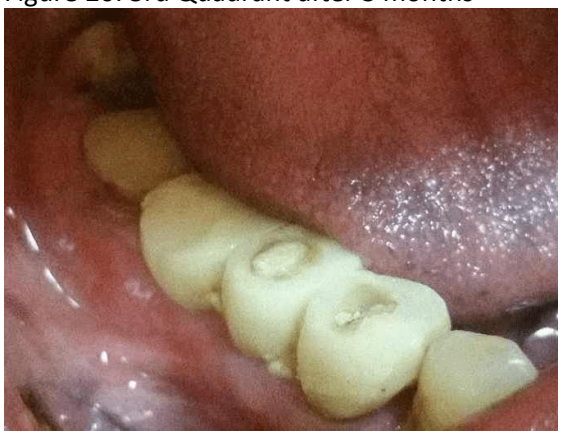

Figure 21: 4th Quadrant after 3 months

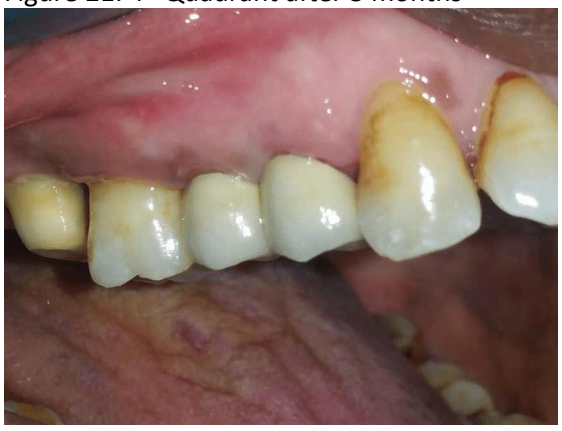

Figure 22: 6 Months Post Operative: 1st Quadrant

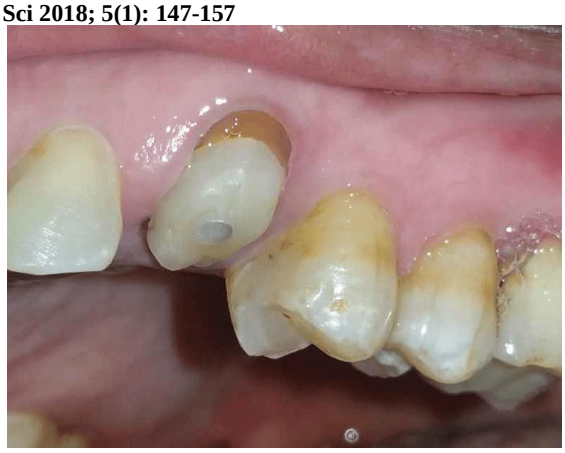

Figure 23: 6 Months Post Operative: 2nd Quadrant

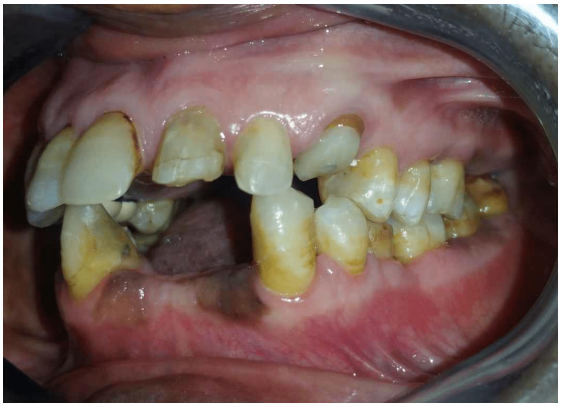

Figure 24: 6 Months Post Operative: 3rd Quadrant

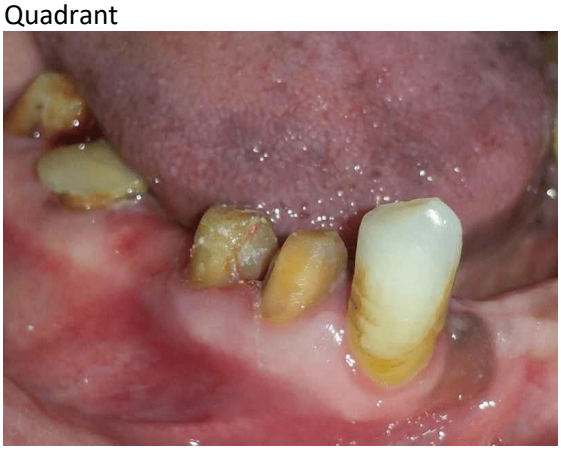

Figure 25: 6 Months Post Operative: 4th Quadrant

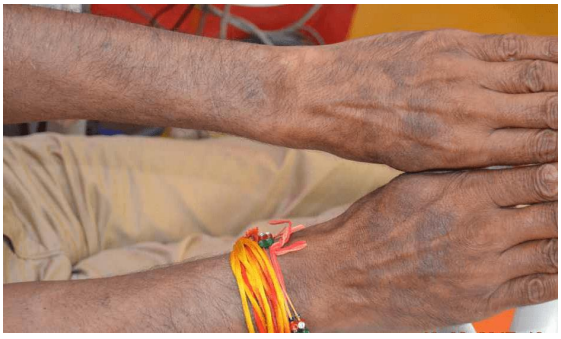

Figure 26: Skin Lesion After 3 months

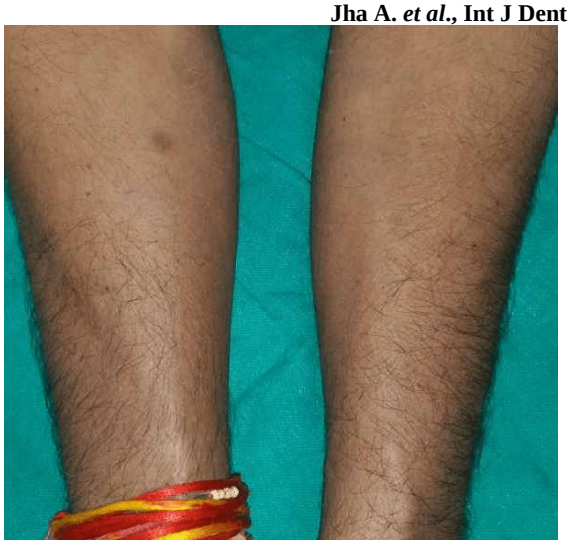

Figure 27: Considerable improvement in skin lesions after 6 months