



RESPECTING THE ATTACHED GINGIVA THE PERIODONTIST'S WAY

Bansal S R¹., Bansal P²., Baiju CS and Khashu H³

Department of Periodontics Sudharustagi College of Dental
Sciences and Research, Faridabad

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ABSTRACT

Do we, as general dentists or even specialists, barring periodontists of course, give due respect to the gingival tissue while managing some of the large localized diffuse reactive gingival swellings that they so much warrant. Or is it that we treat our patient for one problem and create another one – iatrogenic!!! This article stresses upon the fact that since biopsies of different tissue types and sites require specific techniques from both diagnostic as well as curative point of view, attached gingiva should be emphasized as a tissue requiring specific technique and all gingival biopsies especially diffuse ones be performed preferably by a periodontist or by other dentists only after proper training. Attached gingiva plays a significant role in maintenance of function and aesthetics and hence demands for logical and informed planning prior to performing a biopsy on it.

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INTRODUCTION

A wide variety of localized gingival swellings are found which can be both reactive (plaque or local irritant induced/ inflammatory) and non- reactive (non plaque induced / non inflammatory) in nature¹. Reactive localised gingival lesions are a) Focal fibrous hyperplasia/ Irritation fibroma; b) Giant cell fibroma; c) Peripheral giant cell granuloma; d) Peripheral ossifying / odontogenic fibroma; e) Pyogenic granuloma / pregnancy tumour out of which the last three are present exclusively on gingiva. Reactive lesions can also occur in the presence of systemic conditions like pregnancy, puberty, allergy etc. or due to systemic disease like leukemia. These lesions can further be diffuse or marginal and localized or generalized. In a survey² of 257 oral tumors 8% occurred on gingiva and out of 868 growths of gingiva and palate 43% were inflammatory³.

Provisional diagnosis of any gingival swelling is made on the basis of history, clinical signs and symptoms, hematologic investigations, presence / absence of local irritating factors. However, biopsy is essential to reach a final diagnosis and differentiate between reactive, benign and malignant lesions. Gingival malignancies may resemble non specific periodontitis, pyogenic granuloma or pericoronitis thus making provisional diagnosis difficult and biopsy all the more important⁴. Treatment protocol for any localized gingival swelling, until and unless overtly malignant, is thus a) Non surgical: Association with local irritating factors requires to be addressed first. b) Surgical : Localized gingival swellings that

are not associated with local irritating factors or the ones that do not subside after non surgical therapy call for surgical removal and subsequent histopathological examination.

Here treatment has to be delivered prior to final diagnosis based only on the provisional diagnosis which now becomes especially important as it will guide the biopsy technique and tissue handling⁵.

Illustrative case

A 35 year old female presented with chief complaint of facial swelling on the left side below the eye. Intra oral examination revealed presence of a large, localized, diffuse gingival swelling on the left side of maxillary arch running from 24-27 teeth on both buccal (figure 1) and palatal side (figure 2) but with much more severity on the former side. Swelling on the buccal side was deep red in colour, 4 × 2 cm in size, surface was smooth, non lobulated, sessile in nature, carefully demarcated from normal gingiva, non tender and fibrotic in consistency. There were no palpable lymph nodes. This was a recurrence of a pea sized swelling two years back which was excised by the same practitioner, not including any histopathological examination. IOPA showed slight bone loss on either side of 26 (figure 3). The case was referred to an oral surgeon by a general dentist but the fact that the swelling was recurrent, of considerable size and present exclusively on gingiva, with visible bone loss on radiograph, a periodontist's opinion was necessary.



Figure 1 Buccal gingival swelling involving 24-27



Figure 2 Palatal aspect of swelling



Figure 3 IOPA showing bone loss around 26

Complete periodontal examination including probing depths and attachment loss measurement was carried out. A diagnosis of localized mild chronic periodontitis was made. Oral prophylaxis was done. One week follow up showed considerable shrinkage on palatal side (figure 4). No substantial difference was found in the buccal growth apart from slight color change. The lesion seemed to be reactive and it was chosen to go in for an “incisional biopsy while rendering surgical treatment at the same time”.



Figure 4 Reduction in palatal swelling after scaling

Surgical technique: The undisplaced flap⁶, sometimes also known as internal bevel gingivectomy, was performed. The incision goes from a point that coincides with base of pocket on external surface of gingiva to a point apical to alveolar crest; the distance traveled apically being directly proportional to the tissue thickness (figure 5). The thicker the tissue, the more apical is the ending point. It removes the whole of the pocket wall in one incision only. Palatal flap was elevated with a sulcular incision. Interrupted sutures were given (figure

6). Healing was uneventful (figure 7, 8). Patient is currently on regular follow up without any recurrence since 18 months.

Biopsy Report: It was found to be a fibroma/irritation fibroma.

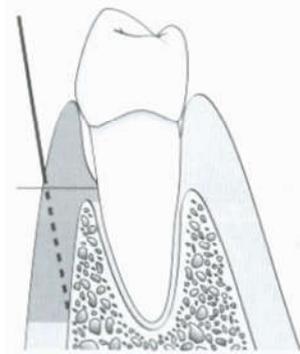


Figure 5 Incision for undisplaced flap



Figure 6 Sutures in place after taking biopsy



Figure 7 Post-op follow up (buccal aspect)



Figure 8 Post-op follow up (palatal aspect)

DISCUSSION

Most common gingival enlargement is inflammatory enlargement which generally does not involve attached gingiva. Diffuse, localized gingival swellings can be present in leukemia (mainly acute monocytic), plasma cell granuloma (a localized form of plasma cell gingivitis) which consists of mild marginal enlargement extending to attached gingiva and in some reactive and non reactive enlargements also. In case the reactive swelling is of long duration fibrotic changes occur in it.

True fibromas (i.e. neoplasia) are very rare in oral cavity. Focal fibrous hyperplasia/irritation fibroma, that is supposed to

be reactive, is a common lesion which is managed by complete surgical excision, also including superficial periodontal ligament fibers from where it may have originated⁷. Even pyogenic granuloma if left untreated will undergo eventual healing by sclerosis and will then microscopically resemble fibroma but treatment would remain same.

The periodontist's viewpoint about the case can be elaborated as follows. Due to the large size and diffuse nature of the swelling, incisional biopsy in any other way apart from undisplaced flap would not have removed complete swelling. Removing it by gingivectomy would have created a big wound which not only shows delayed healing (since it heals by secondary intention) but also creates a mucogingival problem and bone loss⁸ following complete excision of attached gingiva, thus necessitating a need for second (esthetic) surgery. Excisional biopsies of gingival overgrowths can not only cause unsightly defects but also may increase the chances of dentin hyperesthesia or hinder oral hygiene⁹. Hence it is advisable to repair them by periodontal plastic surgery during same procedure^{9,10} to restore gingival health, encourage healing, and create both esthetics and function in the excised area. Pedicle or free soft tissue grafts are recommended in such situations. Bosco F A *et al*⁹ presented two clinical cases, one presenting an invasive approach for the treatment of a recurrent pyogenic granuloma and second depicting a complete removal of a peripheral odontogenic fibroma, repaired by a laterally and a coronally positioned flap respectively. Periodontal plastic surgery successfully restored the defects that resulted from biopsies without recurrence of lesion in 5 year follow up period. In this case, however, use of a conservative yet effective approach helped eliminate a second surgical procedure.

Flap was also indicated so as to get complete access to the roots for perfect debridement since some amount of bone loss was evident on intra oral periapical radiograph. Most likely cause of development of this recurrent swelling was local irritants which must have been calculus since there was no restoration/ prosthesis/anatomic local factor. By doing a flap there are less chances of recurrence, also because excision extends down to the periosteum and removes superficial periodontal ligament fibres from which the swelling might have originated.⁷ Here it should be mentioned that more importance should be given to correct and complete scaling which also includes the subgingival area and, needless to say, can be most appropriately rendered by a periodontist. The sequence of events in the formation of such enlargement can be hypothesized as thus: Presence of subgingival irritants due to incomplete scaling → may form reactive swelling → increase in size because attracts more irritating factors due to presence of false pocket and loss of physiologic contour → swelling excised by faulty biopsy technique that neither removes local irritants nor superficial periodontal fibres and does not include any histopathological examination (simple excision by gingivectomy instead of flap) → recurrence of larger swelling in shorter time span → continuous inflammation leading to bone loss and increase in size of enlargement.

Saving the attached gingiva by doing undisplaced flap salvages the alveolar bone too because if entire gingiva is excised, it forms again at the cost of alveolar bone resulting in recession since only granulation tissue from periodontal ligament has the capacity of inducing a keratinized epithelium which is obviously favored by more pronounced bone loss during

healing following gingivectomy procedure. Also since attached gingiva will in most cases not form again, mucogingival problem may develop. In a clinical study by Wennstorm⁸ periodontal pockets were eliminated by use of gingivectomy or flap, both of which involved complete removal of keratinized tissue. Although reformation of keratinized tissue after healing occurs zone of attached gingiva formed quite less frequently.

Biopsies of different tissue types and sites require specific techniques⁵ and we would recommend adding gingival biopsies to that list. There are conflicting findings on whether general dental practitioners should perform biopsies, and if so, for what lesions and when. Simple excisional biopsies of polyps or epulides are suitable for general dental practice, and can be both diagnostic and curative at the same time. Diamanti *et al*¹³ investigated biopsy procedures in general dental practice and concluded that both specialists and general dental practitioners feel that there is a need for further training in biopsy technique for latter.

CONCLUSION

A little advance planning and thought can greatly improve the diagnostic and sometimes prognostic value of biopsy procedure being undertaken. Inadequate care at any stage could result in failure of the intent to do a biopsy (which may be non-diagnostic or non curative or associated with creation of some additional problem) that may necessitate the patient having a repeat procedure with its accompanying physical morbidity and psychological stress.

Case in discussion is a typical example of how the periodontist's point of view helped achieve pocket elimination, removal of gingival swelling & that too with less chances of recurrence, quick and better healing, no bone loss in buccal alveolar bone and no gingival recession while keeping the attached gingiva intact thus eliminating need for a second (mucogingival) surgery.

The authors have no conflict of interest

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