



## Increase of Width of Attached Gingiva and Root Coverage Using Single Incision Technique (Original Research)

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### INTRODUCTION

A mucogingival deformity refers to a significant departure from the normal shape of gingiva, alveolar mucosa and the underlying alveolar bone. Mucogingival deformities can be classified as congenital, developmental, or acquired defects. These may arise around natural teeth, implants and edentulous ridges.<sup>1,2</sup> It includes various conditions such as gingival recession, lack of keratinized gingiva, decreased vestibular depth or shallow vestibule or inadequate vestibule depth, aberrant frenum or muscle position and gingival excess. Among these deformities, shallow vestibule is the most frequently encountered abnormality and is often associated with plaque accumulation consequently leading to marginal gingival inflammation. This condition is particularly seen on the labial aspect in the mandibular anterior region and it creates problem not only periodontally but also prosthetically.<sup>9,10</sup>

Treatment of shallow vestibule includes vestibuloplasty which is a surgical modification of the gingival mucous membrane relationships including deepening of the vestibular trough, altering the position of the frenulum or muscle attachments and widening of the zone of attached gingiva.

Localized gingival recession is defined as an abnormal apical lowering (about 2 to 5mm) of free gingival margins exposing more than usual amount of tooth crown and root.<sup>11</sup>

Various coronally repositioned flap (CRF) techniques have been proposed for coverage of gingival recession defects. Although CRF has several modifications, all of them needs vertical or oblique external releasing incisions for treatment of localized gingival recession defects. In this case report we have attempted to achieve adequate vestibular depth and localized recession coverage through single incision technique.

### CLINICAL PARAMETERS

The following clinical parameters were measured at baseline (before surgery), 3 month and 9<sup>th</sup> month post surgery: (1) Recession Depth (RD): from cementoamel junction to gingival margin (2) Keratinized tissue height (KTH): from free gingival marginal to the mucogingival junction.

### PROCEDURE

A 17 year old female patient, with non contributory medical history, reported to the department of Periodontics and Oral Implantology, National Dental College and Hospital, Derabassi, Punjab, with the chief complaint of increasing unesthetic appearance of the lower front tooth. Intraoral Examination revealed high mandibular labial frenum, 6mm gingival recession in relation to 41. Oral Prophylaxis was performed and patient was kept on recall visits at an interval of 15days. Under adequate local anesthesia, Frenectomy and Vestibular Depth Extension was performed by giving a single incision at the mucogingival junction extending upto lower canines bilaterally. Muscle fibres attached to the periosteum were severed. The blunt dissection was carried out to mobilize the wider pedicle flap 3mm coronally and 2mm mesiodistally w.r.t 41. After achieving hemostatsis wider pedicle was mobilized coronally as well as mesiodistally. A stay suture in form of sling suture was passed, thus pushing the flap coronally covering the recession defect without any tissue tension. The inner mucosa was sutured to the periosteum. Bleeding was stopped by application of pressure pack and the resultant wound was covered with tin foil followed by periodontal pack. Patient was instructed not to brush the teeth for 14 days in the treated area but to rinse their mouths with chlorhexidine solution (0, 12%). Sutures were removed after 7 days satisfactory wound healing was observed .The periodontal pack was changed; patient was evaluated and was recalled after an interval of 3 months and 9 months.



**Pre-operative( baseline)**



**Single incision given**



**Coronal placement of pedicle flap**



**Suturing**



**Post-operative 3 months**



**Post-operative 9 months**

## RESULTS

Parameters	Baseline (B)	3 months (3M)	9 months (9M)
Recession depth(RD)	6 mm	5 mm	4 mm
Keratinized tissue height	4 mm	5 mm	5 mm

### CHANGES IN CLINICAL PARAMETERS OBSERVED AT FOLLOWING TIME INTERVALS

## DISCUSSION

Increased aesthetic demands target periodontal plastic surgery to develop new techniques or perform modification of the current techniques.

One of the main objectives of periodontal therapy is to achieve an area which permits an optimal level of oral hygiene.<sup>4</sup> A shallow vestibule hampers the proper placement of tooth brush leading to plaque accumulation, gingival recession and consequently marginal gingival inflammation. Such a situation is frequently encountered on the labial aspect of the mandibular anterior teeth.<sup>5,6,7,8</sup>

The present case was done to investigate the potentiality of attaining gain in vestibular depth and attached gingiva and root coverage w.r.t 41 using single incision technique. An excellent clinical result was obtained with the gain of 5mm in vestibular depth and recession coverage of 2mm w.r.t 41 at 9 months. The result of present case report seems to offer basic and objective information concerning vestibular extension and root coverage with single incision technique.

The conventional methods were also successful in gaining the adequate width but with this innovation we achieved root coverage along with gain in width of attached gingiva and vestibular depth, moreover the surgery time was also lessened leading to enhanced healing.

Moreover our technique allows coronally reposition of the flap without vertical releasing incisions at localized gingival recession defect. Therefore, this modified coronally repositioned flap technique is less invasive than classic technique.

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