Fascia LATA as A Mucosal Cover in Oral Cavity

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Abstract

Oropharyngeal cancers are the eleventh most common cancers worldwide, and the most common cancer in India. After resection of oral cancers the raw surface has been covered with various natural and artificial materials in the past. In this study we studied the efficacy of the fascial part of the tensor fascia lata muscle in covering the raw surface left behind after resecting the oral mucosal lesion. A total of 20 cases were taken up for this study with lesion size between 2 and 4 cm and with no restriction as to the site in the oral cavity. All cases showed good healing of the oral mucosa with little or no complications thus showing the efficacy of tensor fascia lata as a graft material in the oral cavity.

Introduction

Oropharyngeal cancers are the eleventh most common cancer worldwide. The incidence of oral cancers in India is one of the highest in the world with 10.3 per 100000 population in males and 6.5 per 100000 population in females (age standardized rates) with a peak incidence in 4th and 5th decade.1 The habit of using tobacco in various forms along with the low economic status, illiteracy and large population contribute to this high incidence of oral cancers in India.2

It is well-established that surgery followed by radiotherapy is the line of treatment for locally advanced tumours of buccal mucosa (P.H. O’Brien and D. Cathin, 1965 and Bloom and Sprio, 1980). Surgery enables the clinician to assess more accurately the extent of spread of the growth, to judge the prognosis and provide material for histopathological examination.3

Following oral surgery, whenever possible, the defects should be covered with tissue to avoid contracture. For smaller intra-oral mucosal defects, materials used include split thickness skin graft, full thickness skin graft, palatal mucosa, tongue and buccal mucosa itself.4

Tensor fascia lata is a tough fibrous sheath that envelops the whole thigh like a sleeve and is easily harvested. The tensor fascia lata has traditionally many applications in plastic surgery. It has a significant role in the management of pressure sores, facial reanimation and as a pedicled flap. It has also been used as a graft in ear surgeries and for closure of CSF leaks. In this study for the first time in India we study the option of using the tensor fascia lata from the thigh for covering the mucosal defects following surgery for small cancerous intra-oral lesions.

Material and Methods

A total of 20 cases of primary squamous cell carcinoma of the oral cavity from the ENT and Head and Neck Surgery unit of a large teaching hospital were taken up for the study.
This included 13 males and 7 females with ages ranging from 40 to 60 yrs. Patients were screened and only those fulfilling the following criteria were included in the study.

1) Only those cases that were resectable at first presentation were taken up for the study.
2) No patient receiving prior radiotherapy or chemotherapy was included in the study.
3) Only early lesions according to the TNM classification were included in the study. Patients with advanced disease i.e., unilateral and bilateral fixed nodes, with distant metastasis were excluded from the study.

All had basic biochemical parameters within normal range.

All patients underwent detailed clinical examination and were investigated thoroughly, including a biopsy prior to definitive management.

All cases underwent pre-operative dental scaling. Of the 20 cases selected for the study 17 were buccal mucosa and 3 cancers were tongue lesions. In all the 20 cases, the primary tumour was surgically excised using the CO₂ laser.

Tensor Fascia Lata

The fascia lata is a tough fibrous sheath that envelops the whole of the thigh like a sleeve. The fascia lata is thickened laterally where it forms a two inch wide band called the iliobibial tract. Superiorly the tract splits into two layers. The superficial lamina is attached to the tubercle of the iliac crest, and the deep lamina to the capsule of the hip joint. Inferiorly the tract is attached to a smooth area on the anterior surface of the lateral condyle of the tibia.

Site for harvesting the fascia:

- 10 cm above the femoral condyle on the anterolateral aspect of the thigh
- 5-6 cm vertical incision
- Subcutaneous tissue separated to expose the glistening white fascia.
- Mastoid retractor is applied and fascia is separated from subcutaneous fat with the help of the Farabeauf’s periosteal elevator to obtain a graft of adequate size that is 6 x 4 cm
- Infiltration with saline between the fascia and the muscle
- Fascia is incised with a 15 no. blade.
- With the help of a scissors, the graft is cut; thereby obtaining a roughly rectangular graft of required size.
- Graft is placed on a glass slide and spread, bits of muscle and adipose tissue remaining is separated with the help of no. 11 blade in a centrifugal manner.
- Graft on the glass is wrapped with a gauze.
- Subcutaneous tissue is closed with catgut.
- Skin is closed with non-absorbable sutures.
- Tight dressing

In all cases closure of the raw surface was done using fascia lata, which was sutured using 3-0 synthetic absorbable sutures. Small multiple incisions were taken on the fascia prior to suturing onto the raw surface. The fascia was sutured all along the raw surface and a few stay sutures were taken. In four cases, a gauze bolster was used as a tie down intra-oral dressing and was removed on the fourth postoperative day. Besides excision of the primary, appropriate neck dissection to manage the neck nodes was done.

All patients were managed by nasogastric feeds for three days postoperatively. They were subsequently given oral feeds. The
patient was given antiseptic gargles from the second postoperative day. The oral wound was assessed daily till full healing. As the mucosa healed under the graft the free edges of the graft were trimmed out. The skin sutures at the harvest site were removed on the 7th postoperative day.

Results and Analysis

A total of 20 cases were selected for the study over a period of 2 years.

Analysis of the various factors:

Majority of the patients were in the age group of 40-50 Table 1.

Table 2 shows male : female ratio.

One patient developed a haematoma at the harvest site which healed subsequently. All others tolerated the wound at the harvest site well.

The grafted fascia sloughed off in all cases within 8 – 10 days. The slough subsequently fell off. In those cases in which it did not fall off, it was slowly trimmed till it fell off.

All patients showed good mucosal healing over the excised area. The patients whose tongue lesions were excised showed good functional result in addition to the healing surface.

Discussion

Cancers of the oral cavity account for 3-

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<th>Age</th>
<th>No. of patients</th>
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<td>40-50</td>
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<tr>
<td>50-60</td>
<td>8</td>
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<tr>
<td>Total</td>
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<th>Sex</th>
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<td>Female</td>
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4% of all malignancies in the West. In contrast, due to reasons already well known, the figure approaches 10.5% in our country.
Buccal mucosal lesions account for 30% of this oral tumours.\textsuperscript{5} There are no studies in the literature which have been conducted on the use of tensor fascia lata for the closure of small oral mucosal lesions, our study being the first of its kind. Various graft materials have been used like split thickness skin graft, full thickness graft, collagen films, local flaps etc.\textsuperscript{6}

In this first ever study the usage of tensor fascia lata as a mucosal cover was studied for tongue and buccal mucosa lesions.

In the initial part of the study bolsters were used as a tie over dressing. This was used to prevent collection below the graft and to prevent the graft from migration. However it was later found that by giving multiple incisions and stay sutures equally good results could be managed.

Primary closure of buccal mucosal lesions results in contracture and scarring resulting in a reduction of the functional outcome and also causing patient distress. Especially in cases of tongue lesions where a marginal mandibulectomy has been done primary closure will hamper deglutition, cause speech defects and decrease mouth opening.\textsuperscript{7,8}

Skin graft is a viable tissue and usually it heals over the raw surface and replaces the mucosa which has been excised. This healing causes the contracture of the wound edges and scarring giving a poor cosmetic and functional outcome.\textsuperscript{9} There is also the question of cosmetic outcome of the harvest site.

Fascia lata is a tough structure which is harvested from the patient himself. It does not come with its own blood supply and is not viable at the site of grafting but is however a natural tissue covering. It slowly sloughs off allowing the raw surface to heal slowly achieving as close to normal physiology as possible.

**Conclusion**

In conclusion it can be said that tensor fascia lata can be used as a cover for the raw surface after excision of small oral mucosal lesions. It provides a good cover allowing the normal physiological mucosa to grow underneath. It can always be considered in cases where primary closure may result in a poor functional outcome.

**References**

5. Cumminge CW. Otolaryngology, Head and Neck Surgery 1986; Pg.1261-1344.