

Research Article

RECONSTRUCTION OF TONGUE WITH FASCIA LATA GRAFT IN A CASE OF ORAL CARCINOMA—A CASE REPORT

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ABSTRACT

The most common oral carcinoma is the Tongue carcinoma. The current treatment strategies are mainly surgery-based comprehensive therapies. There are many methods suitable for defects after ablative surgery or for small or mid-sized defects, including primary closure or local flaps, free flaps. The tongue plays a key role in speech and deglutition, therefore the ideal reconstructive method should provide not only satisfactory structural cosmesis, but also good restoration of function. Superficial defects of the mucosa or skin that are not possible to repair by primary closure or rearrangement of adjacent tissue are considered for reconstruction with either a split thickness or a full-thickness skin graft. But they can undergo significant contracture, limit movement of functional areas due to lack of metabolic needs to heal. This paper deal with reconstruction of tongue in a case of tongue carcinoma with fascia lata graft. Fascia lata graft is strong, pliable, and easily sutured to native tissues, it is easily harvested.

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INTRODUCTION

The impact of major ablative surgery for cancer in the head and neck region can be devastating both aesthetically and functionally.¹ Reconstruction of oncologic defects are required to restore the function and appearance in an effort to achieve total rehabilitation. Superficial defects of the mucosa or skin that are not possible to repair by primary closure or rearrangement of adjacent tissue are considered for reconstruction with either a split thickness or a full-thickness skin grafts.¹ But they can undergo significant contracture, limit movement of functional areas due to lack of metabolic needs to heal.¹ The tongue is the most common sub site of oral cavity cancer and a frequent locus of invasion in floor of mouth, oropharyngeal or hypopharyngeal cancer. It is often resected in part or in whole. Reconstruction of the tongue is one of the key maneuvers following oral cavity resection.²

Lateral thigh fascia lata serves as an excellent dural substitute and is commonly used in neurosurgical practice. Fascia lata is strong, pliable, and easily sutured to native tissues. It is homologous tissue with no risk of foreign body reaction and a very low risk of infection.³ It is widely used in a large variety of surgical specialties when auto logo us graft tissue is desired, including cardiac surgery, orthopedic surgery, ophthalmology, urology, general surgery and plastic and reconstructive surgery.³

CASE REPORT

A 53 years old patient reported with previously diagnosed squamous cell carcinoma in the left lateral border of the tongue (Fig.1).



Fig.1 Preoperative view

On examination, there was an ulcerative, tendered, indurated mass present in the left lateral border without extension to the floor of the mouth. Left Submandibular lymph nodes were palpable, tender and fixed with the overlying skin.

Bilateral Schobinger incisions were given. Supra omohyoid neck dissection (SOHND) was done in the right side &

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extended SOHND was done in the left side. Wide local excision of the lesion was done. The leg was flexed to a level that allows knee flexion of 90 degree. The leg was fixed to the table at 15degree adduction of the hip joint. An 'S' shaped incision was given in the thigh (Fig.2).



Fig.2 Incision design

The harvest limits were 4cm anterior to the lateral intramuscular septum, 10 cm superior to the lateral femoral condyle & 15 cm from the level of anterior superior iliac spine. The dissection was carried down through the subcutaneous fat and the fascia lata was exposed. A fasciotomy incision was created. A careful blunt dissection was used to mobilize the fascia of the underlying muscles. The fasciotomy incision was lengthened to accommodate the desired size of the Graft (Fig.3).



Fig.3 Graft Harvest

2-0 Vicryl suture was used to approximate fascia lata as much as possible. Skin was closed in layers using subcuticular sutures with 3-0 Vicryl. The defect was then reconstructed with 3-0 vicryl sutures that were inserted through both the graft and underlying musculatures at an interval of 1 cm. Each suture provided a focal point of close, immobile contact (Fig.4).

DISCUSSION

The deep fascia of the thigh, or the fascia lata, encircles the thigh musculature circumferentially. It originates anteriorly from the inguinal ligament and superior pubic ramus, laterally from the iliac crest, posteriorly from the sacrum and coccyx, and medially from the inferior pubic ramus, the ramus, and tuberosity of the ischium and sacrotuberous ligament. The lateral thickening of the fascia, which arises from the iliac crest and extends distally to the level of the lateral tibial condyle, makes up the iliotibial tract.⁴It splits proximally into 2 layers around the tensor fascia lata muscle and attaches posteriorly to the tendon of the gluteus maximus. It adjoins with the thick lateral crural intermuscular septum at its

posterior border. The fascia lata of the anterior thigh consists of vertically and obliquely oriented fibers that become horizontal distally around the knee and is attached below to the condyles of the femur and tibia and the head of the fibula.⁴ The sensory innervation of the thigh is derived anteriorly from the lateral (L2-L3), medial, and intermediate (L2-L3) cutaneous nerves, with proximal contribution from branches of the genitofemoral nerve (L1-L2). The ilioinguinal nerve (L1) and cutaneous branches of the obturator nerve (L2-L4) innervate the medial thigh with the posterior cutaneous nerve posteriorly. The gluteal area is innervated by the subcostal (T12), iliohypogastric (L1), and dorsal rami of the superior (L1-L3), medial, and inferior cluneal nerves.³ The blood supply to the thigh skin is derived from direct cutaneous perforators of the lateral circumflex femoral artery on the lateral and anterior aspects. The posterolateral territory gets its blood supply by the profunda femoris, whereas the inner thigh is mainly supplied by the medial circumflex femoral artery.⁴

The first use of the autologous fascia lata graft in the treatment of post-traumatic diaphragmatic hernia was published by Janes in 1931.⁵ The main disadvantage of this surgical procedure is cosmetic and includes a scar on the thigh and postoperative pain or mild hematoma.⁵

As per Valerie Sulin Tay et al.⁶ the harvest limits are laterally - 4 cm anterior to the lateral intermuscular septum this is to preserve a 4 cm strip of the iliotibial band, inferiorly-10 cm superior to the lateral femoral condyle joint to preserve the Fascia lata condensation around the knee and superiorly up to 15 cm from the level of anterior superior iliac spine to avoid harvesting Fascia lata on the superior surface of the tensor fascia lata muscle.⁶A 20 cm × 10 cm fascial sheath can be harvested easily without interfering the iliotibial tract and the transverse decussating fibers around the knee joint.⁷After harvesting, the graft was draped with a wet dressing until used.⁷

During harvest, The patient is placed supine on the operating table with the donor lower limb flexed at the hip and knee joints. The knee is brought to a 90 ° angle with a 10 ° to 15 ° adduction at the hip joint and is supported from below to maintain this position.⁷ This tightens the iliotibial tract and the anterolateral fascia lata and facilitates its dissection. The taut lateral crural septum can be easily visualized and palpated at the lateral aspect of the thigh as the posterior muscular compartment is supported from below with folded drapes.⁴Dubiel and Wigren evaluated the consequences of the harvest of fascia lata on the donor lower limb function and found that it had mainly affected the functions that are mediated by the tensor fascia lata muscle, ie, the muscle strength in hip flexion and knee extension.⁴ From their description, it was evident that the iliotibial tract had included the main volume of the fascial sheath, thereby resulting in weakening of the tensor fascia lata muscle.⁶ Some of the complications of fascia lata graft reported in the literature like hematoma, dehiscence, nerve injury (distal branches of latero cutaneous nerve), muscle herniation.³No such complications were seen in our case and postoperatively we got a satisfactory result (Fig.5).



Fig.4 Placement of Graft



Fig.5 Post operative view

Histologically, fascia lata is composed of a collagen matrix with fibroblasts and elastic tissue. The relative acellularity and low nutritional requirements make it suitable for grafting. Its fibrous sheetlike nature permits it to be cut and shaped as required in reconstructive procedures.⁸

CONCLUSION

Fascia lata graft is strong, pliable, and easily sutured to native tissues, it is easily harvested and no important nerves or vessels are encountered during surgical approach.³The major disadvantage of fascia lata is the need to harvest from a different anatomical surgical site. But it is firm, elastic with high epithelialization capacity which make the graft a better choice for tongue reconstruction. On the other hand due to non-hair-bearing property it is the better choice over the skin grafts.

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