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Fascia Lata Graft Reconstruction of the Tongue Following Excision of Verrucous Hyperplasia: A Case Report and Review of Literature

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Abstract
Verrucous hyperplasia is a potentially malignant oral lesion that commonly affects the buccal mucosa, gingiva, and tongue. Complete surgical excision remains the treatment of choice; however, reconstruction of tongue defects presents a challenge because restoration of mobility, speech, swallowing, and contour is essential. While local, regional, and free flaps are commonly employed, they may be associated with donor-site morbidity, prolonged operative time, and increased costs. Autologous fascia lata grafts have demonstrated excellent biocompatibility and tensile strength in reconstructive surgery but have rarely been described for tongue reconstruction. Fascia lata provides a durable, readily available autologous graft with excellent handling characteristics and minimal donor-site complications. In selected superficial or partial-thickness tongue defects, it offers a simple and cost-effective alternative to conventional flap reconstruction, avoiding prolonged operative time and the complexity of microvascular procedures while maintaining acceptable functional and aesthetic outcomes.

Keywords: Verrucous hyperplasia; Tongue reconstruction; Fascia Lata graft.

Introduction

Oral verrucous hyperplasia is one of the rare exophytic premalignant lesion that is claimed to have high chance of malignant transformation. Lack of invasion into the underlying cell layer is one of the striking histological differences between verrucous hyperplasia and carcinoma. Verrucous hyperplasia is considered as the precursor to verrucous carcinoma which is a well- differentiated variant of oral squamous cell carcinoma. It is more prevalent in individuals with habits such as areca nut chewing or smoking.[1] As

verrucous hyperplasia and verrucous carcinoma may present with similar clinical features, these entities need to be distinguished histologically. In 1980, Shear et al. first differentiated verrucous hyperplasia from verrucous carcinoma based on the absence of endophytic growth in the former entity, wherein the verrucous and hyperplastic epithelium was completely superficial to the adjacent normal epithelium.[2]
Surgical excision of the lesion with adequate soft tissue margins is considered as one of the gold standard techniques for the management of verrucous hyperplasia.[3] Reconstruction of the tongue in the glossectomy patient remains a difficult task. In the absence of donor tissue which even remotely resembles such a specialized organ, surgeons are forced to choose the best available.[4] The lateral thigh fascia lata is an excellent autologous dural substitute and has been extensively utilized in neurosurgical practice because of its favorable biomechanical and biological properties. It is strong, pliable, and can be easily sutured to adjacent native tissues, providing a reliable and durable graft. As an autologous tissue, fascia lata is highly biocompatible, eliminating the risk of foreign body reaction and carrying a very low risk of infection or graft rejection. Owing to its versatility, ease of harvest, and excellent tensile strength, the fascia lata has been widely adopted across numerous surgical specialties whenever autologous graft material is required. These include cardiac surgery, orthopedic surgery, ophthalmology, urology, general surgery, plastic and reconstructive surgery, and more recently, head and neck reconstruction, where it serves as a valuable option for restoring structural support and soft-tissue defects.[5]
We present a case of verrucous hyperplasia with dysplasia involving left lateral border of tongue managed with wide local excision followed by reconstruction with lateral thigh fascia lata graft.

Case Report

A 50 years old patient reported with previously diagnosed verrucous hyperplasia with dysplasia in the left lateral border of the tongue (Figure 1).

Figure 1: Pre-operative view of the lesion.

On examination, presence of whitish, non-scrapable, firm, exophytic growth with irregular border and indurated base was noted on the left ventrolateral border of tongue.
Wide local excision of the lesion was done. The patient was positioned with the knee flexed to 90° and the hip maintained in approximately 15° of adduction to facilitate optimal exposure of the lateral thigh. The limb was secured in this position, and an S-shaped incision was made over the lateral aspect of the thigh to expose and harvest the fascia lata graft.

The graft harvest was confined within safe anatomical boundaries: 4 cm anterior to the lateral intermuscular septum, 10 cm proximal to the lateral femoral condyle, and 15 cm distal to the anterior superior iliac spine. Following skin incision, dissection was carried through the subcutaneous tissue until the fascia lata was clearly exposed. A longitudinal fasciotomy incision was then made, and meticulous blunt dissection was performed to separate the fascia lata from the underlying musculature while preserving the integrity of the graft. The fasciotomy was subsequently extended to obtain a graft of the desired dimensions, ensuring adequate length and width for reconstruction while minimizing donor-site morbidity (Figure 2).

Figure 2: Harvesting the graft.

The donor site was irrigated, and the residual fascia lata was approximated as much as possible using 2-0 polyglactin 910 (Vicryl) sutures to minimize donor-site morbidity. The skin was subsequently closed in layers with 3-0 polyglactin 910 (Vicryl) using a subcuticular technique (Figure 3). The harvested fascia lata graft was then inset into the recipient defect and secured using interrupted 3-0 polyglactin 910 (Vicryl) sutures placed through both the graft and the underlying musculature at approximately 1-cm intervals. This fixation technique ensured multiple points of firm, immobile contact between the graft and the recipient bed, thereby promoting graft stability, intimate tissue apposition, and optimal integration (Figure 4).

Figure 3: Donor site after closure.

Figure 4: Placement of the graft.

Discussion and review of literature

The fascia lata is the deep fascial layer of the thigh that circumferentially encloses the thigh musculature, providing structural support and compartmentalization. It originates from the inguinal ligament and superior pubic ramus anteriorly, the iliac crest laterally, the sacrum and coccyx posteriorly, and the inferior pubic ramus, ischial ramus, ischial tuberosity, and sacrotuberous ligament medially. Laterally, it thickens to form the iliotibial tract, which extends from the iliac crest to the lateral condyle of the tibia. Proximally, the iliotibial tract splits into two layers to envelop the tensor fasciae latae muscle before blending posteriorly with the tendon of the gluteus maximus. Posteriorly, it is continuous with the robust lateral intermuscular septum.[6] The anterior portion of the fascia lata is composed of longitudinal and oblique collagen fibers that gradually assume a more transverse orientation near the knee, where the fascia firmly attaches to the femoral condyles, tibial condyles, and the head of the fibula. Its dense collagen architecture provides excellent tensile strength, making it an ideal autologous graft for reconstructive procedures requiring durable soft-tissue support.[6]

Cutaneous sensation over the thigh is supplied by the lateral, intermediate, and medial femoral cutaneous nerves, with additional contributions from the genitofemoral, ilioinguinal, obturator, and posterior femoral cutaneous nerves. The gluteal region receives sensory innervation from the subcostal, iliohypogastric, and superior, middle, and inferior cluneal nerves.[6] Knowledge of these neural pathways is essential during graft harvest to minimize postoperative sensory disturbances. The vascular supply of the lateral thigh is predominantly derived from cutaneous perforators of the lateral circumflex femoral artery, while the posterolateral thigh is supplied by branches of the profunda femoris artery. The medial thigh receives its principal blood supply from the medial circumflex femoral artery.[6] Preservation of these vascular territories during graft harvesting facilitates uneventful wound healing and minimizes donor-site complications.

The first reported use of an autologous fascia lata graft for the repair of a post-traumatic diaphragmatic hernia was described by Janes in 1931, marking the beginning of its application as a versatile autologous reconstructive material. Since then, fascia lata has been widely adopted across multiple surgical specialties because of its excellent tensile strength, biocompatibility, and ease of harvest. Despite these advantages, the procedure is associated with relatively low donor-site morbidity. The principal disadvantages are cosmetic, primarily the presence of a linear thigh scar, along with transient postoperative pain, mild hematoma, seroma formation, or temporary sensory disturbances. However, these complications are generally self-limiting and are outweighed by the benefits of using a durable, infection-resistant autologous graft.[7]

According to Valerie Sulin Tay and colleagues [8], safe harvesting of the fascia lata should be performed within well-defined anatomical boundaries to minimize donor-site morbidity and preserve lower-limb function. Laterally, the harvest should remain 4 cm anterior to the lateral intermuscular septum to preserve a 4-cm strip of the iliotibial tract. Inferiorly, the graft should not extend beyond 10 cm proximal to the lateral femoral condyle, thereby preserving the fascial condensation around the knee joint. Superiorly, the harvest should be limited to 15 cm distal to the anterior superior iliac spine to avoid violating the fascia overlying the tensor fasciae latae muscle. Adherence to these anatomical limits helps maintain the structural integrity of the iliotibial tract and surrounding fascial structures while reducing the risk of donor-site complications and functional impairment. A 20 cm × 10 cm fascia lata graft can be harvested safely without compromising the integrity of the iliotibial tract or the transverse decussating fascial fibers surrounding the knee joint, provided the recommended anatomical harvest boundaries are respected. Following harvest, the graft should be immediately wrapped in sterile saline-moistened gauze to maintain tissue hydration and viability until it is prepared for implantation into the recipient site.[9]

During fascia lata harvest, the patient is positioned supine with the donor limb flexed at the hip and knee. The knee is maintained at approximately 90° of flexion, with the hip adducted by 10°–15°, which increases tension in the fascia lata and iliotibial tract, facilitating graft identification and harvest.[9] This position also enhances visualization of the lateral intermuscular septum, improving surgical orientation and reducing the risk of injury to adjacent structures. Donor-site morbidity is minimal. Dubiel and Wigren reported only minor functional impairment, including a slight reduction in hip flexion and knee extension strength, without significant effects on overall lower-limb function.[6]

Donor-site complications associated with fascia lata graft harvest are uncommon and are generally minor. Reported complications in the literature include hematoma, seroma, wound dehiscence, injury to the distal branches of the lateral femoral cutaneous nerve resulting in transient sensory disturbances, muscle herniation, postoperative pain, and cosmetically visible scarring.[5] Adherence to meticulous surgical

technique and recommended anatomical harvest boundaries can substantially reduce the incidence of these complications. In the present case, no donor-site complications such as hematoma, wound dehiscence, nerve injury, or muscle herniation were encountered. The postoperative course was uneventful, with satisfactory healing of both the donor and recipient sites, resulting in a favorable functional and clinical outcome (Figure 5).

Figure 5: Three months post-operative view.

Conclusion

Autologous fascia lata grafting represents a promising reconstructive option for selected tongue defects following excision of verrucous hyperplasia. This technique is technically straightforward, economical, and associated with favorable functional outcomes. Further studies with larger patient cohorts and longer follow-up are warranted to establish its role in oral tongue reconstruction.

Informed Consent

Written informed consent was obtained from the patient for publication of this article and accompanying images.

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References

1. Sarika AS, Manigandan T, Vijayashree V. Verrucous Hyperplasia of Tongue -A Case Report. Ann Case Rep Clin Stud. 2025;4(1):1-5.
2. Shear M, Pindborg JJ. Verrucous hyperplasia of the oral mucosa. Cancer 1980; 46:1855–62.
3. Hansen LS, Olson JA, Silverman Jr S. Proliferative verrucous leukoplakia: A long-term study of thirty patients. Oral surgery, oral medicine, oral pathology. 1985 Sep 1;60(3):285-98.
4. Haughey BH. Tongue reconstruction: concepts and practice. The Laryngoscope. 1993 Oct;103(10):1132-41.

5. Alemán RM, Martínez MG. Lateral thigh fascia lata as interpositional graft for temporomandibular joint ankylosis. Journal of maxillofacial and oral surgery. 2012 Sep;11(3):354-7.
6. Amir A, Gur E, Gatot A, Zucker G, Cohen JT, Fliss DM. Fascia lata sheaths harvest revisited. Operative Techniques in Otolaryngology-Head and Neck Surgery. 2000 Dec 1;11(4):304-6.
7. Bjelovic M, Babic T, Spica B, Gunjic D, Veselinovic M, Bascarevic V. The use of autologous fascia lata graft in the laparoscopic reinforcement of large hiatal defect: initial observations of the surgical technique. BMC surgery. 2015 Mar 11;15(1):22.
8. Tay VS, Tan KS, Loh IC. Minimally invasive fascia lata harvest: a new method. Plastic and Reconstructive Surgery–Global Open. 2013 Apr 1;1(1):e7-8.
9. Amir A, Gatot A, Zucker G, Sagi A, Fliss DM. Harvesting large fascia lata sheaths: a rational approach. Skull base surgery. 2000;10(1):29.