

## CASE REPORT

### FREE VASTUS LATERALIS MUSCLE FLAP FOR CLOSURE OF RECURRENT ORONASAL FISTULA: A CASE REPORT

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**ABSTRACT:** Recurrent oronasal fistulas after cleft palate repair present a difficult problem for the cleft surgeon. Repeated surgeries to close the fistula results in increased scar formation with associated soft tissue contracture and a resultant increase in fistula size. Although locally available flaps has been the standard procedure for closure of small fistulae, Large fistulas requires regional flaps like tongue flaps requiring multistage transfer, with resultant intra oral scarring, to avoid the problems associated with loco regional flaps and recent increase in success rates of free tissue transfers make them a viable, one-stage means of closing these defects. In this case report we present our clinical experience with recurrent palatal fistula and highlight the effective use of the free vastuslateralis muscle flap as a means of repair.

**KEYWORDS:** Oronasal fistula, Free vastus lateralis muscle flap.

**INTRODUCTION:** Palatal fistula is the commonest complication associated with cleft palate surgery, the rate of palatal fistula after palatal surgery varies from 4-35%,<sup>[1]</sup> Recurrent palatal fistula rate is 25% on an average after first attempt of repair.<sup>[2]</sup> Incidence of fistula is more in case of bilateral than in unilateral cleft lip with palate.<sup>[3]</sup> Due to undue tension at repair site with compromise in vascularity with super added infection is the cause for wound breakdown and resultant fistula formation, By bringing in well vascularised tissue from the distant site and repairing the fistula in single stage with minimum tension at operated site gives good result. Various free flaps have been explained for reconstruction of fistula including free radial artery for arm flap, dorsalispedis flap, scapular flap. On reviewing the literatures only few cases have undergone free vastus lateralis muscle flap for reconstruction of oronasal fistula.<sup>[4]</sup> With this back ground here by presenting a case of palatal fistula repair using free vastus lateralis muscle flap.

**CASE REPORT:** A 10 years-old girl presented to outpatient department, patient is a know case of bilateral cleft lip and palate was evaluated for oronasal fistula in the anterior hard palate. She had undergone cleft lip repair and multiple attempts of palatal repairs with the resultant fistula measures 3.1×2.8 cm defect with severely scarred surrounding palatal tissues. [Fig. 1, Fig. 2] Patient was worked up for Free ALT flap, reconstruction of fistula, palatal mucoperiosteal turnover flaps were raised to form nasal lining. Approximately about 1.2cm diameter defect of the nasal lining, couldn't be closed for lack of adequate tissue just behind the right lateral incisor. Standard markings for free anterolateral thigh flap was done on right thigh and exploratory incision was made, cutaneous perforator supplying the skin paddle was not reliable, Hence A vastus lateralis muscle with a 8-cm pedicle was Harvested. Only a 4.5×4×1cm segment of muscle was harvested thus sparing remaining muscle. Flap was brought to recipient site and inset given, and the pedicle was passed through the gap in the nasal lining, and the right alveolar cleft, subcutaneous tunnel was created in the cheek and pedicle was brought close to facial vessels.

## CASE REPORT

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Facial artery and vein were used for vascular anastomosis. On the post-operative day 6 flap was found congested and patient was taken up for exploration at anastomosis site, vein was found kinked at anastomosis site and venous return was found hampered [Fig. 3] venous anastomosis was revised and venous flow was reestablished. Following which closure of fistula was achieved and muscle flap was mucosalised over a period of time, [Fig. 4] No significant morbidity was noticed due to harvesting muscle flap, no obvious functional disability noted, thigh scar healed well. [Fig. 5]

**DISCUSSION:** Oronasal fistula is the common complication following palatal repair, there are variety of option for reconstruction, local flaps, regional flaps and distant free flaps. Due to improved microsurgical skills and post-operative monitoring and intervention, results are good with microvascular reconstruction of palatal fistula. Variety of free flaps has been used to repair large oronasal fistulas. Free radial forearm flap have been used for reconstruction by Colletti et al<sup>[5]</sup> and chen et al<sup>[6]</sup> with closure of fistula but leaving behind scar over forearm. There are lot other free flaps have been used for reconstruction which includes Dorsalispedis flap,<sup>[7]</sup> scapular flap<sup>[8]</sup> lateral forearm flap,<sup>[9]</sup> Anterolateral thigh flap.<sup>[10]</sup> In our case report initial we planned for Free anterolateral thigh flap for reconstruction, but significant cutaneous branch was not found in our case, hence we planned for free vastuslateralis muscle flap for reconstruction of fistula. Vastus lateralis muscle flap derives its robust blood supply from descending branch of lateral circumflex femoral artery with good length of pedicle free segmental muscle flap can be used for reconstruction of recalcitrant palatal defects,.

**CONCLUSION:** To conclude free vastus lateralis muscle flap can be a good option for reconstruction of oronasal fistula without any significant morbidity.

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## CASE REPORT

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**Fig. 1: Oronasal fistula with Prosthesis insitu**



**Fig. 2: Oronasal Fistula**



**Fig. 3: Congested flap Post-operative day 6**



**Fig. 4: Well settled flap with Mucosalisation over the surface of flap**



**Fig. 5: Donor site**

## CASE REPORT

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