The Use of Buccal Fat Pad (BFP) As a Pedicled Graft for Cleft Palate Repair

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Abstract :

Background: Cleft palate is a congenital anomaly leading to physical, social and psychological deficits. Early repair before child start speaking is ideal. Many patients especially with wide clefts may develop lateral fistula as a complication of surgery. Buccal Fat Pad is versatile tissue which can be used for closure of lateral fistulas at time of palatoplasty. **Patients & methods:** 3 cases of isolated cleft palate are presented that were operated for cleft palate repair. **Results:** All patients had uneventful recovery and satisfactory healing. Speech results are also favorable. **Conclusion:** Use of BFP is versatile and easy method with no donor site deformity and minimal complications. We recommend use of BFP for cleft palate repair.

Key Words : Buccal Fat Pad, Cleft Palate Repair, Langenback's V-Y pushback palatoplasty

Introduction :

Incidence of cleft palate is 1-2.5 per 1000 live births. Cleft palate is congenital condition which leads to physical and psychological deficits, although early and prompt intervention results favorable outcomes. The buccal fat pad (BFP) as pedicled graft was originally used in reconstructing medium sized intraoral defects. Promising results of use of BFP in cleft palate surgery have been published recently. The aim of this article is to report on the use of BFP as a pedicled graft in cleft palate surgery and to discuss promising results for this reconstructive surgical concept.

Case reports

Case I

20 year old female patient reported with complaint of nasal regurgitation and abnormal speech with nasal twang. There was no significant past medical or family history. On general examination she has all normal parameters. On local examination we found isolated cleft palate, soft palate and uvula were involved along with portion of hard palate. Velopharyngeal insufficiency was noted. She was worked up for routine investigations for general anesthesia including CBC, LFT, RFT and chest X ray. That was found to be normal. She was worked up to rule out any other congenital anomalies; which were not detected. She was operated under GA Langenback's V-Y pushback palatoplasty. BFP was used bilaterally for closure of lateral fistulae. Closure was done with 4-0 vicryl sutures. She was managed peri-operatively with IV fluids, IV antibiotics, analgesics and antacids. She was given liquid diet for 15 days to avoid infection. Her recovery was uneventful. After healing phase she was started on speech therapy.

Case II

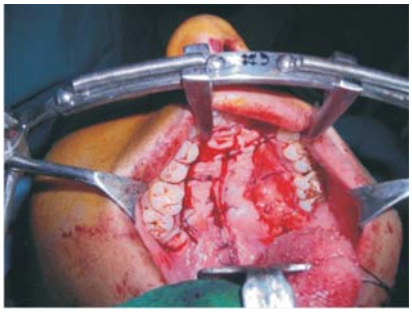
5 yr old male child reported with complaint of nasal regurgitation. There was no significant past medical or family history. On general examination he has all normal parameters. On examination we found isolated cleft palate. He was worked up for routine investigations. He was worked up to rule out any other congenital anomalies; which were not detected. He was operated under GA for Langenback's V-Y pushback palatoplasty. BFP was used bilaterally for closure of lateral fistulae. His recovery was uneventful. After healing phase he was started on speech therapy.

Case III

11 month old female child reported with complaint of nasal regurgitation. There was no significant past medical or family history. On general examination she has all normal parameters. On examination we found isolated cleft palate. She was worked up for routine investigations. She was worked up to rule out any other congenital anomalies; which were not detected. She was operated under GA for Langenback's V-Y pushback palatoplasty. BFP was used bilaterally for closure of lateral fistulae. Her recovery was uneventful. After healing phase she was started on speech therapy.

Photograph 1 A & 1B: Pre-operative intraoral photograph of Patient showing isolated cleft palate

Photograph 2: Immediate post-op photo of patient showing V-Y pushback plasty with BFP laterally sutured



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Photograph 3: Post op clinical photo of patient after 15 days shows well epithelialized BFP and satisfactory healing

Discussion

BFP has been used for various purposes as intraoral reconstructive option. The anatomy of the buccal fat pad is delineated and its relationship to the masticatory space, facial nerve, and parotid duct is defined. Buccal fat pad is vascularised pad of fat seen in infants and with age amount of fat decreases. The flap was first introduced by Egyedi in 1977. [1] BFP separates the masticatory muscles and acts as guard or bursa for smoother movements of coronoid process. The fat tissue is of the syssarcosis type, not subject to lipid metabolism, resembling periorbital fat tissue and can be easily distinguished from subcutaneous fat tissue. [2] [3] The BFP consists of an encapsulated body with 4 extensions: buccal, pterygoid, superficial, and deep temporal. The blood supply to the BFP derives from the buccal and deep temporal branches of the maxillary artery, from the transverse facial branch of the superficial temporal artery, and from some small branches of the facial artery

There are 3 approaches to harvest BFP [2]

1. Incise buccal mucosal membrane 1cm below the opening of parotid duct (Matarasso's method)
2. Incise behind the opening of parotid duct (Stuzin's method)
3. Incise superior gingivobuccal sulcus

BFP is widely used as reconstructive option in various conditions such as OSMF, oro-antral fistula, [4] palatal defects, [5] oral reconstruction, [6 8] cleft palate repair [9, 10] etc. BFP can be applied in areas ranging from the mouth angle to the retromolar trigone and palate.

There are various methods used for cleft palate repair. Most popular methods for cleft palate closure being Veau Wardill Kilner's repair, 2 flap palatoplasty by Sailor, Von-Langenback's technique, ect. We commonly use Sailor's method. Most common complication; which may occur during and after surgery especially in wide clefts is lateral palatal defects and fistula. [11,12] And if the lateral defects are allowed to heal by secondary intention, scarring may be severe and velopharyngeal insufficiency may occur. [13]

We recommend use of BFP for closure of lateral fistula that gives favorable outcomes. Primary closure would be achieved, chances of secondary hemorrhage will be reduced and resultant scarring will be less. After healing, mucosalisation of BFP occurs very nicely. Speech of these patients would also be better due to less scarring.

All our patients had wide cleft palate. We used BFP in them for closure of lateral palatal defects and primary closure was achieved. Speech results are also better with them.

Conclusion

Use of BFP is very promising in various aspects of maxillofacial surgery. Instead of leaving lateral defects raw, BFP may be used for bridging the gap which leads to better healing and least post-operative complications. We recommend use of BFP for closure of lateral fistulae in cleft palate repair.

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