

## CASE REPORT

# Surgical Repair of Nasal Vestibular Stenosis—A Case Report

Beenish Nisar Ahmed<sup>1</sup>, Muhammad Yasir Khan<sup>2</sup>

## ABSTRACT

Vestibular stenosis is an uncommon but debilitating cause of nasal obstruction leading to serious impairment of airway. It is caused by granulation and fibrosis of vestibular lining and there is circumferential scar retraction in the inlet of nasal cavities. Stenosis may be congenital or acquired. Causes of acquired stenosis include burns, trauma, infections, and iatrogenic insult to the lining of vestibule. Surgical correction is usually done by excision of fibrous tissue. A number of studies have been reported on surgical correction but not a single technique is widely accepted due to different diseases and different levels of deformities. Here we are suggesting a technique in which flaps have been raised and scar fibrous tissue is removed. This technique gives a good outcome and satisfactory result in a patient with post traumatic unilateral stenosis.

**Key Words:** Acquired, nasal obstruction, nasal vestibule, stenosis, surgical correction

**How to cite:** Ahmed BN, Khan MY. Surgical repair of nasal vestibular stenosis—a case report. *Ann Jinnah Sindh Med Uni.* 2022;8(2):80-81

DOI 10.46663/ajsmu.v8i2.80-81

## CASE

A six years old child presented with right-sided nasal obstruction, which was there for the last three years. According to the history given by parents, the child had the unusual habit of inducing trauma to the nose with blunt things, and then nose pinching after a history of fall and right sided nasal vestibular wound followed by the development of the closure of right nostril, which was noticed by the mother.

On performance of cold spatula test, minimal fogging was found on the right nostril. The patient was not very cooperative for diagnostic endoscopy, but on anterior rhinoscopy one can appreciate the stenosis. As there was no clear history, computed tomography (CT) scan of nose and paranasal sinuses was done to evaluate further. After all diagnostic investigations, nasal vestibular stenosis was confirmed and patient was prepared for surgical excision of stenotic segment under general anesthesia.

Under general anesthesia, 2% lignocaine was injected and diagnosis was also confirmed by doing diagnostic endoscopy. Vestibular pedicle flaps were raised by giving cross incision and fibrotic segment was excised.

Flaps were then repositioned using vicryl suture and stenting was done with trimmed silastic nasopharyngeal airway for two weeks. After two weeks, nasal stent was removed in general anesthesia and a Mitomycin-C soaked pack was placed for two minutes in the raw area. After regular follow up, the patient was found to have good improvement with the patent nostril.

## DISCUSSION

Stenosis of canal is difficult to treat and needs surgical expertise. Stenosis of tubular canals tends to resist, fibrous tissue contracts concentrically leading to constriction and stenosis<sup>1</sup>. Nasal vestibular stenosis may be acquired or congenital. Trauma caused to nostrils results in the narrowing of vestibules and may lead to stenosis. Vestibular stenosis is uncommon and becomes a difficult problem in children<sup>2</sup>. Taking proper care of children's noses by using saline drops and regular cleaning by otorhinolaryngologist is required to prevent restenosis. Multiple surgical approaches have been described for repair like modified Z-plasty, skin grafts, and intranasal local flaps<sup>3,4</sup>. Raising vestibular pedicle flaps, a technique giving good results, is used in our case report, and has showed satisfactory results<sup>4,5</sup>. This procedure results in improvement of nasal obstruction functionally and aesthetically.

---

Assistant Professor, ENT Consultant<sup>1</sup>, and Associate Professor, ENT Consultant<sup>2</sup>, KRL Hospital, Islamabad, Pakistan

**Correspondence:** Beenish Nisar Ahmed, Assistant Professor, ENT Consultant<sup>2</sup>, KRL Hospital, Islamabad, Pakistan

**Email:** drbeenishnisar.ahmed@gmail.com



Figure 1: Preoperative Endoscopic View of Right Vestibular Stenosis



Figure 2: During Operation View of Raising Flap



Figure 3: Schematic Diagram For Surgical Correction. Nasal Vestibular Pedicle Flaps Were Raised, Stenotic Segment Exposed, and Flaps Repositioning Was Done



Figure 4: Computed Tomography Scan Findings of Vestibular Stenosis



Figure 5: Healing Phase Postoperative Endoscopic View

## CONCLUSION

Stenosis of nasal vestibules is a condition that requires proper surgical expertise to treat successfully. Topical application of Mitomycin-C also helps in improvement. Nasal trauma should be treated carefully in paediatric populations with regular follow-up visits.

**Conflict of Interest:** The authors declare that they have no conflict of interest.

**Author's Contribution:** BNA surgical procedure, conception of case report, drafting and revising of the manuscript. MYK reviewed the surgical procedure, drafting and the final case report.

## REFERENCES

1. Yoon BW, Kim DW, Choi SJ, Cho KS. Iatrogenic nasal vestibular stenosis after maxillofacial reconstructive surgery. *Braz J Otorhinolaryngol.* 2016;84(1):126-30. doi: 10.1016/j.bjorl.2015.10.015.
2. Cagici CA, Karabay G, Yilmazer C, Gencay S, Cakmak O. Electron microscopy findings in the nasal mucosa of a patient with stenosis of the nasal vestibule. *Int J Pediatr Otorhinolaryngol.* 2005;69(3):399-405. doi: 10.1016/j.ijporl.2004.09.010.
3. Salvado AR, Wang MB. Treatment of complete nasal vestibule stenosis with vestibular stents and mitomycin C. *Otolaryngol Head Neck Surg.* 2008;138(6):795-6. doi: 10.1016/j.otohns.2008.02.005.
4. Choudhury N, Hariri A, Saleh H. Z-plasty of the alar subunit to correct nasal vestibular stenosis. *Otolaryngol Head Neck Surg* 2014;150(4):703-6. doi:10.1177/0194599813520296.
5. Karen M, Chang E, Keen MS. Auricular composite grafting to repair nasal vestibular stenosis. *Otolaryngol Head Neck Surg.* 2000;122(4):529-32. doi: 10.1067/mhn.2000.104631.