

Study finds technique for nasal obstruction helps patients breathe easier

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Z-plasty, a minimally invasive surgical technique to treat internal nasal valve collapse, showed significant improvement in relieving nasal obstruction with less recovery time compared to more traditional open rhinoplasty, according to a research study by Rush University Medical Center. The study findings are published in the May 21 issue of the *Archives of Facial Plastic Surgery*.

The nasal valve plays a crucial role in determining the airflow characteristics of the nasal airway. Internal nasal valve collapse is one of the most common causes of nasal obstruction that can result in significant and problematic changes in airflow. It is the most common condition that leads to nasal valve surgery. The traditional surgical approach, open nasal surgery, or rhinoplasty could alter the external appearance of the nose.

Z-plasty is a minimally invasive procedure most often used by surgeons for scar revisions. It is performed entirely from inside of the nose under local anesthesia with conscious IV sedation. The technique involves the creation and transposition of two triangular flaps which widen the valve angle and create a subtle tip rotation in order to improve nasal airflow. Small, Z-like incisions are made in the cartilage located inside the nostril of the nose to allow a segment of the upper cartilage of the nose to be removed. The flaps are then sutured into position.

“The Z-plasty is conceptually a novel technique to repair nasal valve collapse when compared with existing techniques,” said Dr. Jay M.

Dutton, an otolaryngologist at Rush.

Z-plasty has been well-described for nasal valve stenosis, a condition in which the nasal cavity is too narrow and other cleft nasal deformities. However, there is little information in the medical literature on the use of Z-plasty for nasal obstruction so Dutton and his colleagues performed a retrospective chart review on 12 patients undergoing the intranasal Z-plasty procedure over a 24-month period. Most patients had been treated with prior medical and surgical therapies that were not effective.

Patients were asked pre- and post-operatively to assess their nasal obstruction on a scale of zero-to-ten, with ten being total nasal obstruction and zero being perfect nasal airflow. The mean preoperative score was 7.17. After the procedure, the mean postoperative score was 3.25. Eleven patients noted significant improvement in airflow on both sides with the remaining patient noting significant improvement on one side. None of the patients complained of the postoperative appearance of their noses.

All 12 patients had previously underwent some type of surgical procedure such as rhinoplasty, septoplasty, turbinoplasty or endoscopic sinus surgery, but none of the procedures improved their complaints of nasal obstruction.

“With open rhinoplasty, patients have to endure extended healing times, extensive tissue dissection, grafting and use of foreign bodies for valve suppression – all of which can lead to major complications and alter the physical appearance of the nose,” said Dutton. “The Z-plasty is relatively quick, painless, less invasive, and appears to be efficacious for nasal valve obstruction,” said Dutton.

Source: Rush University Medical Center

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