

# MANAGEMENT OF NASAL VALVE DYSFUNCTION

Lutfullaev Umrillo Lutfullaevich  
Kobilova Shakhodat Shokirovna  
Ulashev Kmariddin Utkirovich  
Turobov Xujamkul Turg'unalievich  
Ubaydullaev Doniyor Ubaydullaevich  
Samarkand State Medical University

## Abstract

Nasal airflow and general quality of life can be significantly impacted by nasal valve dysfunction. Both internal and external valves are part of the nasal valves, and they are both essential for controlling nasal airflow. The external nasal valve's subclassification into rim and alar valves aids in identifying the obstruction site when it occurs and guides the surgical intervention selection. It is important to distinguish between static blockage, which is related to nasal valve stenosis, and dynamic obstruction, which is frequently characterized by inspiratory collapse of the nasal valve. For nasal valve dysfunction to be effectively managed, its location and mechanism must be accurately determined. Numerous surgical techniques can result in positive functional outcomes by focusing on particular nasal valve components. The patient's external nasal characteristics and the nature of nasal valve dysfunction should be taken into consideration when choosing surgical techniques, either separately or in combination. Achieving the best possible treatment results requires strict adherence to appropriate surgical practices.

**Keywords:** Rhinoplasty, Nasal Obstruction, Nasal Valve, Dysfunction.

## Introduction

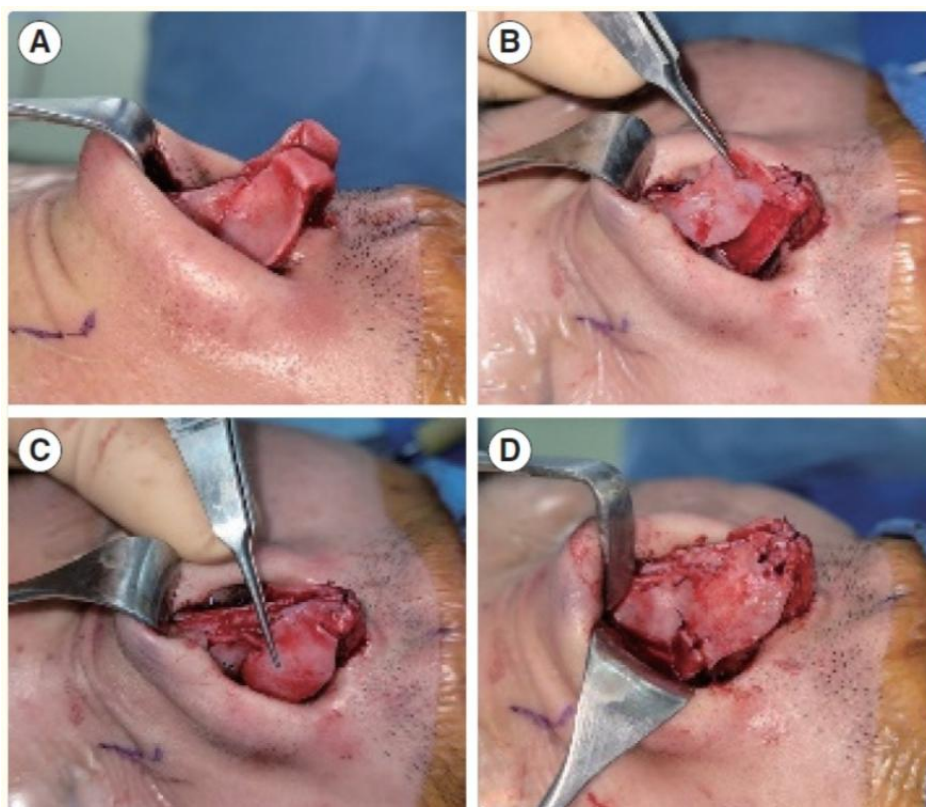
The internal and external nasal valves are the two main types of nasal valves. The nasal septum on the medial side, the caudal border of the upper lateral cartilage on the lateral side, and the inferior turbinate on the inferior side define the internal nasal valve, which is situated around 1.5 cm from the nostril [1,2,7-9]. The internal nasal valve's anatomical features are reflected in its typical angle, which falls between 10° and 20° [3,4,5,10]. The external nasal valve, on the other hand, is frequently referred to as the nasal entrance. The posterior aspect of the internal nasal valve, the alar rim on the lateral side, and the columella and medial footplate on the medial side frame it [11]. It is important to take into account racial differences in nasal valve structure [6,12]. Prior studies have shown that Asians and Caucasians have significantly different nasal valve angles; in one study, Asians' internal nasal valve angle was roughly 22.0°, while Caucasians' was 15.5° [10]. Furthermore, Asians typically have thicker skin, which may assist keep the lateral nasal wall from collapsing [13,14]. As a result, Asians might have fewer problems with their nasal valves than Caucasians. The selection of surgical techniques to treat nasal valve dysfunction is significantly influenced by these anatomical variations.



Nasal valve dysfunction is treated using a range of methods worldwide. Finding the root causes of nasal obstruction, distinguishing between static and dynamic obstructions, and precisely locating the dysfunction's anatomical site are all crucial to choosing the best surgical treatment. Furthermore, the patient's visual appearance may be affected by surgical procedures. Therefore, it is crucial to assess any concomitant nasal abnormalities and take into account the possible aesthetic alterations connected with each choice in order to determine which operation is best for the patient. The management of nasal valve dysfunction is thoroughly covered in this paper, with a focus on choosing among a variety of popular surgical approaches.

### Lateral crural flip-flop method

By correcting concavity, the lateral crural flip-flop procedure restores the alar valve's appropriate support. This method works when recurvature—the paradoxical concavity of the lateral crura—is the cause of alar valve collapse. The vestibular mucosa is preserved while the distorted section of the lateral crura is excised to address the collapse. The concavity is then turned inward by inverting the removed cartilage. To provide stable attachment, this cartilage is next sutured to the remaining lower lateral cartilage (Fig. 1). One advantage of the lateral crural flip-flop technique is that it does not require further cartilage removal. To offer support, the cartilage that is to be flipped must, nevertheless, have sufficient structural integrity. If this isn't the case, other methods to strengthen the lateral cartilages could be used, like onlay grafts or lateral crural strut grafts.



**Fig.1. Lateral crural flip-flop. (A) Deformed lateral crura. (B) Excision of the deformed segment of cartilage. (C) Flipping of the excised cartilage. (D) Suturing of the excised cartilage to the lower lateral cartilage.**



### Conclusion

The nasal valve affects nasal breathing and general quality of life by preserving the nasal airway. Patients who complain nasal blockage should be evaluated for nasal valve dysfunction. Our review concentrates on standard practices used to address nasal valve problems. We also examine the classification of the nasal valve and the causes behind its malfunction. When choosing surgical procedures, a comprehensive understanding of the nose anatomy and underlying mechanics is essential. It is also necessary to determine the location of nasal valve dysfunction and evaluate any concomitant nasal abnormalities. This thorough knowledge enables surgeons to choose the best course of action for every patient, resulting in both symptom alleviation and cosmetic satisfaction.

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