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Research Article

**ANALYSIS OF SEPTAL DEVIATION AND NASAL VALVE  
COLLAPSE; DIAGNOSIS AND MANAGEMENT IN  
PAKISTAN**Dr Asad Mahmood<sup>1</sup>, Dr Kulsoom Bibi<sup>2</sup>, Dr Saima Akbar<sup>3</sup><sup>1</sup>Islam Dental College, Sialkot<sup>2</sup>Rawalpindi Medical University, Rawalpindi<sup>3</sup>Women Medical Officer at RHC Rasoolpur Tarar, Hafizabad**Article Received:** November 2019 **Accepted:** December 2019 **Published:** January 2020**Abstract:**

**Introduction:** Septal deviation is a common cause of nasal obstruction, present in up to 80% of the general population. **Aims and objective:** The main objective of the study is to assess the septal deviation and nasal valve collapse; diagnosis and management in Pakistan. **Material and methods:** This descriptive study was conducted in Islam Dental College, Sialkot during March 2019 to November 2019. The data was collected through a questionnaire. The survey was divided into the following areas: diagnosis, management, and prognosis. All questions were mandatory, and additional responses could be added if required. **Results:** Eighty-six otolaryngologists responded to our survey from a total of 489 invitations (18%). Respondents were General Otolaryngologists, Facial Plastics and Reconstruction Surgeons (FPRS), and Rhinologists, with the majority having less than 10 years of experience. Type of practice was evenly distributed between community, office and hospital. **Conclusion:** It is concluded that NVC is an important concern for otolaryngologists performing septoplasty. Although most physicians indicate a moderate effectiveness of the physical exam, diagnostic procedure for NVC is variable.

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**INTRODUCTION:**

Septal deviation is a common cause of nasal obstruction, present in up to 80% of the general population. However, many cases of septal deviation are asymptomatic, and the degree or severity of deviation has little to no correlation with the degree of obstruction. This paradox creates a diagnostic dilemma for some patients and surgeons. Not all patients, regardless of symptoms demonstrate an improvement as patient satisfaction after septoplasty ranges between 65 to 80% [1].

One potential cause of treatment failure may be misidentification of other comorbid causes of nasal obstruction, specifically nasal valve collapse (NVC). Concurrent NVC is often viewed as an important feature to identify prior to a septoplasty to prevent need for revision surgery [2]. Clinicians have developed several physical examinations to assess and diagnose NVC. However, a consensus statement by the American Academy of Otolaryngology – Head and Neck Surgery (AAO-HNS) states that although many such tests are available, there is no gold standard [3].

Common tests for diagnosis include the Cottle manoeuvre (cheek displaced laterally with the fingers) and the modified Cottle manoeuvre (ear curette used to support the lower lateral cartilage). Bachman's Maneuver, although less commonly used and often confused with the Modified Cottle Maneuver, involves digital pressure on the tip of the nose, pushing the nose upward in the sagittal plane (ie a pig nose appearance) [4].

Typical signs of nasal valve stenosis include nasal congestion and pronounced difficulty in breathing

inward from the nose. Patients with nasal valve collapse may have a difficult time breathing during physical activities, as though they have a clothespin on their nostrils. Keep in mind, some NVC is expected during strenuous activities, but significant obstruction shouldn't occur. These symptoms can make physical activities more difficult while for others, it may prevent them from participating altogether [5].

**Aims and objective**

The main objective of the study is to assess the septal deviation and nasal valve collapse; diagnosis and management in Pakistan.

**MATERIAL AND METHODS:**

This descriptive study was conducted in Islam Dental College, Sialkot during March 2019 to November 2019. The data was collected through a questionnaire. The survey was divided into the following areas: diagnosis, management, and prognosis. All questions were mandatory, and additional responses could be added if required. Data was exported to excel (Microsoft©, 2018) and Minitab 18 (Minitab Inc) for analysis. Survey data that included continuous data was assessed using an ANOVA for normally distributed data.

**RESULTS:**

Eighty-six otolaryngologists responded to our survey from a total of 489 invitations (18%). Respondents were General Otolaryngologists, Facial Plastics and Reconstruction Surgeons (FPRS), and Rhinologists, with the majority having less than 10 years of experience. Type of practice was evenly distributed between community, office and hospital.

**Table 01:** Methods Used to diagnose Nasal Valve Collapse in a typical clinical encounter

Examination*	Internal		External	
	n	% Total	n	% total
Visual Inspection	80	93.0%	78	90.7%
Cottle Maneuver	48	55.8%	33	38.4%
Modified Cottle Maneuvre	34	39.5%	31	36.0%
Failed Septoplasty	38	44.2%	20	23.3%
Bachman's	10	11.6%	10	11.6%
Trial of BreathRight	2	2.3%	0	0.0%
Fiber-optic Nasalaryngoscopy	0	0.0%	0	0.0%
Acoustic Rhinometry	2	2.3%	2	2.3%

Table 02: Most Important finding indicating need for Functional Rhinoplasty

	Total		General		FPRCS		Rhinology	
	n	%	n	%	n	%	n	%
Collapse on Inspiration	42	48.8%	32	66.7%	8	44.4%	2	10.0%
Cottle Maneuver	6	7.0%	4	8.3%	0	0.0%	2	10.0%
Modified Cottle	2	2.3%	2	4.2%	0	0.0%	0	0.0%
Static Narrow Nasal Valve	8	9.3%	0	0.0%	2	11.1%	6	30.0%
Severe Nasal Symptoms	12	14.0%	6	12.5%	2	11.1%	4	20.0%
Location of Septal Deviation	4	4.7%	2	4.2%	2	11.1%	0	0.0%
Failure of Septoplasty	4	4.7%	0	0.0%	4	22.2%	0	0.0%
No Answer	6	7.0%	2	4.2%	0	0.0%	4	20.0%

Our survey demonstrated that the Cottle Manoeuvre is both a common and important tool for NVC diagnosis. These findings are consistent with a recent systematic review, which demonstrated that the Cottle Manoeuvre was the most common method used to determine whether a patient required surgical repair [6]. This manoeuvre however, has been described in literature as non-specific, as many patients without NVC will also feel an improvement in airway patency. Furthermore, false negatives can occur such as in the case of osteum internum fibrosis [7]. A recent study demonstrated no change in outcome in surgical success after a septoplasty in patients with either positive or negative Cottle Manoeuvre [8]. These results put into question the utility of the notion that patients with a positive Cottle Manoeuvre, when used as a single examination, truly benefit from anything more than a septoplasty.

Interestingly, there were differences in opinions between subspecialties. FPRS indicated a higher failure rate of septoplasty alone, as well as a higher percentage of patients who require nasal valve surgery than other subspecialties [9]. There may be multiple reasons for this discrepancy. First, the indication for referral to subspecialists may vary, such as nasal polyps referred to Rhinology versus nasal trauma referred to FPRS. Furthermore, more complicated cases of NVC may be referred to FPRS from other otolaryngologists, and both patient and physician may be more open to surgery as a final option. FPRS also perform more nasal valve surgeries, which may be due to a higher number of referrals for NVC than other otolaryngologists. It is also important to note that our results may also

suggest a difference in protocol for diagnosis and management of NVC between specialists [10].

#### CONCLUSION:

It is concluded that NVC is an important concern for otolaryngologists performing septoplasty. Although most physicians indicate a moderate effectiveness of the physical exam, diagnostic procedure for NVC is variable.

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