

# Rigid Nasal Endoscopy in the Diagnosis and Treatment of Epistaxis

VINAY KUMAR M.V., RAGHAVENDRA PRASAD K.U., BELURE GOWDA P.R., MANOHAR S.R., CHENNAVEERAPPA P.K.

## ABSTRACT

**Background and Objectives:** Epistaxis is one of the common symptoms encountered in the Otorhinolaryngology department. Many times the cause for epistaxis is not found on anterior and posterior rhinoscopy. The present study was undertaken to assess the role of rigid nasal endoscope in the diagnosis and treatment of epistaxis, where normal anterior and posterior rhinoscopy did not reveal any specific finding.

**Methods:** Fifty patients with epistaxis were studied using rigid nasal endoscope under local anaesthesia. Patients who were above 15 years with nasal bleeding and who were willing for rigid nasal endoscopy were included in the study. Patients less than 15 years were not included in the study because nasal endoscopy was difficult in them under local anaesthesia. Only those patients in whom, the cause for epistaxis could not be made out on anterior and posterior rhinoscopy were chosen for the study, this was done in order to remove the bias for nasal endoscopy.

**Results:** The use of the nasal endoscope allowed diagnosis of bleeding points and treating them directly. Epistaxis was more in male patients especially in the 3<sup>rd</sup> and after the 5<sup>th</sup> decade. On endoscopic examination, the bleeding points were identified as coming from the crevices of the lateral nasal wall, posterior spur on the septum, posterior deviation of the septum with ulcer, congested polyps, enlarged and congested adenoids, scabs or crusts in the crevices of the lateral nasal wall and angiofibroma. Endoscope also helps in the treatment of epistaxis, which includes endoscopic selective nasal packing using gelfoam, endoscopic cautery or diathermy and endoscopic polypectomy. Other patients with adenoids, scabs and crusts and angiofibroma were managed on their merits.

**Interpretation and Conclusion:** Nasal endoscopy helps not only in the localisation of the bleeding point but also in the treatment of those bleeding areas that are situated in the posterior and lateral part of the nose.

**Key Words:** Epistaxis, Rigid nasal endoscope, Selective nasal packing, Cautery or diathermy

## INTRODUCTION

Bleeding from inside the nose is called epistaxis [1]. It is a common clinical condition and not a specific disease process, but it is essentially a symptom complex. It is the most frequent emergency in Otorhinolaryngology, presenting with a prevalence of about 10% to 12% [2].

Most of the time, we are able to locate the cause or the bleeding point, but we are not always fortunate. One of the principal reasons being the poor visualization of the covert areas of the nose, which are situated in the deep crevices of the lateral wall of the nose. Anterior and posterior rhinoscopy thus, has its limitations. The availability of the nasal endoscope has been a boon to the otolaryngologist, since it not only helps in a proper visualization, but also offers a direct mode of treatment to the area that is now accessible [3,4].

## METHODOLOGY

Fifty patients were selected randomly from among the patients who presented with a history of epistaxis, to the OPD and to the indoor ward of the Otorhinolaryngology Department, Hassan Institute of Medical Sciences, Hassan, India. The patients who were less than 15 years of age were not included in the study, because doing a rigid nasal endoscopy under local anaesthesia was difficult in them.

An informed consent was obtained from each patient.

The first priority was given to arrest the bleeding and no attempt was made to assess the nose for the bleeding points in severe epistaxis. After the bleeding was controlled, a detailed clinical history of the patients was taken, followed by general and Otorhinolaryngology examinations. This was followed by thorough anterior and posterior rhinoscopies, in order to remove the bias for a nasal endoscopy. When no bleeding points were seen on the anterior and posterior rhinoscopies, nasal endoscopies were performed with rigid nasal endoscopes. The 0°, 30° and the 45° endoscopes were used. They were 4mm rigid nasal endoscopes (Storz). The 30° scope was commonly used. 4% xylocaine topical with no adrenaline or prior nasal drops was used. The patients were followed up at 1 week and 2 weeks with no further attempts, if no bleeding occurred [3]. Light cotton plugs were used to dab the bleeding points and no extra pressure was exerted, to avoid missing the bleeding points [3]. Then laboratory investigations were done, to rule out any systemic causes of the epistaxis.

### The diagnostic nasal endoscopy was undertaken in three steps [5,6]

- The first step consisted of an inspection of the nasal vestibule, the nasopharynx, and the inferior nasal meatus.
- This was followed by an examination of the sphenoethmoidal recess and the superior nasal meatus.
- Finally, an examination of the middle meatus was done.

The endoscope also helped in the management of the bleeding points. When the bleeding points were identified, indirect pressure was applied on the bleeding points by using small balls of cotton [3], a selective nasal packing with gelfoam [6,7], nasalcautery or diathermy [6,8-12]. This helped in the stoppage of the bleeding in many cases. There are many other methods that can be applied for the treatment of these cases, like lasers [11,13,14], cryotherapy, endoscopic ligation of the sphenopalatine artery [15], and endoscopic ligation of the ethmoidal arteries [15,16]. As these facilities were not available in our hospital, the above mentioned procedures were not done.

## RESULTS

### Endoscopic Diagnosis

Fifty patients who were chosen for the study, underwent endoscopic examinations and the following findings were seen. 14 patients had high bleeding points in the cervixes of the lateral nasal wall (28%). 12 patients had bleeding from the spur, on the posterior part of the nasal septum (24%). 6 patients had bleeding from the small ulcers which were seen just posterior to the deviation of the posterior part of the septum (12%). 6 patients had bleeding from the congested polyps in the middle meatus (12%). Congested adenoids were seen in 6 patients from where the bleeding was coming (12%). 4 patients had scabs and crusts in the lateral nasal wall (8%). 2 patients had angiofibroma, which was presented just posterior to the middle turbinate (4%). The results have been shown in [Table/Fig-1].

### Endoscopic Management of the Epistaxis

Endoscopic nasal cautery or diathermy was done in 12 patients (24%). This was done mainly for the patients who had bleeding from the spur. An endoscopic selective nasal packing with the use of gelfoam was done in 20 patients (40%). This was done mainly for the patients who had bleeding points high in the crevices of the lateral nasal wall and also with a posterior deviation of the septum with ulcer. Endoscopic polypectomies were done for 6 patients (12%). The remaining 12 patients were managed according to the diagnosis. 6 patients (12%) who had adenoids were subjected to adenoidectomies. 4 patients (8%) who had scabs or crusts in the crevices in the lateral nasal wall were asked to do nasal douching regularly. 2 patients (4%) underwent excision of the angiofibromas. The results have been given in [Table/Fig-2].

## DISCUSSION

The nasal endoscope has been a boon to the otolaryngologist, since it not only helps in the proper visualization of the bleeding sites, but also offers a direct and an early facility of the treatment to an area that was once difficult to access [3,7,17-19].

### Endoscopic Diagnosis

Out of the 50 patients in this study, 14 patients had bleeding points in the lateral nasal wall crevices, which included the lateral lamella of the inferior turbinate, the middle and the superior turbinates, the inferior meatus, the middle meatus and the superior meatus [3,7,13].

Twelve patients had bleeding from the spur, which was located in the posterior third of the septum [1]. The bleeding which arose from the spur was mainly due to the stretching of the blood vessels over the spur. These vessels were thinned out and they ruptured easily. This was also a cause of the repeated epistaxis [1].

Sl No	Endoscopic Diagnosis	Number of patients	Percentage
1	Bleeding point in the cervixes of the lateral nasal wall	14	28%
2	Posterior spur on the septum	12	24%
3	Posterior deviation of septum with ulcer	6	12%
4	Congested polyps in middle meatus	6	12%
5	Enlarged and congested adenoids	6	12%
6	Scabs or crusts in crevices in lateral nasal wall	4	8%
7	Angiofibroma	2	4%

[Table/Fig-1]: Endoscopic Diagnosis

Sl No	Endoscopic Treatment	Number of Patients	Percentage
1	Endoscopic nasal cautery or diathermy	12	24
2	Endoscopic nasal packing (gelfoam packing)	20	40
3	Endoscopic polypectomy	6	12
4	Other treatment		
	a) Adenoidectomy	6	12
	b) Nasal douching	4	8
	c) Excision of angiofibroma	2	4

[Table/Fig-2]: Endoscopic Management of Epistaxis

Six patients had bleeding from the ulcers, which were present posterior to the deviation of the septum. Deviation of the septum causes the air current to deflect in such a way as to cause a drying effect, leading to the formation of crusts, the falling of which may produce ulcerations and bleeding [1].

Six patients had enlarged and congested adenoids [3,6]. Since no other positive finding was seen, it was presumed that the chronic adenoiditis was probably the cause for the bleeding.

Six patients had congested small polyps in the middle meatus. The histopathological examination of these polyps revealed that they were infected polyps [3,6].

Scabs and crusts were seen in the crevices of the lateral nasal wall in 4 patients [3]. The falling of scabs and crusts might have produced the bleeding.

Two cases of angiofibromas were detected by nasal endoscopy, which arose from behind the middle turbinate. They appeared as small congested polyps. Later, CT scans were taken, which showed that the polyps arose from the sphenopalatine foramen [3,6].

### Endoscopic Management of the Epistaxis

An endoscopic selective nasal packing was done in 20 patients. These were the patients whose endoscopic diagnoses were bleeding points high in the lateral nasal wall crevices and posterior deviation of the septum with ulcer. A selective nasal packing was done with gelfoam, which is a dissolvable synthetic matrix that has a procoagulant effect. The gelfoam is available in variety of shapes and sizes. The gelfoam becomes nonadherent and it begins to dissolve in a matter of weeks. When the bleeding was identified as coming from the inferior meatus, the gelfoam was tightly packed under the inferior turbinate. If the bleeding was identified as coming from the middle meatus, it was packed with the gelfoam.

If the bleeding was coming from the ulcer, the gelfoam was tightly packed between the ulcer, on the nasal septum and the turbinates [3,7,13].

Endoscopic nasal cautery or diathermy was done for 12 patients. These were the patients, whose endoscopic diagnosis was a spur in the posterior part of the septum. The bleeding which came from the septal spur was cauterized by using nasal cautery or diathermy. Endoscopic cauterization of the bleeding site gave good results and the endoscope also helped in cauterizing the area of bleeding precisely [6,8,9,13,17]. Endoscopic polypectomies were done in 6 patients. These were the patients whose endoscopic diagnosis was congested polyps in the middle meatus. These polyps were sent for a histopathological examination, which were identified as infected polyps [3].

The patients who had congested adenoids were managed by conventional adenoidectomy. The patients with scabs and crusts in the crevices of the lateral nasal wall were advised about nasal hygiene and they were asked to do alkaline nasal douching. The patients who were diagnosed to have angiofibromas were subjected to excision of the angiofibromas and the specimens were sent for a histopathological examination, which confirmed them to be angiofibromas [3].

## CONCLUSION

This study was conducted to elicit the efficacy of nasal endoscopy in detecting the site and the possible hidden causes of the epistaxis, in the cases where the anterior and posterior rhinoscopies failed to give a cause. The anterior and posterior rhinoscopies give a very restricted view of the nasal cavity, resulting in poor visualization of certain areas. Due to this reason, the cause of the epistaxis remains an enigma. We found that the endoscope aided in seeing what the naked eye could not detect. It also helped in properly and effectively sealing the point, if it was seen, by applying direct pressure and by doing an endoscopic nasal packing or an endoscopic cautery or diathermy. With the advent of new treatment modalities like lasers and cryotherapy, even severe cases may be treated. However, nasal endoscopy is not a substitute for nasal packing. But as a greater emphasis has been laid down on the integrity of the nasal mucosa now in the endoscopic field, a nasal endoscope is the only hope for preventing trauma to the normal mucosa due to these packing materials and instruments.

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### AUTHOR(S):

1. Dr. Vinay Kumar M.V.
2. Dr. Raghavendra Prasad K.U.
3. Dr. Belure Gowda P.R.
4. Dr. Manohar S.R.
5. Dr. Chennaveerappa P.K.

### PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of ENT, Hassan Institute of Medical Sciences, Hassan, Karnataka, India.
2. Associate Professor, Department of ENT, Hassan Institute of Medical Sciences, Hassan, Karnataka, India.
3. Senior Resident, Department of ENT, Hassan Institute of Medical Sciences, Hassan, Karnataka, India.
4. Senior Resident, Department of ENT, Hassan Institute of Medical Sciences, Hassan, Karnataka, India.

5. Associate Professor, Department of Respiratory Medicine, Hassan Institute of Medical Sciences, Hassan, Karnataka, India.

### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Vinay Kumar M.V.,  
Assistant Professor, Department of ENT,  
Hassan Institute of Medical Sciences, Hassan, Karnataka, India.  
Phone: 09241380059  
E-mail: magicalmagnet@yahoo.com

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