

A Comparative Analysis of Endoscopic Versus Conventional Techniques in Septoplasty

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Abstract:

Background: Otorhinolaryngologist often deals with large number of population varied symptoms of nasal obstruction, headache, and epistaxis owing to deviated nasal septum (DNS) worldwide. Septoplasty is the surgical technique to relieve patient of symptoms and with the advent of endoscopes in modern era it has gained further popularity. clinical practice of otorhinolaryngology, otorhinolaryngologist commonly encounters cases of deviated nasal septum. Some of the patients have mild symptoms while others get troubled because of severity of disease. Hence it becomes important to diagnose the case timely and provide surgical treatment wherever needed.

Aims and Objectives: To elicit the comparison between conventional and endoscopic septoplasty and merits and demerits of both the techniques.

Material and Methods: The present study was conducted on 50 patients in DMCH Darbhanga, Laheriasarai.

Result and Conclusion: The results after septoplasty were better with endoscopic approach as against conventional one. The endoscopic technique had advantages of less complication rate and better teaching tool for demonstration. It has certainly proved its superiority over conventional approach. Refinements in management of rhinological cases have been revolutionized by the use of nasal endoscopes.

Keywords: Complication, Endoscopic Septoplasty, Headache, Nasal Obstruction, Deviated Nasal Septum.

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Introduction

In clinical practice of otorhinolaryngology, otorhinolaryngologist commonly encounters cases of deviated nasal septum. Some of the patients have mild symptoms while others get troubled because of severity of disease. Hence it becomes important to diagnose the case timely and provide surgical treatment wherever needed.

Deviated nasal septum can affect day to day life causing range of symptoms such as epistaxis, breathing difficulty, headache and various complications like sinusitis, disorders of sleep [1].

Nasal septal deviations play a critical role in nasal obstruction symptoms, aesthetic appearance of the nose, increased nasal resistance and sometimes snoring. [2]

With the advent of new techniques and introduction of advanced instruments the surgery of DNS has underwent various phases. To begin with submucous resection of septum was done which later on evolved to septoplasty. Each technique has its own advantages and disadvantages with SMR considered to be more radical and septoplasty being modified

version of SMR.

Septoplasty has proven to be more conservative surgery as compared to its predecessors with endoscopic septoplasty being more recent one and definitely weigh more in terms of advantages to patient [3]. Previous studies have shown that endoscopic septoplasty is useful in correction of posterior septal deformities, revision cases and as an effective teaching tool.

The use of endoscope is more effective in ensuring good vision, surgical exposure, lighting and protecting septal flap [4]. It has further lead to better outcome and understanding of anatomy of nose and paranasal sinuses thus breaking the vicious cycle of recurrent nasal and sinus infections.

In 71 percent cases the nasal symptoms were significantly reduced [5].

Aims and Objectives

The aim and objective of study was to determine the difference between conventional and endoscopic septoplasty and advantages and disadvantages of the two techniques.

Material and Methods

The present study was conducted on 50 patients of Darbhanga Medical College and Hospital Darbhanga, Laheriasarai. Study duration of Two years.

All the patients who presented to ENT outpatient department and diagnosed with deviated nasal septum after detailed history, clinical examination and appropriate investigations were divided into two comparable groups based on the surgical procedure they received. Each of the 25 patients underwent conventional and endoscopic septoplasty as per their assigned group. Patients were assessed for improvement in their pre-operative symptoms and post-operative complications in their subsequent follow ups for a period of 3 months after septoplasty and nasal endoscopic examination was also done in same sitting. The patients were diagnosed on the basis of their clinical features and routine radiological investigation such as X-ray PNS in all the cases and CT PNS in selected cases. The comparison was done in terms of the intraoperative visualization, illumination, amount of blood loss, method as teaching tool, postoperative complications etc. The results were analyzed and summed up in the form of quantitative and qualitative data.

Results

The male predominance was seen in present study with 29 males and 21 females. The most common age group was 11-20 and 21-30 year. Majority of the patients presented with nasal obstruction 43, Headache 29, postnasal drip 21.

The right sided deviation was more common as compared to left side. The hypertrophy of inferior turbinate was most commonly associated finding along with DNS. Among others concha bullosa, discharge in middle meatus and defect of uncinat process was present.

The amount of blood loss was more in conventional group as compared to endoscopic group.

Among postoperative results synechiae was found in 2 cases in endoscopic group and 6 in conventional group. The residual deviation was found in 1 case in endoscopic group and 7 cases in conventional group. Bleeding was seen in 1 case of endoscopic group and 4 cases of conventional group. The perforation of septum was seen in none of the cases in endoscopic group. One case of conventional septoplasty showed perforation of septum.

Discussion

The males were more as compared to females in our study. The overall male to female ratio was 1.38:1. The most common age group was 11-20 years and 21-30 years. This was observed in previous studies also [6]. The youngest patient was 14 year old and oldest was 50 year old. The number of patients in 11-20-year age group were 20, 21-30 year age group

were 18, 31-40 year age group were 6 and 41-50 year age group were 6 patients.

The merit of endoscopic technique is in management of deviation of posterior septum and easier accessibility to remote areas as compared to headlight method used since ages. Also the region of nasal valve can be visualized for septal deformity in a better way. Endoscopic septoplasty provides access in correcting deviated part of septum in an accurate manner and excellent visualization for harvesting graft precisely in septorhinoplasty without much complication. It was observed in our study that the rate of complications were higher in conventional group than endoscopic group [7].

The Endoscopy is used as tool for examining patients in outpatient department after septoplasty [8]. Endoscopy aids in better demonstration for undergraduates and guidance of junior residents in rhinological practice. Also, it allows understanding of pathology of lateral wall of nose along deformity of septum in a better way

As repair of deviation of nasal septum is achieved with least resection, there is lesser trauma to septum and thus reduction in blood loss and post-operative complications. The amount of blood loss is more in conventional group which is similar to previous studies [9]

Somehow, if there is any bleeder, cauterization can be done immediately under vision via endoscope and bleeding can be controlled early.

While doing surgery, it becomes easier for surgeon to look for the plane for raising mucoperichondrial and mucoperiosteal flaps hence minimal mucosal tears. This becomes more beneficial while operating cases of reoccurrence or trauma. Also, endoscopic approach of septoplasty provides an additional benefit of improved surgical transition between septoplasty and sinus surgery

The symptoms improved with better outcome in patients in endoscopic septoplasty group as compared to conventional group which is similar to previous studies [10].

It has been estimated that as many as one third of the population has some nasal obstruction, and as many as one quarter of these patients pursue surgical treatment. [11]

Endoscopic septoplasty as a minimally invasive technique can limit the dissection and minimize trauma to the nasal septal flap under excellent visualization whose primary advantage is to decrease morbidity and postoperative swelling in isolated septal deviation by limiting the excision to the area of deviation. [12]

The application of endoscopic techniques to the correction of septal deformity was initially described in 1991 by Lanza et al [13]

Conclusion

The endoscopic approach has proved to be advantageous in terms of better visualization on monitors helpful both for surgeon and assistants, good lighting arrangements, better surgical field, low postoperative complication rate. But it also needs lot of expertise, need to hold endoscope for longer time on one hand and frequent cleaning of tip of endoscope where there is more bleeding. However, it has certainly proved its superiority over conventional approach. Refinements in management of rhinological cases have been revolutionized by the use of nasal endoscopes.

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