

Septoplasty with Adenoidectomy: A Combined Procedure for Nasal Obstruction in Children

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ABSTRACT

Nasal obstruction in children is caused by numerous and diverse factors but the symptoms are essentially snoring, mouth breathing, sleep disturbances and rhinorrhea. The commonest causes of nasal obstruction in children are septal deviation and adenoid hypertrophy. Nasal septal deviation in children is usually due to some form of injury. Performing septoplasty alone in this age group without addressing adenoid may lead to recurrence of symptom i.e., nasal obstruction may lead to failure of procedure so we combine both procedures in single sitting. So we have conducted a study of combined septoplasty with adenoidectomy for relief of nasal obstruction in children aged 9-15 years.

Keywords: Septoplasty in children, adenoidectomy, nasal obstruction in children, combined procedure

Commonest causes of nasal obstruction in children are septal deviation and adenoid hypertrophy. Adenoids may be implicated in upper respiratory tract disease due to partial or complete obstruction of the nasal choana. Nasal obstruction in children is caused by numerous and diverse factors but the symptoms are essentially snoring, mouth breathing, sleep disturbances and rhinorrhea.

During the development of child mouth breathing may lead to severe physical developmental disorder (facial, oral nasal and thoracic) which may lead to the cognitive impairment.¹ Nasal septal deviation in children is usually due to some form of injury. There is much debate as to whether septal surgery is appropriate in the growing nose.² The main nasal growth center of the nose is contact area between quadrangular cartilage and vomer¹ and even minor disruption here can lead to significant problems with final midfacial contour.

Furthermore, evidence is available which states that not performing surgery on children affected by nasal

septal deviation can lead to dental malocclusion, facial abnormalities and respiratory morbidity. Therefore, not performing septal surgery in children affected by septal deviation may be more detrimental.² Generally if symptoms are significant a limited septoplasty with minimal removal of cartilage is acceptable.¹ Performing septoplasty alone in this age group without addressing adenoids may lead to recurrence of symptom i.e., nasal obstruction may lead to failure of procedure;¹ so we should combine both procedures in single sitting. Only septoplasty with adenoidectomy when done separately leads to recurrence or persistence of nasal obstruction in children. So we have conducted a study of combined septoplasty with adenoidectomy for relief of nasal obstruction in children aged 9-15 years.

MATERIAL AND METHODS

This study included 20 children between the ages of 9-15 years undergoing adenoidectomy with septoplasty for their obstructive symptoms in Chigateri General District Hospital from November 2010 to February 2012. Among this group there were 12 boys and 8 girls. Informed written consent taken from parents/guardians.

Children included in this study met the following criteria:

- Continuous nasal obstruction for at least 3 months due to deviated nasal septum (DNS).

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- Children without allergic rhinitis.

Exclusion criteria

- Isolated adenoid hypertrophy cases.
- Use of topical intranasal/systemic decongestants or steroids.

The patients had history of mouth breathing, snoring, headache and rhinorrhea. A lateral nasopharyngeal soft tissue X-ray was taken to evaluate the size of the adenoids; all children had considerable size of adenoids.

Adenoid facies and voice were evaluated. The ear was examined to look for eustachian tube dysfunction and its effects. X-ray paranasal sinuses (PNS) taken to rule out associated sinus infection, in needed cases nasal endoscopy is also done to rule out other causes like nasal polyps, and complete examination of ear nose and throat examination done.

All children were operated under general anesthesia, the septoplasty procedure was performed with minimal removal of cartilage with septal repositioning is done (up to 5 mm of inferior strip and posterior end of the cartilage was removed); nasal cavity is packed with Vaseline gauge. Then the children were put in Rose’s position and traditional adenoidectomy done, using technique of curettage. Assessment of the adenoid was made digitally prior to curetting, and hemostasis achieved with gauze tamponade.

The relief of nasal obstruction was assessed subjectively by follow-up of the children or parents postoperatively. The children were discharged on third day of surgery and advised for follow-up once weekly for 2-3 weeks and once in a month up to 6 months.

RESULTS

All the 20 children included in the study had nasal obstruction. Mouth breathing was seen in 18 children (90%). Snoring was the associated complaint in 16 children (80%) (Table 1).

On clinical examination all 20 children had septal deviation of various degrees. Rhinorrhea was seen in 16 children (80%), 8 patients had adenoid facies (40%). None of the children had caudal dislocation (Table 2).

Out of 20 children, 3 children could not be assessed for outcome of surgery since they dropped out of their follow-up, out of 17 patients, 9 children showed improvement after 1 week of surgery. The remaining 8 children showed relief of symptoms on the 2nd follow-up. Of these 4 patients who complained of snoring and restless sleep, showed marked symptom reduction

(as observed by the parents). Overall the combined procedure of septoplasty with adenoidectomy yielded good results in terms of nasal obstruction, mouth breathing and snoring. In 1st 2nd and 3rd weeks, 10%, 20% and 50% respectively, this can be explained due to postoperative blood clots, minimal adhesions and inadequate nasal douching.

Table 1. Symptoms

Symptoms	No of Patients	Percentage
Nasal obstruction	20	100%
Mouth breathing	18	90%
Snoring	16	80%
Rhinorrhea and headache	4	20%

Table 2. Clinical Examination

Sign	No of patients	Percentage
Septal deviation	20	100%
Adenoid facies	08	40%
Rhinorrhea	16	80%

Age of the child	Follow up			
	1st week	2nd week	3rd week	6 months
9-15 years	10%	20%	50%	90%



Figure 1. Gross DNS to the left with caudal dislocation in a 10-year-old patient.



Figure 2. X-ray nasopharynx showing adenoid hypertrophy.



Figure 3. Endoscopic view showing DNS with adenoid in a 9-year-old patient.

No major complications like postnasal bleeding, septal perforation, or external deformity were seen

DISCUSSION

The empirical indication for adenoidectomy includes obstructive sleep apnea, recurrent rhino- sinusitis and

otitis media with effusion.² The adenoids when diseased may act as source of infection, supporting bacteria in a biofilm with resultant inflammatory changes in the mucosa of nose, nasopharynx, PNS and middle ear.

Surgery is recommended by American Association of Otolaryngology-Head and Neck Surgery (AAO-HNS) for infective causes including adenoiditis, where two courses of antibiotics have failed and for recurrent rhinorrhea on 4 occasions.³ A deviated nasal septum alone is rarely significant enough to be the sole cause of obstructive breathing. Adenoidectomy appears helpful as a part of management of obstructive sleep apnea syndrome (OSAS) and sleep disordered breathing (SDB), but cross-sectional studies support the benefit of adenoidectomy and tonsillectomy performed together for OSAS and SDB.³

Therefore, a detailed examination is advised to exclude another cause or co-existing pathology that is adenoid hypertrophy prior to considering septoplasty.² During our clinical examination in outpatient basis, we have found adenoid hypertrophy even in children above 10 years of age. Septal deviations in children are very common and significantly contribute to nasal obstruction. In children having both septal deviations along with adenoid hypertrophy, either septoplasty or adenoidectomy alone may not give satisfactory results. Hence, septoplasty with adenoidectomy helps in relieving nasal obstruction in such children without any major complications.

CONCLUSION

We performed combined septoplasty with adenoidectomy in 20 children between 9-15 years of age with good results without any major complications. Subjective and clinical assessment in these children showed significant improvement in nasal obstruction and mouth breathing. There was also marked improvement in general health and scholastic performance after long-term follow-up. Septoplasty with adenoidectomy when done separately leads to recurrence or persistence of nasal obstruction in children. So we conclude that combined procedure septoplasty with adenoidectomy is required for relief of nasal obstruction in children aged 9-15 years.

REFERENCES

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