

Original Article

Septoplasty in children: Results of 250 cases

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Abstract

Background: Septoplasty in children is still a matter of debate, because it is thought that a surgical procedure on a developing structure might produce some adverse effects on normal nasal and facial growth. On the other hand septal deviation in children may alter the early physiological process of breathing, causing obligatory mouth breathing and consequently changing craniofacial development and even intellect.

Objectives: The goal of this retrospective study is to indicate the importance of septoplasty in children, to evaluate the effects of paediatric nasal septal surgery on normal nasal and facial growth, improvement of symptoms and any complications of surgery.

Methods: This is a retrospective study of 250 children in the age group of 7-14 years done at Maleka nursing Home, Bogra, Human care hospital, Rajshahi and Khidma hospital Dhaka, from January 1999 to December 2014. All patients were selected from history, clinical examination and selected investigations. All patients had X-ray soft tissue nasopharynx done to see adenoid enlargement. Some patients had done PTA and tympanometry to confirm OME. All patients had septoplasty done with left hemitransfixional incision with elevation of left mucoperichondrial flap and elevation of both mucoperiosteal flaps. In addition adenoidectomy was done for adenoid enlargement and myringotomy with grommet insertion for OME. Patients were followed up on day 8, day 15, 1 month, 6 month and one year after operation.

Results: Out of 250 children there were 163 male (65.2%) and 87 female (34.8%). Age ranged from 7 to 14 years, lowest number of patients were between 7 and 8 years old-64 (25.6%), between 9 and 11 years-73 (29.2) and 113 (45.2%) between 12 and 14 years. 210 patients had septal deviation to left side (84%) Patient felt improvement in nose breathing in 85% of cases. The most often complication was nasal blockage due to insufficient removal of deviated septum in 9.2 % of cases. We had synechia in 8 cases and septal haematoma in 2 cases. There were no aesthetic deformities.

Conclusion: Effective septal correction by septoplasty in children not only relieves nasal blockage but also controls the associated symptoms. Septoplasty in early childhood does not produce any untoward events in terms of the growth and development of the nose and face.

Key words: Septoplasty in children, face, growth and development.

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Introduction

Nasal septal deviation produces nasal obstruction, nasal congestion, crusting, epistaxis, eustachian tube dysfunction leading to secretory otitis media, acute and chronic suppurative otitis media. So effective septal correction by septoplasty not only alleviates the nasal obstruction but also controls the associated symptoms.¹ Septoplasty in adults is a well-established surgery but in children is still a matter of open

discussion, because it is thought that a surgical procedure on a developing structure might produce some adverse effects on normal nasal growth.^{2,3} Other group indicate surgery based on the explanation that the sooner septal deviation of a child is corrected, the greater chance of developing normal breath and therefore a suitable facial growth.^{4,5} Of the 31 children of 6-14 years age, undergoing submucous resection of the septum, 32% resulted in some nasal dorsum effects. (Hayton, 1948). Since then SMR was not recommended in children.¹

Methods

This retrospective study had 250 patients, in the period from January 1999 to December 2014 done at Maleka Nursing Home, Bogra, Human care hospital, Rajshahi and Khidma Hospital, Dhaka. All patients had X-ray soft tissue nasopharynx done to see adenoid enlargement and some selected patients had PTA and Impedance done. Patients underwent septoplasty and associated procedures such as partial inferior turbinectomy, electrocautery, adenoidectomy, myringotomy and insertion of grommets, when indicated in the same surgery under general anaesthesia. Initially a sterile cotton ball soaked in adrenalin concentration of 1:2000 is placed in both nostrils for 20 minutes before surgery. A septal incision is given on the left side along the caudal border of the nasal septum. Left mucoperichondrial and mucoperiosteal flap and right mucoperiosteal flaps are elevated. Cartilagenous and bony deviations are excised conservatively to preserve the growth of septal cartilage, therefore avoiding abnormalities in nasal growth. After repositioning of flaps incision line is closed with quilting sutures and nasal splints used with nasal packs kept for 48 hours and splints for 7 days. Patients were followed up on day 8 for removal of splints, day 15 to remove any crusts to prevent

synechia, one month, six months and one year interval.

Results

250 children underwent septoplasty. 163(65.2%) were male and 87(34.8%) were female (table I). Age ranged from 7-14 years with mean age 10.5 (Table II), lowest number of patients were between 7 and 8 years old- 64(25.6%), between 9 and 11 years- 73(29.2%) and highest numbers of patients were between 12 and 14 years, 113(45.2%). Regarding sides of septal deviation, 210(84%) children had septal deviation to left and 40(16%) had septal deviation to right side (Table III). 250 patients underwent septoplasty (100%), 230(92%) of them had partial inferior turbinectomy and inferior turbinate cauterization procedure, 110 (44%) patients had adenoidectomy, and 45 (18%) had myringotomy and grommets insertion. (Table IV). There were no intraoperative complications in any of the operated cases. All patients were evaluated by performing nasal toileting on day 8, 14, and 30 and to observe any possible complications. After that patients were asked to come in 6 and 12 months to see any late complications (recurrence, deformity). 2(0.8%) patients developed septal haematoma, 1(0.4%) patient developed septal abscess, 8(3.2%) patients developed synechia and 23(9.2%) patients developed recurrence of septal deviation. None of them developed any nasal or facial deformity. (Table V)

Table-5I
Sex distribution of children having septoplasty (n=250)

Sex	Number of patients	Percentage
Male	163	65.2
Female	87	34.8

Table-II*Age of children having septoplasty(n=250)*

Age group (years)	Number of cases	Percentage
7-8	64	25.6
9-11	73	29.2
12-14	113	45.2

Table-III*Side of septal deviation(n=250)*

Side	Number of cases	Percentage
To the left	210	84
To the right	40	16

Table-IV*List of surgical procedures(n=250)*

Procedure	Number of cases	Percentage
Septoplasty	250	100
Partial inferior Turbectomy and electro Cautery	230	92
Adenoidectomy	110	44
Myringotomy and Grommet insertion	45	18

Table-V*Complications of septoplasty(n=250)*

Name of complication	Number of cases	Percentage
Septal haematoma	2	0.8
Septal abscess	1	0.4
Synechia	8	3.2
Recurrence of deviation	23	9.2

**Fig-1: Septal deviation to the left****Fig-2: Septoplasty done**

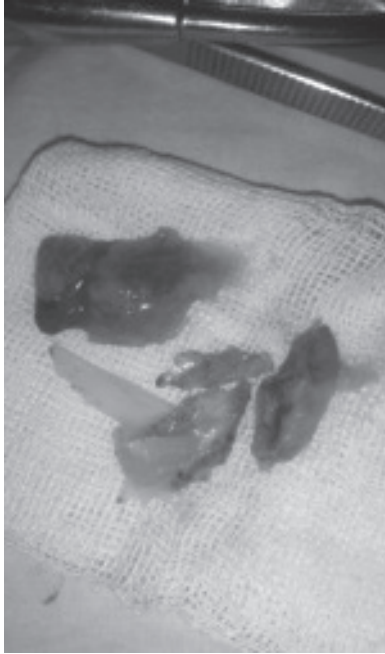


Fig-3: Resected specimens of adenoid, inferior turbinate, part of septal cartilage and bones

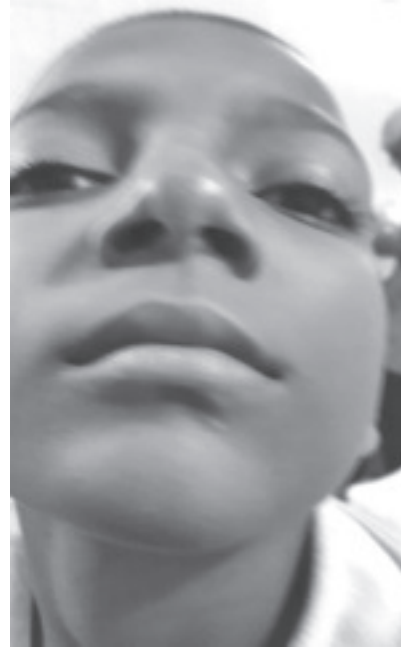


Fig-4: No nasal or facial deformity after 1 year of Septoplasty

Discussion

There is controversy in the literature about the consequences of septoplasty for septal deviation in children, and some studies have shown that when done early the procedure brought benefits in the short and long term.⁵ Dispenza et al stated that more important than the age of indication for the procedure is the degree of nasal obstruction, placing it as an absolute indication, because nasal obstruction during infancy disrupts the normal development of the angle of the skull base and consequently the maxillofacial growth and may cause malocclusion and jaw protrusion with bone deformities, confirmed even with anthropometric measurements.⁶ Others also claimed that delay defect correction can bring negative effect on organ systems that play a role in somatic and psychic development of the child including voice changes and sleep disturbances, but speculated that in some

situations monitoring should be done for real indication for surgical treatment.^{7,8,9,10} A study done by Ortaz & Olmedo of 44 patients aged between 8 and 12 years old who underwent septal surgery showed efficacy in relation to nasal obstruction and demonstrated that surgery when performed conservatively does not harm the facial growth or promote nasal deformities.¹¹ In this study out of 250 patients none had any nasal or facial deformity at short and long term follow-up although 9.2% had recurrence of septal deviation due to conservative approach.

Conclusion

Septoplasty in childhood does not produce any untoward events in terms of the growth and development of the nose and face. Although deviation of the septum has a tendency to recur after surgery, results is fairly satisfactory in children.

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