

Deviated Nasal Septum Correction by Septoplasty with Turbinoplasty and Intranasal Flexible Plastic Splint

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Abstract: Septal deviation is a frequent structural etiology or malformation causing nasal obstruction. A deviated septum may cause blockade of one or both nostrils, nasal congestions, frequent nose bleeds, frequent sinusitis, facial pains, headache, postnasal drip, noisy breathing during sleep etc. Aim of this study is to improve the surgery procedure with the use of intranasal flexible plastic splint and fast recovery of DNS patients from blockade and free of synechia formation in the nose and breathe freely and improved drainage.

Deviated Nasal Septum (DNS) study was conducted at Al-khoms teaching hospital, Al-khoms, Libya for 3 years from 2012 to 2014. 75 cases were admitted with DNS problems during the study. DNS was diagnosed with the help of Head lamp, anterior and posterior rhinoscopy and a nasal speculum and confirmed with PNS X-ray and CT- Scan. Septoplasty is one of the most common surgical procedures in the speciality of Otorhinolaryngology. Septoplasty was performed with Turbinoplasty (partial bilateral inferior turbinectomy) and intranasal flexible plastic splint.

Among the admitted 75 in-patients, there were 64 (85%) male patients and 11(15%) female patients with DNS problems. These DNS were noted more in the adult male than female. The result, more DNS in the male adult indicate in the present study mainly that these DNS may be due to nasal trauma or the trauma in the childhood can cause the DNS in the adult life because any degree of septal deviation usually becomes more pronounced with time in septoplasty. The time taken to recover was 2-3 weeks with proper daily nasal care. But 13 cases had partial nasal obstruction and development of intranasal small adhesion between lateral nasal wall and septal wall (Synechia).

The study indicates that male has more DNS problems than female. Septoplasty with Turbinoplasty and intra nasal flexible plastic splint reduces the Synechia formation and intranasal haematoma. This improves the overall health of DNS patients to lead the fast recovery for free breathe and quality life.

Key Words: Deviated nasal septum, Synechia, Septoplasty, Plastic splint.

I. Introduction:

The nasal septum is a composite plate like structure made up of membrane, bone and cartilage. The nasal septum divides the two halves of the nose into right and left nasal cavities. In Deviated nasal septum (DNS), nasal septum is ideally central and slightly deviated to one side or the other (Moore, 1994). DNS can occur either in developmental during origin, over period of time or by trauma such as a hit, sport trauma or an accident. Mladina and Subaric (2003) categorized the Posterior septal deformities are inherited and an anterior deformities are caused by environmental factors like injury in the nose and the central massif of the face. Takahashi (1977) expressed that man seems to be the only mammal species in which deformation occurs. Frequency of nasal septum deformation is determined by the genetic, cultural and environmental factors. Types of DNS are based on the shape of the deviation, parts of the septum deviated and location of the deviation. Deviation of the septum may be in the form of a "C" or S shaped; bony and cartilaginous or mixed type of deviations. Sometimes High DNS or Caudal deviations (Donald, 1994). These changes may change the function of septum in the nose like warming, humidity, filtering, olfaction and phonation (Kosama et al., 2005).

Septoplasty is one of the most common surgical procedure in the speciality of Otorhinolaryngology (Nunes et al.,2000). Therefore there are frequent thoughts among ENT specialists regarding to improve this procedure in different aspects, indications, time of surgery, techniques, safety measures and post operative care. One of the big issues regarding this procedure is the post-operative sequel and complications of developing Synechia, oro-facial odema, air way obstruction, disturbing the drainage, epistaxis, nausea and vomiting, atropic rhinitis, induction of allergic rhinitis, septal perforation and post operative pain (Bofares, 2013).

Aim of this study is to improve the surgery procedure with the use of intranasal flexible plastic splint and fast recovery of DNS patients from blockade in the nose and breathe freely and improved drainage.

II. Materials and Methods:

The study was conducted at Al-khoms Teaching hospital, Al-khoms, Libya from 2012 to 2014. 75 cases (64 male and 11 females) with DNS problems, between the age group of 10 and 40 were admitted in this study. The patients (all in-patients) for nasal septal surgery were informed and collected the consent of the

patient and his/her parents. Patients with Hypertension and Diabetes were excluded. Cases were grouped into with or without intranasal plastic splint.

DNS was diagnosed with the help of Head lamp, Anterior and posterior Rhinoscopy and a Nasal speculum and confirmed with PNS X-ray and CT- Scan. Septoplasty was performed with Turbinoplasty (partial bilateral inferior turbinectomy) and intranasal flexible plastic splint (Folien plastic splint). Surgery was done under general Anesthesia with partial bilateral inferior turbinectomy to remove the nasal obstruction. The intranasal plastic splint was kept inside and sutured within the nose after surgery by the Hemitransfixation procedure. The splint was fixed not tight by needle and suture to avoid the pressure necrosis.

Post operative care was followed once in a day. Nasal care in the form of suction clearance of nose with the help of spray with the mixture of 2% Xylocain (local anesthesia), Otrevin and diluted Adrenaline. After 3 post operative days, the intranasal flexible plastic splint was removed. In 4-6 days, patients were allowed to go home and asked them to come for the follow-up daily once in a day for post nasal care.

III. Results and Discussion:

Table1 : Different DNS cases diagnosed in Al-khoms Teaching Hospital, Al-khoms, Libya.

S. No.	Type of DNS	Male		Female	
		With Splint	Without Splint	With Splint	Without Splint
1	Cartilaginous only	39	10	04	03
2	Cartilaginous and bony combined	10	05	02	02
3	Spur only	--	--	--	--
4	Membranous only	--	--	--	--
	Total	49	15	06	05

Septoplasty is the most common surgical procedure in the speciality of ENT. Post operative problem is a significant problem that lead to the inability to tolerate the pain and feelings. Among the admitted 75 in-patients, there were 64 (85%) male patients and 11(15%) female patients with DNS problems. These DNS were noted more in the adult male than female. Similar result was also observed in Poland (Tuel et al., 2009) and in Croatia (Subaric and Mladina (2002). The result, more DNS in the male adult indicate in the present study mainly that these DNS may be due to nasal trauma by a hit, sports trauma, physical activities of boys or an accident or the trauma in the childhood can cause the DNS in the adult life because any degree of septal deviation usually becomes more pronounced with time. But the result of Rehman et al., (2012) showed contradictory to the present study that the females have more prevalence of DNS. In 56 (Cartilagenous DNS) cases, 39 cases of male and 4 cases of females with intranasal flexible splint and 10 male and 3 females without intranasal flexible splint. Remaining 19 cases were having the Carilagenous and bony combined type of DNS. All cases with usage of splint were recovered fast and felt ease in the post operative care. Musani et al.,(2012) also have observed positive correlation between the improvement of quality of life and septal surgery. But 13 cases from the without intranasal flexible plastic splint group, have observed the development of intranasal small adhesion between lateral nasal wall and septal wall (Synechia) and intranasal septal haematoma. Due to this haematoma, there was a development of septal abscess and delay in the recovery. Baljosevic et al., (2011) were done the same procedure with children in Serbia for early correction and cosmetic nose deformities. One case was with septal perforation and another case with abscess was observed. The time taken for recovery was 2-3 weeks with proper daily nasal care. So the cases with intranasal flexible plastic splint, have recovered fast without any synechia formation. Dalal et al.,(2013) have used endoscopic approach to the septoplasty to reduce the operative time and improve the surgical outcome.

IV. Conclusion:

As the Septoplasty is one of the common procedures in ENT speciality, the combined procedure with Turbinoplasty and usage of intranasal flexible plastic splint has improved the septoplasty procedures by reducing the Synechia and intranasal septal haematoma and abcess, which in turn speed up the recovery of patients and reduce stay in the hospital and medical expenses. Continuous researches are recommended to resolve all the problems which are associated with it.

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