

Submucosal Resection of Nasal Septum Under Local Versus General Anaesthesia

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ABSTRACT: **OBJECTIVE:** To compare the economy, complications and patient's comfort in cases of SMR (sub mucous resection) under local versus general anaesthesia. **DESIGN.** Randomized control trial. **PLACE AND DURATION.** This study was conducted in Otorhinolaryngology department CMH Lahore from January 2008 to August 2009. **SUBJECTS AND METHODS .** A total of 70 males having moderate to gross D N S were included. Group A (35) patients underwent SMR under local anaesthesia and group B (35) patients were operated under general anaesthesia. **RESULTS.** Net per case cost difference between local and general anaesthesia is RS.3528.05. Perioperative bleeding was minimum in group A and significant in group B. There was an obvious difference in post operative vomiting in two groups. It was 0% in-group A and 11.42 % in group B. In group A 85 % were confident and without an obvious stress at the time of removal of intranasal packing where as 57 % in group B were overanxious and apprehensive about the pain at the time of removing intranasal packing. Generally it was not easy to convince the patients for surgery under local anaesthesia and extra ordinary efforts were made during preoperative counseling. **CONCLUSION:** Septal surgery under local anaesthesia is better option in every respect and time spent convincing the patient to undergo submucous resection of septum under local anaesthesia pays off in terms of cost effectiveness and patient comfort.

Key Words: Submucous resection of septum, cost effectiveness, patient comfort.

INTRODUCTION : Global economic crisis has forced every society to review all aspects of life including medical sciences to maintain high standards with a significant reduction in cost. In this cost constraint era nasal septal surgery still remains the commonest nasal operation all over the world in both low and high civil society. Its results in terms of patient satisfaction are controversial. Hollywood is full of actors and actresses that have gone under the knife to fix a deviated septum¹. The septal pathology can be deviation, dislocation or spur. It can involve cartilage or both cartilage and bone in any combination of deviation, spur and dislocation. Nasal obstruction is the commonest indication of Submucous resection of septum. History of earliest SMR falls back to times of Killian of Germany and Freer of USA around 1847. Ephraim in Chicago and Peterson in Germany started systematic SMR in 1882². Untreated deviations resulting functional sinus problems opened the doors for functional sinus surgery³. Patient satisfaction after septal surgery has always been debatable topic⁴. Advocates of SMR under local versus general anaesthesia have been there in every era but there is definite shift in favor of local anaesthesia because of relative bloodless perioperative field and post operative patient comfort. Moreover local anaesthesia does not carry with it the risks of general anaesthesia in terms of aspiration and other respiratory problems. Local anesthetics are classified broadly into 2 groups, amide group (lignocaine, prilocaine, bupivacaine, mepivacaine, ropivacaine) and ester group (benzocaine, tetracaine, procaine, cocaine) Recent evidence suggests that lignocaine with adrenaline

is safe⁵. Nasal Septal surgery performed under local anaesthesia with dexmedetomidine sedation resulted in less surgical bleeding, less postoperative pain, a more stable haemodynamic state, less nausea, a shorter recovery period and a higher level of anaesthesia satisfaction⁶. The rationale for this study was based on the fact that in a developing country like Pakistan where masses are struggling below poverty line, economy is the emerging concept while selecting treatment options. If result of multi optional treatment is same, economy and patient comfort should be top consideration. If cost of operation can be reduced without compromising results in commonest nasal surgery why not benefit out of it⁷.

PATIENTS AND METHODS :

INCLUSION CRITERIA;

Obstructive DNS (Deviated nasal septum), males between 18 to 45 years of age.

EXCLUSION CRITERIA;

Simple(tiny) deviation without nasal obstruction
Abnormal coagulation profile revision septal surgery,
Overanxious and unwilling for surgery under local anaesthesia were not included in group A, High risk and declared unfit for general anaesthesia were not included in either group.

This study was designed as a randomized control trial in ENT department of CMH Lahore from Jan 2008 to August 2009. Patients were counseled about their disease, surgical detail, merits and demerits of general and local anaesthesia. Patients were divided in two group. A and B by random number table. Age of the patients varied from 18 to 47 years. All patients had DNS with significant

nasal obstruction on patency test. Group A (35) patients underwent SMR under local anesthesia while Group B (35) patients were operated under general anesthesia. Patient counseling, coagulation profile and patient consent were the pre-requisites for surgery. Same surgeon with a clear objective to restore patency of nasal passages performed all operations. Conventional Killian's technique of SMR was adopted in both groups. Mucoperichondrial flaps elevated on both sides through Killian's incision. Obstructing cartilage removed, retaining both dorsal and caudal struts of cartilage to prevent any subsequent change in external shape of the nose. Local anaesthesia was achieved with 4 % xylocaine with Adrenaline using both surface as well as infiltrative techniques. Vaseline gauze was selected for nasal packing for 24 hours post operatively. Oral antibiotic, painkiller and antihistamine (Erythromycin, Paracetamol, and Chlorpheniramine) were given to all the patients for three days after surgery. Patients of both groups were closely observed, interviewed and their comments about the complete event (from admission to discharge) were noted.

This study was analyzed using SPSS version-16. Cost of operations and hospital stay of patient was measured by applying t-test. Patients' confidence in the doctor and patient comfort (post operative vomiting, post operative sore throat, laryngospasm) were recorded by applying chi-square test. Patient's confidence in the doctor was gauged by using a scale from 1 to 6 (rating 1 to 3 showed good confidence while 4 to 6 excellent confidence). Paired t-test was used in case of cost and hospital stay where as chi square test was used to check the significance in case of post operative vomiting, sore throat and laryngospasm. A p-value of less than 0.05 was taken as significant.

RESULTS : Total cost incurred on the seventy patients in this study was Rs 556782. 38.91% of total cost was spent on Group A (mean 6190 with std dev of 178.84 rupees). 61.04 % of total cost was spent on Group B (mean 9718.05 with std dev of 244.42 rupees). This per case difference of Rupees 3528.05 was found to be statistically significant using paired t-test (p value was <0.0001). Mean hospital stay in case of Group A after operation was 1.71 hours with std dev.1.07. Mean post operative hospital stay in case of Group B was 28.0³ hours with standard deviation of 6.28 which was statistically significant using paired t-test (p value <0.0001) (Table-1). Patient's confidence in operating surgeon was rated as excellent in 34 patients of Group A and in 12 patients of Group B, this difference was statistically significant (p value <0.0001) (Table-2). Ten patients of Group B had postoperative vomiting while none of Group A faced this problem and the difference was significant (p value of <0.0001 (Table-3). None of the patients of group A had postoperative sore throat while thirteen patients in Group B got sore throat within 24 hours in-group B. This difference was statistically significant. (p value <0.0001)(Table-4). Two patients in Group B had laryngospasm during recovery after general anesthesia where as no patient of Group A faced this spasm. This difference was not significant (p-value 0.493)(Table-5).

Group of Patient	N	Mean	Std Dev	Sig (2 tailed)
Cost of surgery Group A	35	6190 Rs.	178.84	<0.0001
Cost of surgery Group B	35	9718 Rs.	244.42	
Post opt hosp stay Group A	35	1.71453 Hrs	1.07	<0.0001
Post opt hosp stay Group B	35	28.0286 Hrs	6.28	

Table-1 : Cost of surgery and post-operative hospital stay.

Patients	Confidence in Surgeon		Total	P-Value
	Present	Absent		
Group A	0	35	35	0.000
Group B	2	33	35	
			70	

Table-2 : Patients confidence in surgeon.

Patients	Post Operative Vomiting		Total	P-Value
	Present	Absent		
Group A	0	35	35	0.001
Group B	10	25	35	
			70	

Table-3 : Post-operative vomiting.

Patients	Post Operative Sore Throat		Total	P-Value
	Present	Absent		
Group A	0	35	35	<0.0001
Group B	13	22	35	
			70	

Table-4 : Post-operative sore throat.

Patients	Post Operative Laryngospasm		Total	P-Value
	Present	Absent		
Group A	0	35	35	0.493
Group B	2	33	35	
			70	

Table-5 : Post-operative laryngospasm.

DISCUSSION : Economy is the major issue in poverty-hit areas of the world. Aim of this study was to report the economical and patient friendly option of SMR. This opportunity also led the way to analyze the patient compliance in SMR under local versus general anesthesia. Both groups showed similar improvement of symptoms but there was a significant total cost difference of 1, 23,480 Rupee in group A and B. This indicates that SMR under general anesthesia is unjustified specially in poor economical states. We need to train our trainees state of the art skill to perform SMR under local anesthesia. This practice is already there in some centers⁸⁻¹³, There are advocates to withhold the routine preoperative investigations for surgery under local anesthesia and rely upon clinical evaluation and history that can save another significant 1000 Rupee per case¹⁴. Economy is the major concern but patient compliance and satisfaction can never be ignored. No rhinologist is unaware of the misconceptions about SMR, especially recurrence and worsening of pre-existing symptoms. To obviate these

misconceptions, time spent on pre operative counseling and evaluating patient's expectations is never wasted. Septal surgery definitely improves quality of life and patient satisfaction provided selection of the patient is correct and ethical¹⁵⁻⁷. SMR under local anesthesia is a better option because of short hospital stay reducing bed occupancy, being cheap, insignificant per operative bleeding, clear operative field, no serious complication, high patient morale on removal of postoperative nasal packs, not being nil by mouth for hours before and after operation, no post operative vomiting and hangover of general anaesthesia. Another advantage is avoiding postoperative sore throat. In our study it is difficult to pinpoint the source of postoperative sore throat in-group B. Most likely its source looks to be Endotracheal intubation during general anesthesia or cross infection from postoperative ward/hospital staff in hospital. Sore throats after Endotracheal intubations have been reported in literature¹⁸. There are two drawback of SMR under local anesthesia. Firstly patient has to come back next day of operation for removal of nasal packs and secondly an unpleasant metallic taste of xylocaine during operation. These drawbacks are well tolerated by most patients and we are confident to report SMR under local anesthesia a patient friendly operation as compare to SMR under general anesthesia. There are numerous merits of SMR under local anesthesia. Bed occupancy of hospital is reduced and there are minimum administrative problems for patient. Moreover patients are not exposed to side effects of general anesthesia like, feeling of being sick, sore throat, headache, dizziness, blurred vision, shivering, itching, confusion, chest infections, bladder problems, depressed respiration, damage to teeth, lips or tongue, equipment failure, malignant hyperthermia, arrhythmias, cardiac arrest and rare deaths. The incidence of 5.7 % laryngospasm during recovery after general anesthesia in group B necessitates a thorough clinical examination to look for pre existing sore throat at the time of operation because incidence of laryngospasm has been reported when general anesthesia is given to patients suffering with sore throat^{19,20}.

CONCLUSION : SMR under local anesthesia is better option .It is economical , patient friendly and carries less perioperative and post operative complications as compared to SMR under general anesthesia.

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