

A Prospective Randomized Study – Curette Vs Endoscopic Powered Instrument Microdebrider Assisted

Adenoidectomy

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Abstract

Background- Infectious and inflammatory diseases involving the pharynx, tonsils and adenoids accounts for a significant proportion of childhood illnesses and pediatric health care expenditures.

Methods- Prospective randomized study was conducted on 50 patients of adenoid hypertrophy, aged between 6 to 12 years attending Department of Otorhinolaryngology, at M.B. Govt. Hospital, R.N.T. Medical College, Udaipur from Jan 2016 to Dec 2016.

Results- In Group A the operative time for adenoid removal ranged between 10 minutes to 20 minutes with a mean of 13.48 ± 2.49 minutes. While in Group B, ranged between 20 minutes to 35 minutes with a mean of 24.64 ± 4.63 minutes.

Conclusion- The endoscopic microdebrider assisted adenoidectomy fared better in relation to less intraoperative blood loss, faster compared to curette adenoidectomy.

Keywords- Pharynx, Tonsils, Adenoids, Blood loss.

Introduction

Infectious and inflammatory diseases involving the pharynx, tonsils and adenoids accounts for a significant proportion of childhood illnesses and pediatric health care expenditures. They often result in two of the most

common surgical procedures of childhood, tonsillectomy and adenoidectomy¹.

Adenoidectomy is one of the commonest operations done on children². It is done alone or along with tonsillectomy or with ventilation tube insertion for otitis media with effusion. This operation is indicated for adenoid hypertrophy with symptoms of nasal obstruction, mouth breathing, snoring and hearing loss due to otitis media with effusion or chronic otitis media.

Adenoidectomy by curette is the commonest method followed worldwide. Conventional curette adenoidectomy has more blood loss, collateral normal tissue damage, post-operative complications and misses residual adenoid tissue after surgery. To overcome the above shortcomings, alternative methods of adenoidectomy have been reported. Recently, powered shavers with endoscopic visualization have evolved as safe, accurate and complete adenoid removal technique with less operative time and blood loss.

Materials and methods

Study Design: Prospective randomized Study.

Inclusion Criteria

Willing for surgery and giving written consent,
Fit for surgery,
Aged between 6 to 12 years,
Adenoid hypertrophy,

Having symptoms like nasal obstruction, mouth breathing, snoring and day time sleepiness.

Exclusion Criteria

- Unfit for surgery
- Not giving consent for surgery
- Age < 6 and > 12 years
- Deviated nasal septum
- Coagulopathy

After approval from the institutional ethical committee, our prospective randomized study was conducted on 50 patients of adenoid hypertrophy, aged between 6 to 12 years attending Department of Otorhinolaryngology, at M.B. Govt. Hospital, R.N.T. Medical College, Udaipur from Jan 2016 to Dec 2016.

All the cases were randomized into two groups.

Group A- Consisted of 25 cases undergoing Curette adenoidectomy (CA).

Group B- Consisted of 25 cases undergoing Endoscopic powered instrument microdebrider assisted adenoidectomy (EPIMAA).

Results

50 patients participated in our study (25 in each group A and B) aging between 6 to 12 yrs with mean age of 8 years. 72% cases of adenoid hypertrophy were between six to nine (6-9) yrs of age and more common in 6 years child.

Female to male ratio was 2:3.60% patients were male and 40% were female.

Total 50 cases randomized in two study group. Group A consisting 25 cases (50%) underwent curette adenoidectomy (CA) and Group B consisting 25 cases (50%) underwent endoscopic powered instrument microdebrider assisted adenoidectomy (EPIMAA).

Table No. 1: Operative variable

Variable (mean±SD)	Group-A	Group-B	p-value
Intra operative	13.48±2.49	24.64±4.63	<0.001

time(min)			
Blood loss(ml)	56.16±7.51	38.56±5.97	<0.001

Mean operative time (mins) – In Group A the operative time for adenoid removal ranged between 10 minutes to 20 minutes with a mean of 13.48 ± 2.49 minutes. While in Group B, ranged between 20 minutes to 35 minutes with a mean of 24.64 ± 4.63 minutes. In cases where associated surgical procedures like tonsillectomy, FESS, grommet insertion were also combined, the time taken for these procedures & hemostasis were deducted.

Initial cases of endoscopic powered instrument microdebrider assisted adenoidectomy (EPIMAA) took a longer time to get familiar with the use of endoscope with microdebrider. Endoscope helped in removing the adenoid from areas which were difficult to assess like around Eustachian tube orifice. So successive cases underwent EPIMAA took less time but not less than 20 minutes.

Blood Loss (ml) – In Group A, blood loss was between 40-70 ml with a mean of 56.16 ± 7.51 ml, while in Group B, it was between 30 to 50 ml with a mean of 38.56 ± 5.97 ml. As described in method, at the end of procedure the material collected from suction canister was filtered to remove tissue and the remaining fluid comprising of blood and sucked irrigating fluid was measured. the blood loss in milliliters was calculated as (the difference between this amount and the earlier amount of saline used for irrigation) +10x (the number of three square inch gauze pieces used for packing the nasopharynx). Each gauze was assumed to a corresponding blood loss of 10 ml.

Discussion

In the present study we compared the endoscopic powered instrument microdebrider assisted adenoidectomy (group B) with curette adenoidectomy (group A) prospectively, in terms of mean operating time, mean blood loss, post-operative pain, mean recovery time, post-operative complications, safety and effectiveness of surgery. The

newer aspect of this study was use of endoscope transnasally in place of laryngeal mirror.

P Stanislaw et al ³(2000) performed powered-assisted adenoidectomy on 90 patients (aged 1-13 years; mean age 5.5 years) and adenoid assisted adenoidectomy was performed on 87 patients (aged 1-12 years ; mean age 5.6 years) for a total of 177 patients

We found that microdebrider assisted adenoidectomy under endoscopic visualization had significantly longer operative time in group B (p <0.001) than curette adenoidectomy in group A which is similar to Lt Col R Datta et al ⁴(2009). They were using endoscopes in powered assisted adenoidectomies.

In our study, the results for the mean operative time are contrary fact to the finding of the previous studies Koltai PJ et al ⁵ and P Stanislaw et al⁴ in which the visualization was with a laryngeal mirror and they were not using endoscopes in powered assisted adenoidectomy. And they found that powered assisted adenoidectomy was faster comparatively and took shorter operative time in their studies.

Conclusion

The endoscopic microdebrider assisted adenoidectomy fared better in relation to less intraoperative blood loss, faster compared to curette adenoidectomy.

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