

Original Article

The Outcome of Adenoid Surgery by Mirror Guidance

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Abstract

Adeno- tonsillitis is the commonest disease of the children and the adolescent among the ENT diseases all over the world. Adeno- tonsillectomy is the surgery mostly performed. Conventional curettage method is usually done by most of the surgeons. Residual adenoid tissue remains following this blind approach even with skill hands which is responsible for most of the recurrences. Whatever the device or instrument used in mirror guided surgery chance of recurrence is almost none. Moreover complication is also negligible. 137 cases were studied using this procedure showed very effective result with few complications.

Keywords: Outcome, Adenoid Surgery, Mirror Guidance

Introduction

Adeno-tonsillitis is the common ENT disease bearing 20% of all throat infection. Among 20-40% of ENT surgical procedure most frequent operation is Adeno-tonsillectomy¹. Different types of methods are used to perform this operation. But common procedure in our country is conventional blind curettage by adenotome and completeness of surgery is assessed by finger palpation of nasopharynx which gives the false impression of residual

adenoid tissue. Moreover, incomplete removal of adenoid tissue is responsible for post operative hemorrhage and recurrence². Again adenoid tissue may extend from nasopharynx to choana (choanal adenoid), during surgery , encasement of tissue/engagement by adenotome may not be in proper position which causes some tissue to slip back in the choana³. Sometimes parts of the adenoid tissue cannot be cleared of from behind the Eustachian tube by conventional curettage method^{4,7}. An attempt to over enthusiastic removal causes injury to Eustachian tube injury resulting deafness.

Visualization of nasopharynx can be made possible by special instruments, like nasoendoscope, telescope, which are costly, expensive and required experience to attain proficiency in this technique⁵. But a very easy and simple solution is see nasopharynx to place a laryngeal mirror in oropharynx facing upward to visualize nasopharynx. This mirror guided technique will help better visualization, better engagement of tissue by adenotome and less injury to the surrounding structures. Along with this technique electro-coagulation of residual tissue and bleeding sites with

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insulated diathermy sucker reduces the post operative hemorrhage and recurrence.

Mirror guided method:

Nasopharynx is the clinically blind space that cannot be seen by naked eye which can be made visible by this procedure. In this procedure; first mouth is open by mouth gag, then one catheter is introduced through one anterior nares, which is pulled out through mouth and both ends of the catheter are knotted to retract the soft palate. A mirror is placed in the oropharynx to visualize the nasopharynx (Adenoid). An adenoid curette is placed in nasopharynx and gently press over the adenoid tissue to facilitate holding and curettage. Finally nasopharynx is checked for any remnant tissue and bleeding, which are cauterized by insulated diathermy forceps or insulated sucker.

Aims of Study: To find out the benefits of mirror guided adenoid surgery over conventional blind curettage method.

Methods

This study was done in the department of otolaryngology and head- neck surgery, Shaheed Ziaur Rahman Medical College Hospital, Bogra from April 2013 to May 2014. A total 137 patient of different age group of both sex were included in this study. Among them 57 cases were done by conventional blind curettage method and 80 cases by mirror guided technique. Postoperatively the patients were followed up at 1, 3 and 6 monthly interval up to two years. During follow up patients were reviewed accordingly using history, clinical examination, X- ray's nasopharynx and nasal endoscopy. If any complication found, that was thoroughly evaluated and recorded.

Outcomes parameters: Rate of Post-operative adjacent structural damage, reactionary hemorrhage and Adenoid remnant.

Measures to outcome analysis: History, clinical examination, X-ray, naso-endoscopy, pure tone and impedance audiometry.

Results:

In this series 137 cases were taken with variable presentation. Out of them 57 cases were done by blind conventional curettage method and remaining 80 with mirror guided visual method. Age group varies from 2- 25 years revealing mean age 4-8 years with higher incidence among the female sex.

Table-I

Distribution of the Patients According To Age (n = 137)

Patient group	Age range (yr)	Total no. of patients	Percentage (%)
Children	2-3	50	36.49
School going	4-10	70	51.09
Adolescent	11-18	12	8.75
Young's	19-25	05	3.65

The majority of the patients in this study were school going (between 4-10 years of age), that is 70 (51.09%) out of 137 cases.

Table-II

Distribution of the Patients According To Sex (n = 137).

Sex	Total no. of patients	Percentage (%)
Male	72	52.55
Female	75	54.74

Our study revealed slight female predominance of the disease, 75 (54.74%) patients were female among 137 cases.

Table-III
Distribution of the Patients according to Presentation (n = 137)

Presentation	Total	Percentage
Nasal obstruction with mouth breathing.	63	45.98
Adenoid with growth failure	05	3.64
Difficulty in deglutition	41	29.92
Nasal obstruction E. tube dysfunction	10	7.29
Obstruction with drooling.	11	8.02
Adenoid with nasal discharge	10	7.29
Osas with poor performance in exam	07	9.59
OSAS with convulsion	01	0.72

The maximum numbers of patients were suffering from nasal obstruction with mouth breathing (45.98%); the next common presentation was difficulty in deglutition (29.92%).

Table-IV
Distribution of Patients According to Outcomes (n =137)

Outcomes	Conventional curettage method		Mirror guided technique	
	No. of patients (n ₁ = 57)	Percentage (%)	No. of patients (n ₂ = 80)	Percentage (%)
Eustachian tube injury	05	8.77	00	00
Posterior nasopharyngeal wall injury	01	1.75	00	00
Reactionary hemorrhage	03	5.26	01	1.25
Secondary hemorrhage	00	00	00	00
Significant residual adenoid tissue	11	19.29	00	00

In this study we found different complications in conventional curettage method, residual adenoid tissue found in 19.29% of cases that ultimately resulted recurrence. Reactionary hemorrhage occurred in 5.26% patients. Whereas, in mirror guided technique there was no residual adenoid tissue, no other obvious complications noted except reactionary hemorrhage found in 1 (1.25%) case.

Discussion

Though adenoidectomy is the operation done for enlarged adenoid but in this study most

cases were associated with tonsillitis. So adeno-tonsillectomy was done in most cases. Only 15 out of 137 patients underwent mere adenoidectomy. Different techniques were used in different countries with variable success rate. Recurrence rate in non-visualized technique is higher than visualized technique⁶. Post operative hemorrhage and surrounding structures damage rate were also remarkable⁷.

Residual and re-growth of adenoid observed in one study which was 5.4%⁸. Another study shows that after conventional curettage

adenoidectomy, a significant mass of residual adenoid tissue is observed in about 50% of the cases⁹. Another observation is that by blunt curettage and digital palpation only 20.2% of the patients had no residual adenoid tissue¹⁰. In our study we found that 19.29% of residual tissue due to conventional blind curettage method with digital palpation (slightly higher may be due to trainee junior doctors performed a number of cases) whereas no residual adenoid tissue were found with mirror guided technique with insulated sucker diathermy .

Regarding hemorrhage our experience is reactionary hemorrhage is a bit less in adenoidectomy than tonsillectomy though some series shows almost similar hemorrhage rate in both the procedures¹¹. Most of the time we saw oozing or bleeding point in the tonsillar bed. A low post-operative hemorrhage rate of 0.93% for adenoidectomy and 0.95% for tonsillectomy were observed in one study¹². In our series with blind adenoidectomy reactionary hemorrhage occurred in 5.26% and 1.25% in mirror guided adenoidectomy with sucker diathermy coagulation technique.

Euastachian tube¹³ injury was also found in blind method. One study showed that E. tube injury by scarring around E.tube after conventional adenoidectomy were occurred in 5.5%¹⁴. whereas visual or endoscopic method show almost no such injury. This study also shows higher rate of E. tube injury but no such injury happened in mirror guided technique.

Conclusion

Visualization of the nasopharynx (by laryngeal mirror) significantly decreases the recurrence by ensuring complete removal of adenoid tissue than blind curettage method and complication is also negligible as well. So we can strongly recommend the mirror guided

adenoid surgery for its outstanding results than conventional blind curettage technique.

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