

A COMPARATIVE ANALYSIS OF PER AND POST-OPERATIVE COMPLICATIONS IN PATIENTS UNDERGOING EARLY AND DELAYED INTERVAL TONSILLECTOMIES

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ABSTRACT

Background: Peritonsillar abscess is most prevalent deep neck space infection and treatment is mainly medical and surgical. There are three major surgical procedures namely incision & drainage, interval tonsillectomy and needle aspiration.

Objective: To compare per and post-operative complications in patients of PTA undergoing early and delayed interval tonsillectomies in respect of pain, hemorrhage and hospital stay.

Methods: It was a randomized control trial study of sixty patients of peritonsillar abscess. Among thirty patient's early interval tonsillectomy was performed while other thirty patients underwent delayed interval tonsillectomy. The study was conducted in ENT Department of Lahore General Hospital, Lahore.

Results: The age range in both groups was 13-46 years. The male to female ratio was 2.3:1 and 1.3:1 in group I and II respectively. Per-operative hemorrhage in group I, mild in 53.3% patients, moderate in 36.7% and severe in 10.0% patients while in group II, mild in 43.3%, moderate in 40.0% and severe in 16.7% patients. A Single case in group II had secondary hemorrhage. Post-operative pain in group I was mild in 66.7%, moderate in 26.7% and severe in 6.7% patients while in group II, it was mild in 26.7%, moderate in 56.7% and severe in 16.7% patients. The duration of hospital stay less than one week was 76.7% in group I and 13.3% in group II.

Conclusion: Early interval tonsillectomy has a lower incidence of postoperative hemorrhage and pain with less hospital stay as compared to delayed interval tonsillectomy.

Keywords: Peritonsillar abscess, interval tonsillectomy

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INTRODUCTION

Peritonsillar abscess (PTA) is most prevalent deep neck space infections (DNSIs).¹ The DNSI is a fatal communicable disease in complex framework formed by deep cervical fascia three layers, with probable morbidity and death ranging from 1.6 percent to 40 percent.²⁻³ Quinsy or PTA refers to pus collection located between pharyngeal constrictor muscle and tonsillar capsule.⁴ This infectivity starts like a superficial infectivity and

develops into the tonsillar cellulitis. PTA develops at very later stage.⁵ It could present through trismus, sore throat, muffled speech, saliva drooling, odynophagia, dehydration, intense pain and swinging temperature.⁶ Peritonsillar abscess is a frequent suppurative problem of severe tonsillitis.⁷⁻⁹

The prevalence of PTA ranges from 13 to 30 per 100000 individuals each year.^{10,11} Generally the condition is one-sided and people aged between 10-60 years can be affected but most common age group is 20-40 years. Thorough treatment could be needed in a few cases as it could cause serious complication, for example, descending necrotizing mediastinitis and deep neck abscess. Gram-negative rods, gram positive cocci (generally Streptococcus β -hemolytics group A) and anaerobes are most common causative bacteria.¹²

Peritonsillar abscess treatment is believed to be medical and surgical treatment.¹³ There are three major surgical procedures utilized for the treatment of PTA namely incision & drainage, interval tonsillectomy and needle aspiration.¹⁴ Tonsillectomy is described like palatine tonsils surgical excision¹⁵ and it is most common surgery carried out worldwide.¹⁶ The PHT (Post-tonsillectomy hemorrhage) is a severe problem of tonsillectomy while among acute cases could cause death.¹⁷⁻¹⁸ Virtually it happens at the rate of 3.5 percent, with 0.9 percent of patients necessitating surgical procedure and 0.04 percent necessitating transfusion.^[18] Previous researches have demonstrated an elevated prevalence of PTH among male adult patients.^[19] As per postoperative time elapsed, post-tonsillectomy hemorrhage can be categorized like either primary, that happens within initial twenty four hours of operation, or secondary that happens after twenty four hours, normally between days five and ten.^[18] Moreover, the reasons are not well recognized.¹⁷

Injury of tissue induce sever inflammation, nerve irritation while exposed pharyngeal muscle spasm is recognized to play an important role in post-tonsillectomy pain genesis.¹⁵ Mostly it causes dehydration due to insufficient intake that leads to extended hospital stay as well as added morbidity, thus sufficient pain control is required.²⁰ As the tonsillectomy is a surgical procedure that is commonly carried out at health facilities, it is apparent that otolaryngologists are much interested in medicines, reducing post-operative problems of patient.¹⁵ Therefore, current study aims to compare per and post-operative complications among patients undergoing early interval tonsillectomy and delayed interval tonsillectomy after peritonsillar abscess.

METHODS

This is a randomized control trial study of sixty patients of peritonsillar abscess. In thirty patient's early interval tonsillectomy was performed while in other thirty patients delayed interval tonsillectomy was done. This study was conducted in ENT Department of Lahore General Hospital Lahore. Data was analyzed through computer software SPSS. Data master sheet was generated for variables under study. Chi square test was applied for the comparison of the outcome parameters. P value was obtained and the results were labeled as statistically significant when P value is less than 0.05.

RESULTS

Table-1 shows age distribution of patients in two groups. The age range in group I was 12 patients (40.0%) in 10-20 years of age, 13 patients (43.3%) in 21-30 years, three patients (10.0%) in 31-40 years, and two patients (6.7%) in 41-50 years. In group II, 11 patients (36.7%) in 10-20 years, 17 patients (56.7%) in 21-30 years, one patient (3.3%) in 31-40 years, and one patient (3.3%) in 41-50 years. The age

range of group I was 13-45 years and in group II it was 13-46 years. The mean \pm SD of group I was 24.70 \pm 7.63 years and in group II, it was 23.97 \pm 7.07 years. The result was found statistically insignificant (p value >0.623).

Table 2 demonstrates sex distribution of two groups. In group I, the male numbered 21 (70.0%) and female were 9 (30.0%). While in group II, the male was 17 (56.7%) and female were 13 (43.3%). The male to female ratio in group I was 2.3:1 and in group II it was 1.3:1 respectively. The result was found statistically insignificant (p value 0.157).

Table-3 shows the findings of per-operative hemorrhage. In group I, mild hemorrhage was found in 16 patients (53.3%), moderate hemorrhage in 11 patients (36.7%), while severe hemorrhage occurred in 3 patients (10.0%). In group II, mild hemorrhage was found in 13 patients (43.3%), 12 patients (40.0%) had moderate hemorrhage and severe hemorrhage occurred in 5 patients (16.7%). The result was found statistically insignificant (p value 0.332).

Table 4 describes the findings of post-operative hemorrhage. One case in group I and also one case in group II suffered from primary hemorrhage (occurring within 24 hours). Only one case (3.3%) of group II had faced secondary hemorrhage. In group I, 29 patients (96.7%) and in group II, 28 patients (93.3%) had no post-op bleeding. The result was found statistically insignificant (p value 0.414).

Table 5 shows the findings of postoperative pain. In group I, mild post-operative pain was found in 20 patients (66.7%), moderate in 8 patients (26.7%) and severe in 2 patients (6.7%) while in group II, mild post-operative pain was found in 8 patients (26.7%), moderate in 17 patients (56.7%) and severe in 5 patients (16.7%). The result was found statistically significant (p value 0.007).

In group I, the hospital stay less than one week was found in 23 patients (76.7%) and more than one week stay was found in 7 patients (23.3%) while in group II, stay less than one week was in 4 patients (13.3%) and 26 patients (86.7%) had more than one week stay. The result was found statistically significant (p value <0.001).

During the 1st week of follow up in group I, 22 patients (73.3%) had normal oral intake and 8 patients (26.7%) had poor oral intake. Whereas in group II, the normal oral intake was found in 20 patients (66.7%) and poor oral intake in 10 patients (33.3%). The result was found statistically insignificant (p value 0.527).

Table-6 demonstrates the follow-up after one week for pain. All the patients in the group I were found pain free and only one patient (3.3%) in groups II had pain. The p value was >0.5 (statistically insignificant). At two weeks of follow-up all patients of both groups were pain free with normal oral intake.

Table-1: Age distribution of patients in two groups

Age (years)	Group I		Group II	
	No.	Percent	No.	Percent
10-20	12	40.0	11	36.7
21-30	13	43.3	17	56.7
31-40	3	10.0	1	3.3
41-50	2	6.7	1	3.3
Total	30	100.0	30	100.0

Table-2: Sex distribution of two groups

Sex	Group I		Group II	
	No.	Percent	No.	Percent
Male	21	70.0	17	56.7
Female	9	30.0	13	43.3
Total	30	100.0	30	100.0

Table-3: Per-operative hemorrhage

Status	Group I		Group II	
	No.	Percent	No.	Percent
Mild	16	53.3	13	43.3
Moderate	11	36.7	12	40.0
Severe	3	10.0	5	16.7
Total	30	100.0	30.0	100.0

Figure-1: Sex distribution of two groups

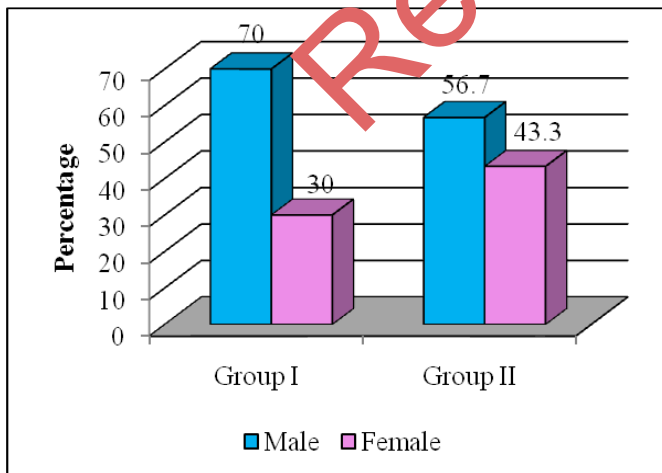


Figure-2: Per-operative hemorrhage

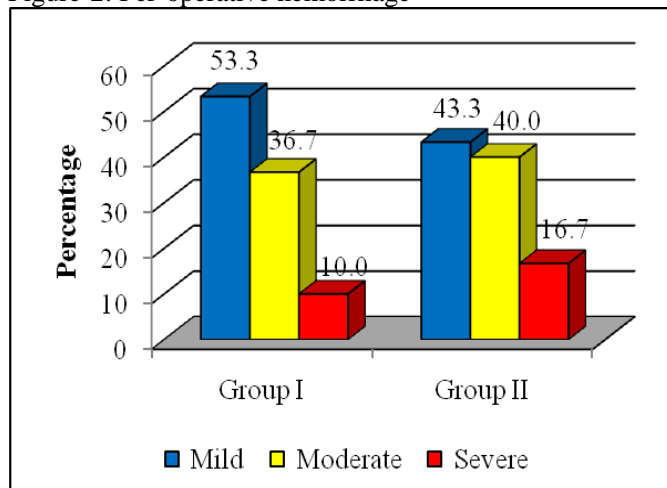


Table-4: Post-operative hemorrhage

Status	Group I		Group II	
	No.	Percent	No.	Percent
No bleeding	29	96.7	28	93.3
Primary hemorrhage	1	3.3	1	3.3
Secondary hemorrhage	-	-	1	3.3
Total	30	100.0	30.0	100.0

Table-5: Post-operative pain

Status	Group I		Group II	
	No.	Percent	No.	Percent
Mild	20	66.7	8	26.7
Moderate	8	26.7	17	56.7
Severe	2	6.7	5	16.7
Total	30	100.0	30	100.0

Table-6: Follow-up after one week – pain

Status	Group I		Group II	
	No.	Percent	No.	Percent
No	30	100.0	29	96.7
Yes	-	-	1	3.3
Total	30	100.0	30	100.0

DISCUSSION

Peritonsillar abscess (PTA) is a most prevalent deep neck space infection and tonsillectomy is believed a common surgical procedure performed worldwide. Present study was carried out to compare per and post-operative complications among patients undergoing early and delayed interval tonsillectomies at ENT Department of Lahore General Hospital, Lahore. To acquire appropriate outcomes sixty patients were included in the study and divided into two equal groups. Among 30 patients, early interval tonsillectomy was performed while among other 30 patients delayed interval tonsillectomy was done. Study revealed that among patients who underwent early interval tonsillectomy (Group-I), majority (83.3%) was upto 30 years old and only 16.7% were 31-50 years old. Likewise, among patients who experienced delayed interval tonsillectomy (Group-II), mainstream (93.4%) was also upto 30 years old and only 6.6% were 31-50 years old. A study carried out by Johnson and coworkers (2003) demonstrated that peritonsillar abscess mostly occurs among patients during 3rd and 4th decades of life [21] while the study undertaken by Herzon and Martin (2006) highlighted that PTA can occur among patients aged between 10-60 years.[22]

It was found during study that in Group-I, most of the patients (70.0%) were males and 30.0% were females (male-female ratio 2.3:1). Similarly in Group-II, more than half (56.7%) patients were males and 43.3% were females (male-female ratio 1.3:1). A similar study conducted by Martin and associates (2006) also confirmed male patients were in majority with male-female ratio 1.45:1.[23]

When the per-operative hemorrhage was assessed, study indicated that in both groups, more

than half the patient had mild per-operative hemorrhage followed by moderate and severe hemorrhage. Post-operative hemorrhage is a significant complication of tonsillectomy. It is important to mention here that in Group-I, significant majority (96.7%) of patient had no bleeding and only 3.3% had primary hemorrhage. Likewise in Group-II, most of the patients (93.3%) had no bleeding, 3.3% primary hemorrhage and 3.3% had secondary hemorrhage. A study conducted by Javed and teammates (2014) showed similar scenario that among patients who experienced early interval tonsillectomy, 96.7% had no bleeding and only 3.3% had primary hemorrhage and among patients who underwent delayed interval tonsillectomy, 93.3% had no bleeding while 3.3% primary and 3.3% had secondary hemorrhage.^[15] Another study done by Klug and colleagues (2006) measured post-tonsillectomy hemorrhage risk. The following factors significantly associated with PTH; increased age (p value 0.0093), high perioperative blood loss (p value 0.026) and elevated perioperative BP (p value 0.0007). Also, study demonstrated three times more but insignificant risk (p value 0.26) during the abscess tonsillectomy when compared with cold tonsillectomy.^[14] In a study both techniques were compared regarding primary & secondary hemorrhages and postoperative pain. Overall hemorrhage rate was 5.6 percent, this included primary hemorrhage in 0.3 percent and secondary hemorrhage in 3.3 percent.^[25]

As far as post-operative pain is concerned, study found that in group-I, majority (66.7%) of patients had mild pain followed by moderate pain (26.7%) and severe pain (6.7%) while in group-II, more than half of the patients (56.7%) had moderate pain after that sever pain (16.7%) and mild pain (26.7%). The results of a study carried out by Javed and teammates (2014) exhibited similar situation who reported that among patients who experienced early interval tonsillectomy majority had mild pain followed by moderate and severe pain while among patients who underwent delayed interval tonsillectomy massive portion of patients had moderate pain followed by sever and mild pain.^[15]

Hospital stay is a leading factor that plays a significant role to reduce the financial burden and improve the patients' satisfaction. It is worth mentioning here that in Group-I, major proportion (76.7%) had hospital stay less than one week and only 23.3% patients had more than one week while in Group-II significant majority (86.7%) had hospital stay more than one week and only 13.3% patients had less than one week. Same results were offered by a study done by Javed and teammates (2014) who also confirmed that significant majority in Group-I had less than one week while in Group-II had more than one week hospital stay.^[15]

Pain and inadequate oral intake is believed a most common cause of long hospital stay. It is pertinent to mention that major proportion (73.3%) of patients in group-I and 66.7% patients in group-II had normal oral intake while 100.0% patients in Group-I and 96.7%

patients in Group-II had no pain after one week follow-up.

CONCLUSION

Study concluded that early interval tonsillectomy has a lower incidence of postoperative hemorrhage and pain as compared to delayed interval tonsillectomy with an added advantage of single hospital stay.

ETHICAL APPROVAL

The study was approved from Institutional Review Board of Postgraduate Medical Institute/Ameer ud Din Medical College/Lahore General Hospital, Lahore, Pakistan, vide AMC/PGMI/LGH/Article/Research No./00-179-20, dated December 12, 2020.

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AUTHOURS CONTRIBUTIONS

- AA:** Manuscript Writing
MI: Data Collection, Proof Reading
GDK: Data Collection
MI: Data Collection, Literature Search
MI: Data Collection
NUHK: Supervision, Guidance