

Frequency of Secondary Hemorrhage after Suture Technique to Control Bleeding in the patients undergoing Tonsillectomy

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ABSTRACT

Objective: To determine the frequency of secondary hemorrhage after ligating the bleeding points with suture technique using catgut suture in the tonsillar fossa to control hemostasis.

Study design: Cross sectional survey.

Setting: ENT Unit I, Jinnah Hospital, Lahore.

Duration: Six months: from 30-05-2010 to 30-11-2010.

Methods: One hundred and fifty (150) patients who underwent tonsillectomy were included in the study. Hemostasis was secured after tonsillectomy by ligating the bleeding points with catgut suture using suture technique in the tonsillar fossa. The purpose of this suture technique was to decrease the frequency of secondary hemorrhage after tonsillectomy.

Results: Among the 150 patients, secondary hemorrhage was observed in one (0.7%) patient.

Conclusions: Ligation of the bleeding points with catgut suture using suture technique in the tonsillar fossa can prevent secondary hemorrhage after tonsillectomy.

Key words: Tonsillectomy; catgut suture; secondary hemorrhage.

INTRODUCTION

The palatine tonsil is a collection of sub-epithelial lymphoid tissue on each side of the oropharynx, which is the common inlet both for the oesophagus and trachea. The palatine tonsils constitute the Waldeyer's ring along with the adenoids and lingual tonsils. Tonsils have definitive role in immune response. Tonsils may be involved in various pathological processes, of which infection is the commonest. Diseased tonsils lose their function of being the "Gate keeper" and instead of providing protection; rather become a source of infection. Finally a stage is reached, when chronically infected tonsils are incurable medically and surgery becomes mandatory. Deep seated micro-abscesses, in lymph follicles surrounded by fibrosis make them refractory to any medical treatment. So surgery remains the mainstay of treatment^{1,2}.

Tonsillectomy is one of the commonest otolaryngological procedures performed, representing approximately 20% to 40% of surgical procedures performed in this field^{3,4,5}. It is usually done in children and is sometimes also performed in adults⁶. According to American Academy of Otolaryngology, this procedure is performed in those who have chronic recurrent tonsillitis, which results from repeated acute attacks of tonsillitis⁷.

Various surgical techniques are used to perform this operation, including blunt dissection, guillotine

excision, electrocautery, cryosurgery, coblation, ultrasonic removal, laser removal, monopolar and bipolar dissection, thermal welding tonsillectomy, and ligature tonsillectomy⁸. Patients who undergo tonsillectomy using an intracapsular technique which remove 90% of tonsil but spare tonsil capsule appear to have postoperative heavy bleeding and pain⁹. By far the most popular way of performing tonsillectomy these days is by dissecting the tonsil from its bed by steel knife and controlling the intraoperative bleeding by diathermy or using silk ligature. These have been considered safe, popular now a days and are in practice^{10,11}. There is no uniform technique of tonsillectomy throughout the world and the choice of the technique depends on the surgeon's preference. Different tonsillectomy techniques have different impact on postoperative morbidity.¹² Generally tonsillectomy is considered simple but, in comparison with other similar operations, it implies a common and sometimes serious complication¹³.

Post tonsillectomy hemorrhage remains the most serious complication of tonsillectomy. Hemorrhage has been divided into two broad categories; primary, occurring <24 hour after surgery and secondary, occurring >24 hour, commonly 5–10 days after the operation. Post tonsillectomy secondary hemorrhage has a reported rate of 3–5% leading to re-admission to hospital.³ Primary bleeding is generally considered to be related to surgical technique whereas environmental factors that influence oropharyngeal healing contribute to delayed (secondary) hemorrhage^{14,15}.

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The use of silk ligation over bipolar diathermy for bleeding points provides better result in tonsillectomy and the chance of secondary hemorrhage is low i.e. 6.2% in which silk ligation is used as compared to 15% in which bipolar diathermy is used. Rationale of my study was to see frequency of secondary hemorrhage in patients under going for tonsillectomy using suture technique of the bleeding points in the tonsillar fossa intraoperatively to control hemostasis.

MATERIAL AND METHODS

The study was conducted on 150 patients with 95 % of confidence level 4% margin of error and taking expected percentage of post – tonsillectomy secondary haemorrhage i.e., 6.2% in patient underwent tonsillectomy with suturing technique. The study was carried out in ENT Unit-1 at Jinnah Hospital Lahore, from 30-05-2010 to 30-11-2010 [six month duration]. Inclusion criteria are, The patients who presented with having definite signs and symptoms of Chronic recurrent tonsillitis planned to undergo tonsillectomy, ages 05-40 years and both sexes. Exclusion criteria are, pregnancy, bleeding disorders and congenital abnormality like cleft palate. 150 patients were recruited for the study from ENT OPD Jinnah Hospital Lahore, those who fulfilled the inclusion and exclusion criteria. Their detailed demographic including name, age, sex, address and contact were noted. Detailed clinical examination and required investigation were performed. Then under General anesthesia tonsillectomy were done with Dissection method. However haemostasis was controlled by suture technique using catgut in the tonsillar fossa. Patients were admitted in the ward for 48 hours post operatively and observed for any haemorrhage. Then patients were discharge and counseled to visit the hospital if they had any complain of bleeding with in 5-10 days after the operation. Data was collected in structure questionnaire and entered in SPSS 11.0. Age was presented as mean+SD. Frequency and percentage will be calculated for demographic variable like gender and secondary bleeding.

RESULTS

There were a total of 150 patients included in this prospective case series. The mean age of the patient was 15.44 ±7.94 (range 5 – 40 years). There was 63 (42%) patient whose age was under 5 - 10 years. There were 50 (33.3%) patients of age range of 11 – 20 years, 31 (20.7%) patients of age range of 21 – 40 years and 6 (4%) patients of age range of 31 – 40 years. (Table 1)

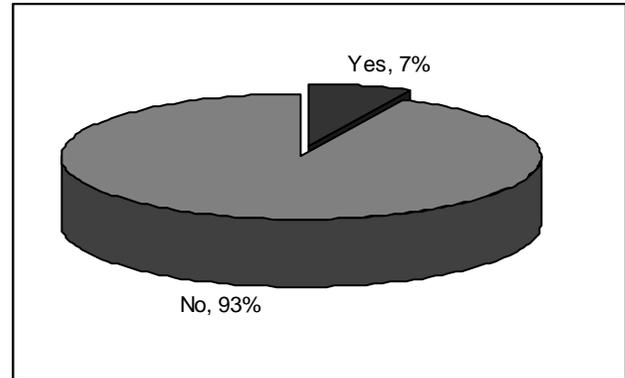
Out of the total 150 patients in the study, there were 91(60.7%) male patients and 59 (39.3%) female patients. The female to male ration was 1:1.54. There was only 1(0.7%) patient who suffered from secondary hemorrhage, while 149(99.3%) patients did not suffer from secondary hemorrhage (Fig:1).

Table 1: Distribution of patients by age (n = 150)

| Age (Years) | No. | %age |
|-------------|-------------|------|
| 5 – 10 | 63 | 42 |
| 11 – 20 | 50 | 33.3 |
| 21 – 30 | 31 | 20.7 |
| 31 – 40 | 6 | 4 |
| Mean±SD | 15.44 ±7.94 | |
| Range | 5 – 40 | |

Key: D Standard deviation

Fig 1: Distribution of patients by Secondary Hemorrhage



DISCUSSION

This prospective study was carried out to evaluate the frequency of secondary hemorrhage after ligating the bleeding areas with suture technique using catgut suture in the tonsillar fossa, in patients undergoing tonsillectomy. The results were in favor of suture technique i.e. only (0.1%) one patients suffered from secondary hemorrhage.

The mean age of the patients in our study was 15.44 ±7.94 years. This is quite comparable to other studies. The mean age of the patients was 15 years in a study by Iqbal Z et al¹⁶. The majority of patients in our study were young. Most of the patients (42%) belonged to age group 5 – 10 years. This observation was comparable to other studies. In study by Khan NS, the majority of patients were also belonging to younger age group i.e. 55% patients were of age 5 – 15 years.

Majority of patients in our study were male i.e. 60.7% approximately. In study by Sharif M, et al¹⁷, 75% patients were male. In a study by Famarzi A, et al¹⁸. There were 56% male and 44% female patients. In another study by Khan AR, et al¹⁹, 72.22% patients were male and 27.77% were female.

Like our study, the results of other studies have also described that majority of patients were male.

The frequency of secondary hemorrhage after suture technique, to secure bleeding for patients undergoing tonsillectomy was 0.7%. In literature, there are also other studies which have discussed this outcome.

Sharif M, et al¹⁷ compared suture technique with bipolar diathermy and observed that frequency of secondary hemorrhage in both groups was 1% each. This observation was quite comparable to that in our study i.e. 0.7%.

Iqbal SM et al²⁰, performed a study which compared the outcome of diathermy coagulation with suture technique for hemostasis after tonsillectomy. They observed that frequency of secondary hemorrhage after suture technique was 5% and after diathermy was 12%. Like our study, they also recommended suture technique as a better technique for prevention of secondary hemorrhage, but as compared to our results (0.7%) , the frequency of secondary hemorrhage was much higher, i.e. 5%.

Khan AR et al¹⁹ performed a comparative study on 180 patients and observed that frequency of secondary hemorrhage was 4.16% in patients with suture technique and 13.33% in patients with diathermy group. The frequency of secondary hemorrhage was a bit higher in their study than ours (0.7%), but again the results were in favor of suture technique.

CONCLUSION

Suture technique to control haemostasis has shown good outcome in prevention of secondary hemorrhage after tonsillectomy. The other advantage of this technique is that the Surface area of tonsillar fossa also decreased by suture technique to control bleeding in the tonsillar fossa after tonsillectomy, which lead to better and early healing of the tonsillectomy wound post operatively and less chances of secondary hemorrhage.

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