

# Tonsillectomy by Spray Coagulation Mode of Diathermy: A Study on Peroperative Bleeding and Operative Time

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## ABSTRACT

**Aim:** To assess the safety of technique regarding per operative bleeding and operative time.

**Methods:** This single blind interventional study was conducted at Government KotKhawajaSaeed Hospital, Lahore from June 2006 to June 2008. One hundred patients were included in the study and the results of procedure regarding per operative bleeding and operative time were analyzed.

**Results:** The mean age of the patients was 15.89±6.65 years. The per-operative bleeding 85 patients (85%) had 4-8ml, 15 patients (15%) had 8-12ml and the total operative time was between 7-12 minutes in 70 patients (70%) while 12-15 minutes in 30 patients (30%).

**Conclusion:** It was concluded that tonsillectomy by spray coagulation was a better and safe technique regarding operative blood loss and operation time.

**Keywords:** Tonsillectomy, Spray coagulation, Per-operative bleeding.

## INTRODUCTION

The first description of tonsils surgery comes from Hindumedicine 1000 BC<sup>1,2</sup>. Around AD30, Aulus Cornelius Celsus performed tonsillectomy by using his finger nails<sup>3,4,5</sup> since then a continuing evolution has been observed in surgical techniques<sup>6,7</sup>. The ancient technique was replaced by use of instrument which includes snare, guillotine, tonsillotome, ligature etc<sup>8</sup>. Recently hot techniques were introduced in ENT<sup>9</sup>. The modern hot techniques were introduced in 1973 with the use of CO<sub>2</sub> laser, NdYAG laser, KTP laser, diathermy, plasma excision or coblation, radiofrequency ablation, harmonic scalpel and thermal welding<sup>10</sup>.

Electrocautery decreases operative time and intra operative bleeding<sup>11,12,13</sup>. The monopolar diathermy creates an electric arc between tissue and instrument which ablates the tissue<sup>14</sup>. However there are chances of burning of adjacent tissues if carelessly performed<sup>15</sup>. The importance of the topic is that this method of electrical cauterization is cost effective for the patient and less burden for the theatre staff because there is minimal bleeding and minimal operative time.

## PATIENTS AND METHODS

The study was conducted at department of ENT Government KotKhawajaSaeed Hospital Lahore and total 100 patients were operated from June 2006 to June 2008. The study was conducted after approval from hospital Ethical Committee. Unipolar

diathermy on spray coagulation mode was used as a technique from dissection of tonsils to the haemostasis of fossae. Patients between 4-30 years of age, belonging to either sex, with history of recurrent tonsillitis and obstructive symptoms were included in the study. Patients with history of bleeding disorders and age less than 4 or more than 30 years were excluded from the study. Tonsillectomy was done by spray coagulation mode of diathermy and the results of procedure regarding per operative bleeding and operative time were analyzed.

## RESULTS

Out of 100 patients, 30 patients were between 4-10 years, 50 patients were between 10-20 years of age and 20 patients were between 20-30 year of age with mean 15.89±6.65 years (Table 1). On analysis of per-operative bleeding 85 patients (85%) had 4-8 ml blood loss. Fifteen patients (15%) had 8-12 ml blood loss (Table 2). The analysis of operative time showed that in 70 patients (70%) the total operative time was between 7-12 minutes, while in 30 patients (30%) the operative time was between 12-15 minutes (Table 3).

Table 1: Frequency and Percentage of Age of the Patients

Age in years	n	%age
4-10	30	30.0
11-20	50	50.0
21-30	20	20.0

Table 2: Per-operative bleeding

Blood loss (ml)	n	%age
4-8	85	85.0
8-12	15	15.0

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Table 3: Frequency of Total Operative Time of Patients

Time (minutes)	n	%age
7-12	70	70.0
12-15	30	30.0

## DISCUSSION

Per-operative bleeding and operative time are the important elements, affecting the morbidity in every surgical procedure<sup>16</sup>. The same is true for our tonsillectomy patients. According to the results of our study, the average blood loss was 8ml. This is comparable to other international studies of Lowe et al, Windfuhr et al, Javed et al and Stoker et al, here the average blood loss was 12.6ml<sup>17,18,19,20</sup>. Regarding per operative time, the average operative time of our study was 9 minutes. This is again comparable to other studies by Shah et al<sup>1</sup>, in which the operative time was 10-20 minutes. In various studies by Glade et al and Shin et al, the average operative time was 10.1 minutes, so reducing the morbidity and complication rate<sup>21,22</sup>. The importance of our study is that it reduces the burden on the patient and operation theater staff, so reducing post-operative complications and improving the quality of procedure.

## CONCLUSION

From the results of our study, it is concluded that tonsillectomy by spray coagulation has significantly reduced per operative bleeding and reduced operative time, as compared to other conventional methods of tonsillectomies. It has reduced the morbidity, complication rate and cost of operation, however there is always room for further improvement in the technique.

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