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Original Article

A comparative study of ligation versus bipolar diathermy for hemostasis in tonsillectomy

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ABSTRACT:

Background: Tonsillitis refers to the inflammation of the palatine tonsils and pharyngitis, an inflammation of the remainder of the pharynx. The present study was conducted to compare ligation versus bipolar diathermy for hemostasis in tonsillectomy. **Materials & Methods:** 54 cases were divided into 2 groups of 27 each. Group I patients underwent right sided tonsillectomies (bipolar diathermy used) and left sided tonsillectomies as the control group (ligation for hemostasis). **Results:** Group I had 17 males and 10 females and group II had 15 males and 12 females. The mean blood loss was 80.4 ml in group I and 30.6 ml in group II, number of ligatures was 0 seen 20 in group I and 6 in group II, 1 seen 4 in group I and 5 in group II, 2 seen 3 in group I and 15 in group II and 3 seen 1 in group II. The difference was significant (P< 0.05). **Conclusion:** Bipolar diathermy was found to be better as compared to ligation diathermy.

Key words: Bipolar diathermy, Hemostatsis, Tonsillitis

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INTRODUCTION

Tonsillitis refers to the inflammation of the palatine tonsils and pharyngitis, an inflammation of the remainder of the pharynx. Multiple pathogens can contribute to tonsillitis but, in most (up to 80%) cases, the causative agent is a virus. The condition can occur occasionally or recur frequently.[1] Visible white streaks of pus characterized acute tonsillitis on tonsils, and the surface of the tonsils may become bright red colour. The bacterial tonsillitis is caused mainly by b-haemolytic Streptococcus, called strep throat and to a lesser extent by Staphylococcus aureus and several other bacteria.[2]

The more common symptoms of tonsils are a sore throat, red swollen tonsils, pain when swallowing, fever, cough, headache, tiredness, chills, swollen lymph nodes in the neck and pain in the ears or neck and the less common symptoms include nausea, stomach ache, vomiting, furry tongue, bad breath, and change in voice and difficulty in opening of mouth.[3] Tonsillectomy techniques are currently undergoing something of a revolution. Dissection tonsillectomy with hemostasis performed with or without ties was the standard but more recently there has been an explosion of different dissection techniques in order to reduce postoperative pain and hemorrhage associated with this procedure.[4] Various newer techniques are intracapsular tonsillectomy with debrider, harmonic scalpel (ultrasound) tonsillectomy, plasma mediated ablation technique, cryosurgical technique, electrocautery, laser tonsillectomy, coblation tonsillectomy and radiofrequency but all are still under consideration.[5] The present study was conducted to compare ligation versus bipolar diathermy for hemostasis in tonsillectomy.

MATERIALS & METHODS

The present study comprised of 54 cases of both genders. All were informed regarding the study and their consent was obtained.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 27 each. Group I patients underwent right sided tonsillectomies (bipolar diathermy used) and left sided tonsillectomies as the control group (ligation for hemostasis). The amount of blood loss, number of ligatures applied, average time taken and incidence of postoperative hemorrhage following the use of ligation and bipolar diathermy were assessed. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Male	17	15
Female	10	12

Table I shows that group I had 17 males and 10 females and group II had 15 males and 12 females.

Graph I Distribution of patients

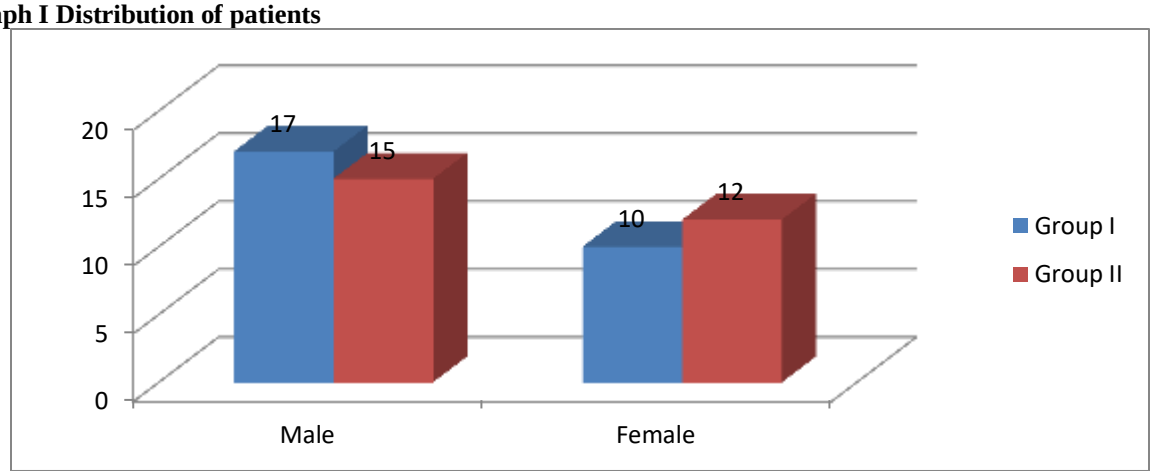

Table II Comparison of parameters

Parameters	Group I	Group II	P value
Blood loss (ml)	80.4	30.6	0.01
No. of ligatures 0	20	6	0.02
1	4	5	
2	3	15	
3	0	1	

Table II, graph I shows that mean blood loss was 80.4 ml in group I and 30.6 ml in group II, number of ligatures was 0 seen 20 in group I and 6 in group II, 1 seen 4 in group I and 5 in group II, 2 seen 3 in group I and 15 in group II and 3 seen 1 in group II. The difference was significant (P< 0.05).

Graph I Comparison of parameters

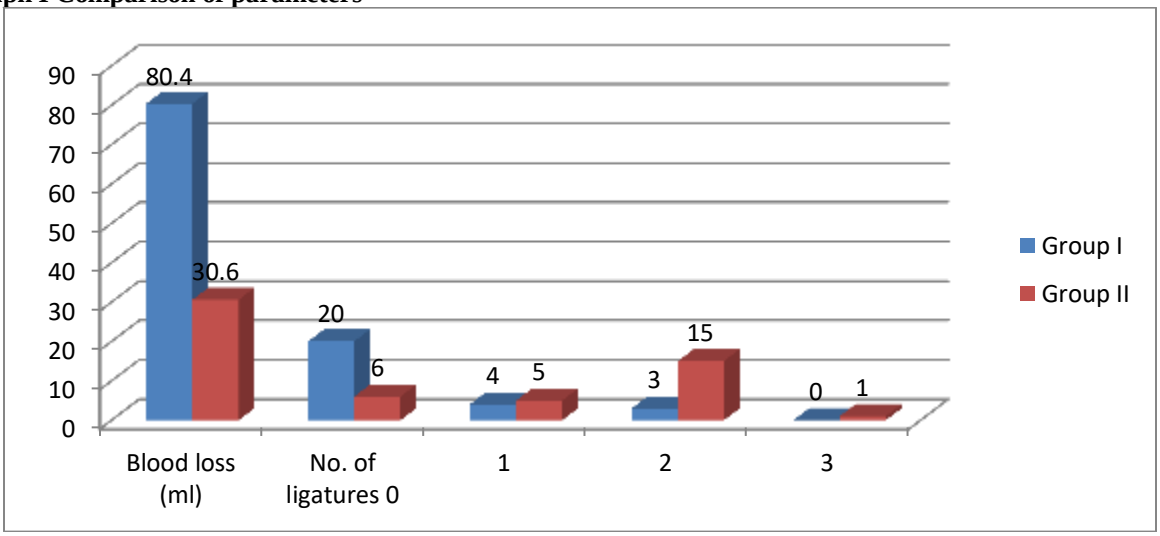

Table III Assessment of clinical features

Parameters	Group I	Group II	P value
Sore throat	20	26	0.14
Fever	12	20	
Nasal discharge	14	15	
Pharyngeal irritation	7	13	
Dysphagia	13	17	

Table III shows that common clinical features were sore throat seen in 20and 26 in group I and II respectively, fever in 12 and 20 respectively, nasal discharge in 14 and 15 respectively, pharyngeal irritation in 7 and 13 respectively and dysphagia in 13 and 17 respectively. The difference was significant (P< 0.05).

DISCUSSION

Acute tonsillitis is characterized by visible white streaks of pus on tonsils and the surface of the tonsils may become bright red colour. The bacterial tonsillitis is caused mainly by β- haemolytic Streptococcus, called strep throat and to lesser extent by Staphylococcus aureus and several other bacteria.[6] The more common symptoms of tonsils are sore throat, red swollen tonsils, pain when swallowing, fever, cough, headache, tiredness, chills, swollen lymph nodes in the neck and pain in the ears or neck and the less common symptoms include nausea, stomach ache, vomiting, furry tongue, bad breath, change in voice and difficulty in opening of mouth.[7]

An odynophagia for 24 to 48 hours, as part of prodromal symptoms of a common cold due to viral infection of the upper respiratory tract, is excluded from the definition of "acute tonsillitis".[8] Depending on the stage and appearance of the deposits, or the exudate on the tonsils, one can distinguish the catarrhal angina with redness and swelling of the tonsils (early stage) from the follicular angina with stipple-like fibrin deposits from the lacunar angina with confluent deposits (late stage). The diagnosis of "acute tonsillitis" can be made purely clinical by a specialist. Smears, blood tests or viral evidence is not necessary in most cases.[9] The present study was conducted to compare ligation versus bipolar diathermy for hemostasis in tonsillectomy.

In present study, group I had 17 males and 10 females and group II had 15 males and 12 females. Sharp et al[10] conducted a study on 110 children with tonsillitis in age ranged 6- 14 years of both genders. In all patients, careful clinical examination was performed. All symptoms and signs were recorded. Two specimens, one from the tonsillar surface and another from the cryptamagna were collected by using sterile cotton swabs, placed in sterile bottles aseptically, brought to the laboratory and subjected for direct microscopic examination. Out of 110 patients, males were 60 and females were 50. Age group 6-8 years had 7, 8-10 years had 28, 10-12 years had 30 and 12-14 had 45 patients. The difference was significant (P< 0.05). Among bacteria, 70 were pathogenic and 40 were commensals. 62 were gram positive while 46 were gram negative. Fever was present in 110, sore throat in 90, odynophagia in 85 and constitutional symptoms in 90 patients.

We observed that mean blood loss was 80.4 ml in group I and 30.6 ml in group II, number of ligatures was 0 seen 20 in group I and 6 in group II, 1 seen 4 in group I and 5 in group II, 2 seen 3 in group I and 15 in group II and 3 seen 1 in group II. Hemant et al[11] conducted study on 50 patients in which electro dissection tonsillectomy using bipolar diathermy versus dissection and snare method was compared. They found that electro dissection tonsillectomy is associated with a quicker procedure, less intraoperative blood loss, less initial postoperative pain, reduced postoperative morbidity and early discharge from the hospital.

We found that common clinical features were sore throat seen in 20 and 26 in group I and II respectively, fever in 12 and 20 respectively, nasal discharge in 14 and 15 respectively, pharyngeal irritation in 7 and 13 respectively and dysphagia in 13 and 17 respectively. Choy et al[12] conducted study and concluded that bipolar diathermy is equally as effective as ligation in control of hemorrhage, not more painful postoperatively and did not cause more secondary hemorrhage. It is easier, takes less time for hemostasis than ligation resulting in shorter operative and anaesthetic time.

CONCLUSION

Author found that bipolar diathermy was found to be better as compared to ligation diathermy.

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