



COMPARATIVE STUDY BETWEEN CONVENTIONAL TONSILLECTOMY AND COBLATION TONSILLECTOMY

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KEYWORDS :

INTRODUCTION:

Operations on tonsils and adenoids are performed since many years. Tonsillectomy is still a very common surgical procedure. There are various modalities to perform surgery (diathermy, laser, harmonic scalpel, radiofrequency cautery, cryosurgery and coblation). Among these, conventional method by cold steel method are commonly done by ENT surgeons.

Tonsillectomy leaves the wound open to heal by secondary intention, thus causes pain and bleeding as two major postoperative complications. This is the reason pioneers usually concentrate to decrease these two problems with comparing various techniques. Long periods of wound recoveries, taking up to fifteen days, are not so uncommon. This may bear the risk of bleeding from tonsillar bed. Postoperative pain can cause severe limitation in regaining the activities and diet. Considering the mentioned morbidities, attempts have been made to improve the outcome by developing new techniques with less postoperative pain and short recovery period.

Coblation tonsillectomy was initially introduced in 2001 following which a great amount of articles have been published either to confirm its efficacy or to reject that because of unsatisfactory or unproven outcomes with undesirable cost-effectiveness. It involves passing a radiofrequency bipolar electric current through a medium of normal saline, resulting in a plasma field of highly ionized particles, which in turn break down intercellular bonds and thus melt tissue at low temperature at around 40-70°C and shallow depth of injury 50-150 µm. Other modalities are not used regularly considering the cost of the equipment.

With this in mind this study was made at our institute for 20 patients undergoing tonsillectomy for comparing effects of two different methods of dissection - one is dissection with conventional method and other is dissection with coblation method.

METHOD

In this study we tried to find out whether coblation technique decreases the postoperative morbidity compared to traditional dissection tonsillectomy. Operation time, intraoperative blood loss, postoperative pain, number of days needed to return to work and normal diet and post-operative hemorrhage were compared between two groups.

The study design was approved by the local ethics committee in L.G. HOSPITAL.

20 patients for tonsillectomy were recruited between February 2021 and May 2022. out of 20 cases 10 patients has been operated for tonsillectomy by conventional method and other 10 has been operated for tonsillectomy by coblation method. Routine basic blood investigation done with bleeding profile. Informed and consent was obtained from each subjects allowing randomization, using random number table, prior to surgery.

Indications for tonsillectomy in our study were chronic recurrent

tonsillitis.

Inclusion criteria

All cases with recurrent and chronic tonsillitis with more than 5 year of age.

Exclusion criteria

Cases with acute infection, severe systemic illness, bleeding disorders. The operation was performed in the standard way using either the coblator wand or steel cold dissection instrument.

Data including age, volume of blood loss, operation time, postoperative pain score, postoperative hemorrhage, days needed to return to work and normal diet were gathered in both groups. Patients were examined for the following post-operative complications during post surgical visits: primary hemorrhage, secondary hemorrhage, and re-admission due to postoperative pain. On discharge, the patients were advised to call the medical group for any complications especially bleeding.

RESULT:

In table 1 the age group in study which contains max patients is from 5-35 years. As far as sex is concerned 10 were males and 10 were females. In this study, age distribution suggests that children have more problems related to tonsils and adenoids.

Table 1 : Age distribution

Age group	Total number of patients
1-10	8 (40%)
11-20	2 (10%)
21-30	8 (40%)
31-40	2 (10%)

Table 2 : Sex distribution

sex	Total number of patients
Male	10 (50%)
Female	10 (50%)

IN TABLE 3 show time taken for surgery in conventional and coblation method

It show conventional method required more time than coblation.

Time taken for the surgery was calculated by time from putting an incision on the tonsils to the achievement of haemostasis.

Table 3: Time Taken For Surgery

TIME TAKEN DURING TONSILLECTOMY (Min)	TOTAL NUMBER OF PATIENT (COBLATIONAL METHOD)	TOTAL NUMBER OF PATIENT (CONVENTIONAL METHOD)
30	2 (20%)	0
60	4 (40%)	4 (40%)
90	4 (40%)	4 (40%)
180	0	2 (20%)

IN TABLE 4, show that in conventional method 40% cases required

bipolar cautery to control bleeder and in coblation method 20% cases required bleeder control

Table 4: Number Of Bleeder Required To Control

NUMBER OF BLEEDER REQUIRED TO CONTROL	IN CONVENTIONAL METHOD(BY BIPOLEAR CAUTERY)	IN COBLATION METHOD(BY COAUGULATION MODE OF COBLATOR)
1	4 (40%)	2 (20%)
2	0	0
3	0	0

IN TABLE 5 SHOW 60% CASES REQUIRED 5-10 GAUGE PIECE IN COBLATION METHOD BUT IN CONVENTIONAL METHOD 40%-80% CASES REQUIRED 10-20 GAUGE PIECE. THUS COBLATION METHOD REQUIRED LESS GAUGE PIECE COMPARED TO CONVENTIONAL METHOD TONSILLECTOMY

Table 5 : Number Of Gauge Piece Required

NUMBER OF GAUGE PIECE USE PER PATIENT	IN CONVENTIONAL METHOD	IN COBLATION METHOD
0-5	0	0
5-10	0	6(60%)
10-15	4(40%)	4(40%)
15-20	4(40%)	0
21-25	2(20%)	0

IN TABLE 6 SHOW IN CONVENTIONAL METHOD 60% CASES HAVE MODERATED PAIN IN FIRST 24 HOUR BUT IN COBLATION METHOD 60% CASES HAVE MILD PAIN SO CONVENTIONAL METHOD HAS MORE PAINFUL COMPARE TO COBLATION METHOD

Table 6: Grading Of Pain In 24 Hour

METHOD	NO PAIN	MILD(1-3)	MODERATE (4-6)	SEVERE (7-10)
CONVENTIONAL	0	2(20%)	6(60%)	2(20%)
COBLATION	0	6(60%)	4(40%)	0

Table 7 show that coblation method tonsillectomy has more chance of slough formation compare to conventional method.

Table 7 : post-operative slough formation

% of slough formation	In coblation method	In conventional method
0-10	0	0
10-20	0	4 (40%)
20-30	4 (40%)	4 (40%)
30-40	4 (40%)	2 (20%)
40-50	2 (20%)	0

In table 8 show, that Coblation method tonsillectomy patient has early chance of regaining the normal general condition

In coblation method 60% patient regain normal general condition in 5-10 days comparing with conventional method took 15-20 days

Table 8. Postoperative diet intake and regaining the normal general condition of patients

TOTAL NUMBER OF DAYS	Conventional method	Coblation method
0-5	0	2 (20%)
5-10	2 (20%)	6 (60%)
10-15	4 (40%)	2 (20%)
15-20	4 (40%)	

In table 9 show conventional and coblation both method of tonsillectomy has equal chance of secondary haemorrhage.

Table 9 post operative haemorrhage

Post operative haemorrhage	In conventional method tonsillectomy patient	In coblation method tonsillectomy patient
Primary haemorrhage	2 (20%)	0
Secondary haemorrhage	2 (20%)	2 (20%)

CONCLUSION:

We consider coblation tonsillectomy to be a safe and effective alternative to tonsillectomy. Our study showed a significant difference in postoperative morbidity and complications between patients undergoing coblation tonsillectomy and those undergoing conventional technique. Coblation tonsillectomy significantly reduced the operation time, intraoperative blood loss and postoperative pain, and was associated with early recovery of dietary routine. Smoke production or fogging during surgery with coblation method is less as compared to electrocautery. We recommend this instrument as a suitable alternative method of tonsillectomy.