

A Pilot Randomized Controlled Trial of Coblation Tonsillectomy Versus Dissection Tonsillectomy with Bipolar Diathermy Haemostasis

Mitic S, Tvinnereim M, Lie E, Saltyte B.J. Clin. Otolaryngol. 2007;32:261–267.

TYPE OF STUDY: Prospective, single blind, randomized controlled trial.

OBJECTIVE: To compare postoperative recovery in children between 4 and 12 years undergoing tonsillectomy, using either Coblation tonsillectomy or dissection tonsillectomy with bipolar diathermy haemostasis.

DESIGN: 40 paediatric patients, measuring postoperative pain, nutrition, activity, and use of analgetics for 10 postoperative days.

RESULTS: Intra-operative bleeding was significantly less in the Coblation group ($p=0.05$). Significant differences between dissection and Coblation were found in the day when a score of two of five was passed in pain scores (9.6 versus 6.2), nutrition scores (8.9 versus 6.6), activity score (8.4 versus 6.6) and medicine intake (9.4 versus 6.4).

CONCLUSION: Patients undergoing Coblation tonsillectomy reported less pain, quicker return to normal diet, quicker return to normal activity, and less use of analgetics over a 10-day period than patients undergoing dissection tonsillectomy. Our results indicate that the recovery period for Coblation tonsillectomy was approximately 2 days shorter and demonstrated less morbidity with better postoperative life quality.

Postoperative Pain following Coblation Tonsillectomy: Randomized Clinical Trial

Polites N, Joniau S, Wabnitz D, Fassina R, Smythe C, Varely P, Carney S. ANZ J. Surg. 2006;76:226–229.

TYPE OF STUDY: Prospective, double blind, randomized controlled trial.

OBJECTIVE: This study was designed to compare postoperative pain after tonsillectomy with Coblation and tonsillectomy using the cold steel dissection with bipolar diathermy technique.

DESIGN: Twenty adult patients underwent bilateral tonsillectomy, each having one randomly selected tonsil removed by dissection and the other removed by Coblation. Patients and physicians were blinded as to the side of Coblation treatment. Surgeons were experienced Coblation users. For each side, subjective pain levels were recorded on a daily basis for 10 postoperative days, using a VAS.

RESULTS: Coblation tonsillectomy was significantly less painful than dissection tonsillectomy on day 1 ($P < 0.001$), day 2 ($P = 0.003$) and day 3 ($P = 0.018$). For all subsequent postoperative days, there was no significant difference in pain levels between the techniques. Three patients presented to the ER on the seventh post-op day with secondary hemorrhage, one of them requiring cauterization under general anaesthesia. The hemorrhages occurred on the non-Coblation side in two of these patients (including the one needing surgical intervention) and on one Coblation patient.

CONCLUSION: Coblation tonsillectomy causes significantly less pain during the first three post-op days, when compared with cold dissection tonsillectomy. No demonstrable benefit was shown on days 4–10. The beneficial effects of Coblation on early postoperative pain make it a potentially attractive technique for day-case tonsillectomy in adults with recurrent or chronic tonsillitis.

Coblation Tonsillectomy: A Prospective, Double-blind, Randomised, Clinical and Histopathological Comparison with Dissection–ligation, Monopolar Electrocautery and Laser Tonsillectomies

Magdy EA, Elwany S, el-Daly AS, Abdel-Hadi M, Morshedy MA. J Laryngol Otol. 2008;122(3):282–290.

TYPE OF STUDY: Prospective, double blind, randomized controlled trial.

OBJECTIVE: To compare Coblation tonsillectomy with three commonly used surgical techniques: cold dissection–ligation, monopolar electrocautery and CO2 laser.

DESIGN: 60 adult patients were divided into three equal study groups. Patients in each group were randomly assigned to have one tonsil removed with Coblation and the second with one of the other three tonsillectomy techniques. Ten randomly selected tonsils resected by each method were sent for histopathological evaluation.

RESULTS: Coblation was significantly faster to perform than laser and produced significantly less intra-operative blood loss than both the dissection–ligation and laser techniques. Subjective visual analogue scale comparisons showed a non-significant pain score difference between Coblation and dissection–ligation on most post-operative days. Coblation produced consistently highly significantly less pain ($p < 0.001$), compared with electrocautery up to the 12th post-operative day and laser up to the 10th post-operative day. There was no significant difference in tonsillar fossa healing, comparing Coblation to both dissection–ligation and laser techniques. Monopolar electrocautery produced significantly slower healing than Coblation after 7 post-operative days, with no significant difference after 15 post-operative days. Histopathological evaluation showed that Coblation inflicted significantly less thermal tissue injury than either electrocautery ($p = 0.001$) or laser ($p = 0.003$).

CONCLUSION: In adult patients, Coblation tonsillectomy offers some significant advantages in terms of post-operative pain and healing, compared with other tonsillectomy techniques.

Coblation: Improving Outcomes for Children Following Adenotonsillectomy

Benninger M, Walner D. Clinical Cornerstone. 2007;9 Suppl 1:S13–23.

TYPE OF STUDY: Review.

OBJECTIVE: Review of Coblation adenotonsillectomy compared to older techniques, such as cold steel dissection and monopolar electrocautery.

RESULTS: Compared with curettage, Coblation adenoidectomy offers better visualization of the surgical field due to minimal intraoperative bleeding throughout the procedure. Some experts assert that Coblation offers optimal visualization of the surgical field and a more precise and controlled method of adenoid removal with less damage to adjacent tissue. In numerous clinical studies, both intracapsular Coblation tonsillectomy and total Coblation tonsillectomy have been shown to cause less pain resulting in less postoperative narcotic use and leading to shorter recovery periods than other methods of tonsillectomy. In 2006, 38% of all tonsillectomies performed in the United States were done with Coblation.

CONCLUSION: Patients treated with Coblation have been reported to use less pain medication and often resume normal diet and activity quicker than those who are treated with other techniques. Studies have shown that Coblation is a safe procedure that is not associated with a significant increase in postoperative bleeding when used properly.

Comparison of Post-Tonsillectomy Pain Using the Ultrasonic Scalpel, Coblator, and Electrocautery

Parsons S, Cordes S, Comer B, Otolaryngology Head and Neck Surg. 2006; 134: 106-113.1

TYPE OF STUDY: Prospective, single blind, randomized controlled trial.

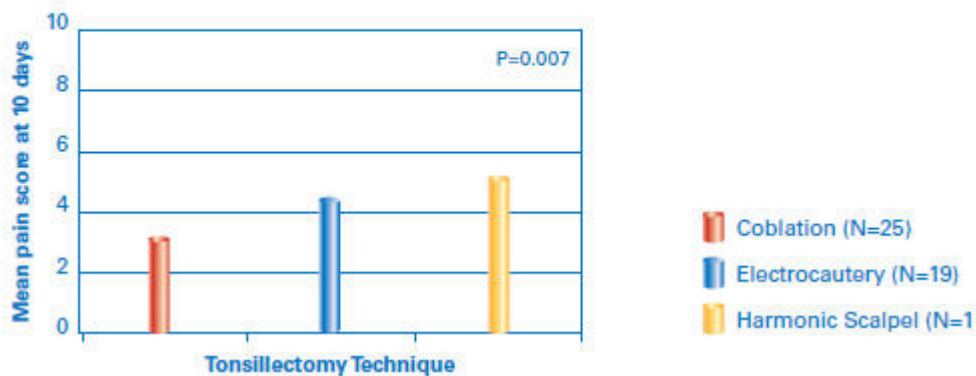
OBJECTIVE: To compare postoperative tonsillectomy pain between three commonly used surgical devices: the Harmonic Ultrasonic Scalpel, the Coblator®, and electrocautery.

DESIGN: A prospective, randomized trial. One hundred thirty four patients were randomly assigned to receive a tonsillectomy with 1 of 3 surgical devices. All patients were asked to fill out a post-op diary.

RESULTS: Statistically significant differences in pain scores were revealed between the Coblator and electrocautery ($P = 0.02$) and between the Coblator and the Ultrasonic Scalpel ($P = 0.003$), with the Coblator having lower pain scores. Electrocautery and the Ultrasonic Scalpel did not differ significantly from each other. The Coblation method showed a strong trend toward quicker return to normal diet.

CONCLUSION: Patients undergoing tonsillectomy with the Coblator device reported less pain over a 10-day period than patients undergoing tonsillectomy with electrocautery or the Ultrasonic Scalpel. Pain after tonsillectomy remains a major issue for our patients. The choice of surgical instrument appears to be one way to reduce this pain.

**Post-op Mean Pain Score:
Coblation vs. Electrocautery vs. Harmonic Scalpel**



Post-op Tonsillectomy Bleed: Coblation Versus Non-Coblation

Divi V, Benninger M. Laryngoscope. 2005;115:31–33.7

TYPE OF STUDY: Retrospective.

OBJECTIVE: To examine the incidence of post-op bleeding after Coblation and non-Coblation Tonsillectomy. To determine the presence of a learning curve with Coblation using post-op bleeding as an outcome measure.

DESIGN: A retrospective of records from January 1999 to April 2003 were reviewed to determine the type of tonsillectomy performed and the presence of post-op bleeding. The examined time period was divided into 3-month intervals, and the Coblation post-op bleeds were tallied for each interval.

RESULTS: One thousand seven hundred and sixty two tonsillectomies were performed. The post-op bleed rate for non-Coblation Tonsillectomy was 6.1%. The bleed rate for Coblation Tonsillectomy was 5.9% and 5.4% for Coblation Tonsillectomy. There was no statistical difference ($P= 0.93$) between bleed rates for Coblation versus non-Coblation Tonsillectomy techniques. The post-op Coblation bleed rates for the 3-month periods did not reveal an increasing or decreasing trend in the post-op bleed rate.

CONCLUSION: No significant difference in post-op bleeding from previous techniques and no increased need for operative intervention to control postop bleeding. A learning curve could not be identified when using post-op bleeding as an outcome measure for Coblation Tonsillectomy.

Pediatric Coblation Tonsillectomy

Temple RH, Timms MS. Int J Pediatr Otorhinolaryngol. 2001;61: 195–198.3

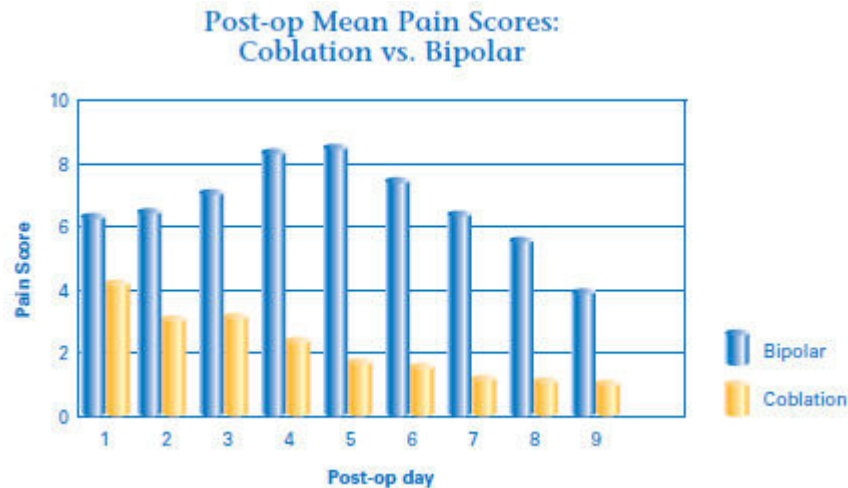
TYPE OF STUDY: Prospective, double-blind, randomized controlled trial.

OBJECTIVE: To compare the difference in post-op pain, tonsillar fossae healing, and return to a normal diet by using Coblation compared to bipolar dissection tonsillectomy.

DESIGN: A double-blind, randomized, control trial comparing Coblation Tonsillectomy to bipolar dissection tonsillectomy in 38 children with a history of chronic tonsillitis or obstructive tonsils.

RESULTS: The benefits of Coblation Tonsillectomy included significant reduction in post-op pain ($P < 0.0001$), faster return to normal diet (2.4 days vs. 7.6 days, $P < 0.0001$) and a reduction in analgesic requirements compared to bipolar dissection tonsillectomy. More rapid healing of the tonsillar fossae was found in the Coblation group. There were no episodes of post-op bleeding in either group.

CONCLUSION: Coblation offers significant advantages in the post-op period, with rapid return to a normal diet and a drastic reduction in analgesic requirements compared to conventional surgical techniques.



Paediatric Tonsillectomy: Radiofrequency-based Plasma Dissection Compared to Cold Dissection with Sutures

Di Rienzo Businco L, Coen Torelli, G, Acta Otorhinolaryngol Ital. 2008, 28:67-72

TYPE OF STUDY: Prospective Controlled Clinical Study

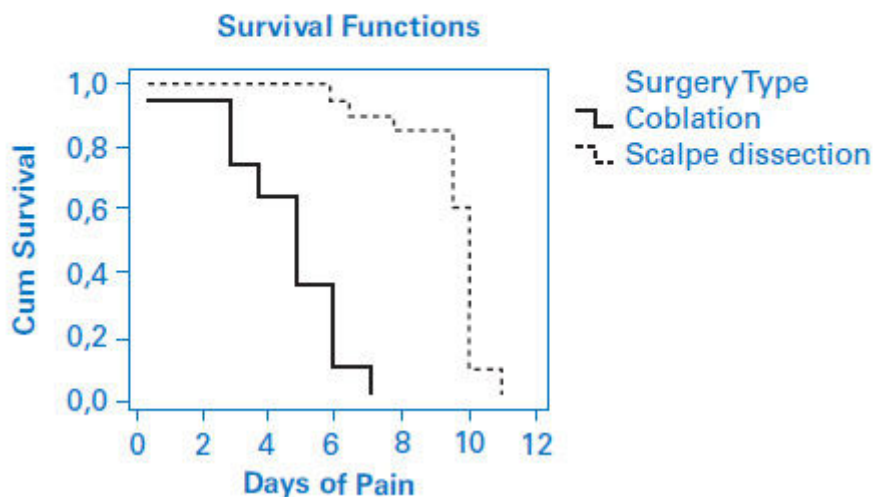
OBJECTIVE: To compare post-op. recovery over 14 days in children submitted to tonsillectomy using Coblation or to cold dissection.

DESIGN: 42 children aged 5-16 were consecutively alternated between assignment to Coblation (Evac 70 wand) or to cold dissection tonsillectomy. All patients and parents were given a post-op. recovery diary to complete daily for 14 days.

RESULTS: Children undergoing Coblation reported significantly less pain on the first post-operative day (1.2 vs 3.5 scores on VAS pain scale), fewer days of pain (4.8 vs 9.4), earlier pain medication withdrawal (2.6 vs 4.5 days), fewer days on liquid diet (5.1 vs 8.5), and fewer school days lost (5.3 vs 8.9). There were no post-op bleedings or other abnormal findings in either group.

CONCLUSION: Coblation significantly improves the quality of postoperative recovery after tonsillectomy over cold dissection. Authors found several benefits of the Coblation technique including the possibility to both excise tissue and coagulate bleeding vessels using the same device. After completion of study, the clinic switched completely to Coblation for tonsillectomies.

Pain resolution for the two treatment groups over the 14-day diary collection period. Median days to resolution was 5 (95% confidence interval = 4.4-5.6) days for pmRI-patients and 10 (9.8-10.2) days for cold dissection patients.



Coblation for Tonsillectomy: An Evidence-Based Review

Shah UK, Dunham B. ORL J Otorhinolaryngol Relat Spec. 2007;69(6):349–357.

TYPE OF STUDY: Review.

OBJECTIVE: This review summarizes the findings in the medical literature with respect to peri- and intraoperative factors and recovery measures for Coblation tonsillectomy.

RESULTS: Coblation results in less tissue injury histopathologically and postoperatively compared to tonsils removed by monopolar electrosurgery (MES). Effectiveness: Coblation is effective for tissue removal. It was reported as more effective than MES when using the plasma wand ($p < 0.02$). Intraoperative Hemostasis: Coblation has been shown to be equivalent with respect to intraoperative bleeding for complete tonsillectomy when compared to MES and for partial tonsillectomy when compared to cold dissection. Primary Hemorrhage: Studies have shown equivalent primary bleeding rates with Coblation for complete and partial tonsillectomy. Secondary Hemorrhage: Most studies have shown no significant difference in secondary bleeding rates. Belloso et al. found that children and adults had less bleeding with Coblation compared to cold dissection followed by bipolar hemostasis. Pain: Evidence does demonstrate a less painful recovery by pain scores and narcotic use for Coblation tonsillectomy, both partial and complete, in contrast to other instruments and techniques. Dietary Recovery: Improved capacity for oral intake is seen for children with Coblation tonsillectomy. The literature also supports improved dietary recovery after Coblation tonsillectomy.

CONCLUSION: A review of the evidence to date supports the use of Coblation for tonsillectomy in children. Compared to other commonly used tonsillectomy technologies, Coblation provides an effective technique which allows for equivalent intraoperative hemostasis, improved pain and dietary recovery and may allow for faster return to activity.

Coblation vs Electrocautery Tonsillectomy: Postoperative Recovery in Adults

Tan AK, Hsu PP, Eng SP, Ng YH, Lu PK, Tan SM, Say JH, Chan YH. Otolaryngol Head Neck Surg. 2006;135(5):699–703.

TYPE OF STUDY: Prospective, double blind, randomized controlled trial.

OBJECTIVE: Comparison of Coblation and monopolar electrocautery tonsillectomy in terms of postoperative pain and recovery.

DESIGN: 67 Patients with recurrent tonsillitis requiring tonsillectomy were randomized to 2 groups: Coblation or monopolar electrocautery tonsillectomy. Postoperative pain, complications, and days taken to return to work and normal diet were compared and analyzed with the aid of a pain diary, given to the patient.

RESULTS: Patients undergoing Coblation tonsillectomy were able to return to normal diet in a shorter space of time following surgery. Patients undergoing Coblation tonsillectomy were more likely to recommend the surgery than patients undergoing electrocautery tonsillectomy. No significant differences in the daily visual analog score for pain were seen for both groups of patients.

CONCLUSION: Our results showed that Coblation tonsillectomy has a faster recovery period and may offer advantages when compared to monopolar electrocautery tonsillectomy.

