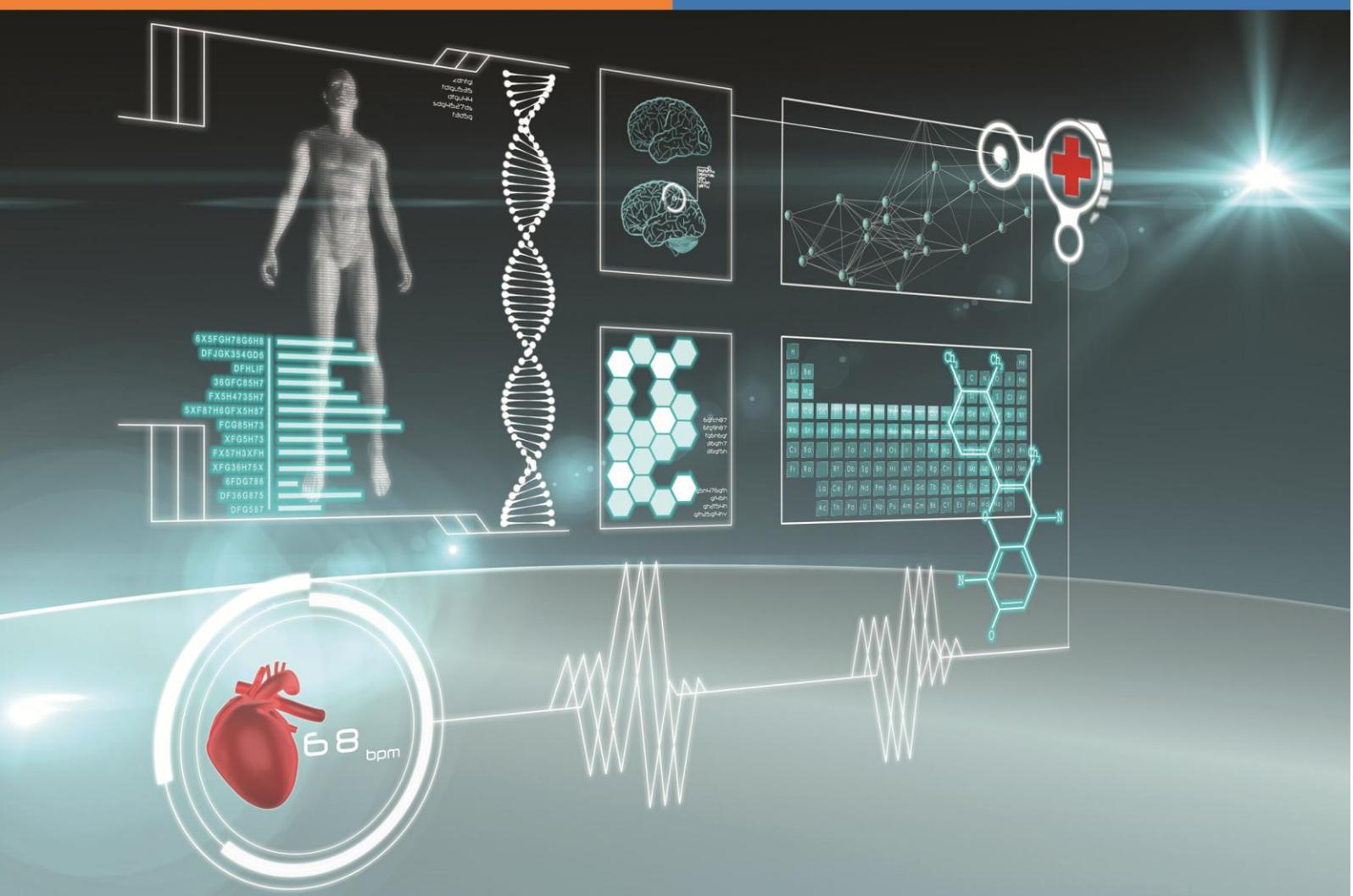


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Coblation-Assisted Tonsillectomy in Hospital University Sains, Malaysia: A Case Report

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Introduction

Innovative new techniques in ENT-HNS to resect tonsillar tissue have been described in the recent literature. We report the first case of a patient who underwent surgery for palatine tonsils removal (tonsillectomy) utilizing coblation method under general anesthesia in the hospital of University Sains Malaysia (USM). Coblation is a method used by ENT surgeons to perform tonsillectomy, adenoidectomy and other surgical procedures. Coblation method use radiofrequency ablation (RFA) as a form of energy similar to radio waves energy but with a higher frequency.

Using a newly developed technology in ENT surgical procedures as a Coblation method to remove palatine tonsils results in significantly less post-operative pain and a quicker return to normal eating and activity than other conventional methods.

In addition to the advantages of this method during tissue resection, coblation causes minimal harm to healthy tissue and less incidence to postoperative nausea and throat swelling.¹⁻³

Case presentation

A 12 years old patient Malay female was electively admitted to otorhinolaryngology-Head and Neck surgery, Hospital University Sains Malaysia for adenotonsillectomy and bilateral myringotomy and grommet insertion. The patient initially was referred to department for hearing loss. PTA and Tympanometry were done with bilateral conductive hearing loss.

The finding after physical examination was documented as allergic rhinitis and chronic hypertrophy of palatine tonsils grade III. Adenoid hypertrophy was also documented by rhinopharyngoscopy. Patient was underwent for tonsillectomy using coblation method. This case of coblation-assisted tonsillectomy is the first surgical procedure to remove palatine tonsils using radiofrequency ablation technique (RFA) "coblation" in our center.

The patient reported minimum discomfort on postoperative day 1, which was managed with pain killer only.

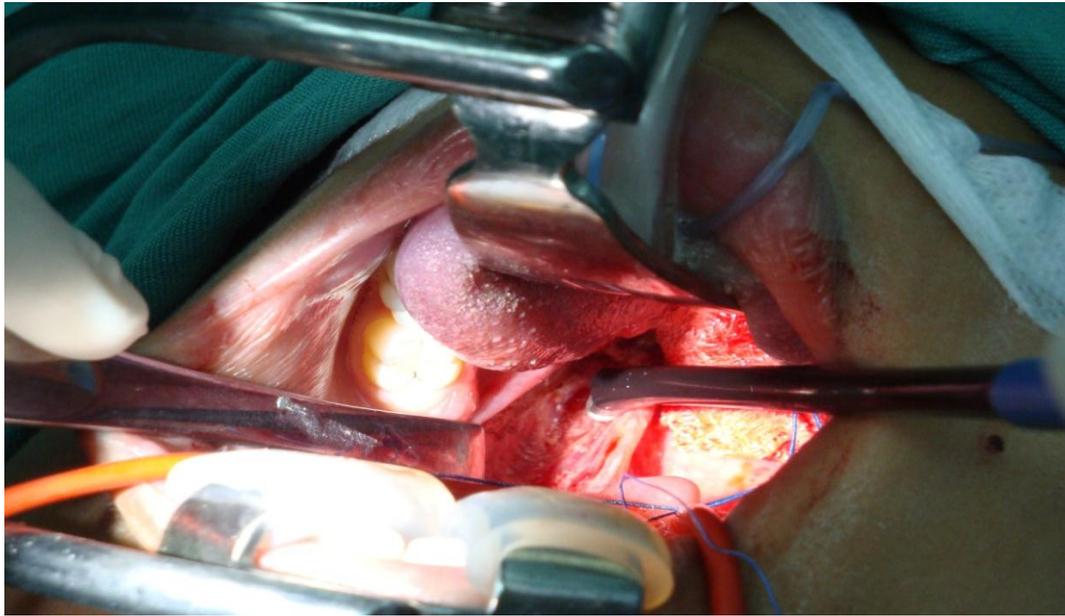


Fig. 1: Shows coblation wand with clean, smooth and uninjured tonsillar bed after left palatine tonsil removal.

Discussion

Tonsillectomy is one of the most common performed surgical procedures worldwide in any surgical specialty. Cold dissection has been the standard method for more than 100 years but is now replaced by coblation technique in more centers. Currently is available wide range of surgical techniques, but all these surgical methods of performing palatine tonsils removal vary in attempt to achieve decreased morbidity.

Use of Coblation technology for tonsillectomy has grown in the last several years. The Coblation process was invented by Philip E. Eggers and Hira V and the technology was acquired by Arthro Care (founded in 1993). The gold standard and the traditional way of removing tonsils is the dissection tonsillectomy. The radiofrequency and ultrasonic devices have been developed and their use has increased during recent decades.⁴⁻⁵

When comparing different tonsillectomy techniques, all studies and discussions usually focuses on the postoperative pain and hemorrhage. In our reported case, the performed coblation-assisted tonsillectomy has been done with surprisingly minimum intraoperative blood loss, shorter operative time and less postoperative pain. Coblation involves passing a radiofrequency bipolar electrical current through a medium of normal saline, producing a plasma field of sodium ions that dissects the tissue by disrupting intercellular bonds leading to tissue vaporisation. The temperature produced and delivered to the tissue during the coblation-assisted tonsillectomy is approximately 40–60°C compared to 400–600°C of electrocautery.¹⁻⁶ Thus the small amount of heat delivered to the tissue intraoperatively which assume to minimize the thermal tissue damage correlates with the postoperative pain.¹

Primary post-tonsillectomy bleeding which is most common related to the surgical technique is the most common post-tonsilectomy complication. Usually it begins during recovery phase which increase risk of aspiration, laryngospasm and collapse of circulation.⁷ In coblation-assisted tonsillectomy the devise uses bipolar radiofrequency energy to ablate and coagulate soft tissue without thermal injury.

Therefore performing tonsillectomy using coblation technique by training surgeon is most common associated with minimal risk of post-tonsillectomy bleeding.^{1,2,7-9} Coblation tonsillectomy has shown promising results with respect to postoperative bleeding, pain and shorter operative time when compared with other surgical techniques. An adult study examined the healing rates of the tonsillar fossae in a small group of 10 patients and found coblation preferable to bipolar dissection.⁸ In the end of our discussion is important to mention to the disadvantage of using this method which is the cost of the disposable coblation wand.

Conclusion

The most common performed operation in ENT-HNS department of HUSM is tonsillectomy. From January 2004 to October 2005 according to a published study, 241 patient underwent tonsillectomies in our center.¹⁰ Because of this large and increasing number of patients undergoing this operation, it is needed for further detailed study to confirm the safety and efficiency of this new surgical technique. Some studies reported in their results similar postoperative complications with using coblation comparing with other traditional surgical techniques. The untrained and less experience ENT surgeons play a major role in the outcomes of performing coblation-assisted tonsillectomy. Thus surgeons who wish to start using new techniques such as coblation should undergo appropriate training. Therefore inexperienced trainees must be supervised by a more senior surgeon until competency has been achieved.

Acknowledgment

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