Comparing Postoperative Morbidity after Microdebrider Intracapsular Tonsillotomy and Cold Steel Dissection Tonsillectomy.

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ARTICLE INFO
Submission date: 8/11 /2018
Acceptance date: 18 11/2018
Publication date: 14/1/2019

Abstract

Aims: This study was designed to evaluate postoperative morbidity in patients underwent microdebrider intracapsular tonsillotomy as compared with Cold steel dissection tonsillectomy.
Patients and Methods: This prospective randomized clinical trial study was carried out in Al-Hilla General Teaching Hospital during the period from March 2017 to July 2018. This study included 40 patients between the age of 4–38 years, requiring tonsillectomy for variable indications. Cold steel dissection tonsillectomy on the right tonsils was compared to microdebrider intracapsular tonsillotomy on left tonsil. We took informed consent from patients and parent after describing operation technique and possible complications.
Results: On postoperative days one to 10, patients notes significantly a whole lot much less pain on the microdebrider intracapsular tonsillotomy side in comparison with the Cold steel dissection tonsillectomy side. By postoperative days 11^{th} to 14^{th}, the distinction among aspects disappeared. Twenty-eight patients (70%) mentioned otalgia, and and it became always unilateral. For those patients mentioned otalgia, there has been a 100% correlation among the aspect of otalgia and the aspect of Cold steel dissection tonsillectomy. There was no post tonsillectomy bleeding among the 40 patients.
Conclusions:
1. Microdebrider intracapsular tonsillotomy is equal to Cold steel dissection tonsillectomy for symptom remedy with a significant reduction in postoperative morbidity.
2. Microdebrider intracapsular tonsillotomy substantially lessen pain and a quicker resumption of a normal diet in comparison with Cold steel dissection tonsillectomy .

Keyword: microdebrider intracapsular tonsillotomy (MT) , Cold steel dissection tonsillectomy(CDT), otalgia .

Introduction

Approach that used for the elimination of tonsil have numerous greatly over the lengthy records of the tactics, ranging from blunt finger dissection to the use of various kinds of electrical and radiofrequency strength to cut, coagulate, and ablate the tissue. at the same time as many of these strategies can be used to excellent impact in experienced hands, all of them have dangers. these dangers are happen inside the exceptional incidence of postoperative bleeding and the varying ranges of postoperative morbidity associated with odynophagia, otalgia, go back to normal diet, and resumption of baseline hobby. no matter those morbidities, tonsillectomy nonetheless the most common executed surgical operation in kids.[1]

Patients & Methods

This prospective randomized clinical trial study was carried out in Al-Hilla General Teaching Hospital during the period from March 2017 to July 2018. This study included 40 patients between the age of 4–38 years, requiring tonsillectomy for variable indications.

These patients were submitted to our questionnaire formula that include general historical information, clinical examination of oral cavity, tonsils, ear examination. the principle inclusion standards for this look at where: tonsillar hypertrophy (grades 3–4) in line with brodsky scale.[2] We took informed consent from patients and parent after describing operation technique and possible complications.

All patients underwent tonsillar surgery under general anesthesia by using oro-tracheal tube in Rose position, with the mouth open with a mouth gag. Right side tonsillectomy become achieved through Cold steel dissection method the plane isolating the tonsillar capsule from the pharyngeal muscle, and bleeding became controlled through bipolar cautery.

The left tonsil, with the microdebrider (4-mm-diameter blade set to 2000-3000 rpm in oscillating mode) held in the right hand, beginning medially and intending laterally. When the plane of the pillars has been reached, a Morrison's retractor is used to retract the anterior pillar, pushing the remaining tonsil medially , and permit deeper quantities of the tonsillar tissue to be shaved. cautious attention turned into paid to keep away from trauma to the pharyngeal pillars, tonsillar capsule and pharyngeal constrictor muscle.. Dissection turned into accomplished, leaving a narrow, concave rim of tonsil tissue to better keep the capsule and defend vessels, and terminal nerves. Hemostasis was completed using bipolar cautery as needed.

Postoperative antibiotic treatment was administered ampiclox By intramuscular or slow intravenous injection, ampiclox 250/250 every 6 hours; CHILD 2–10 years half adult dose, and continued for 6 days postoperatively on ampiclox by mouth (Capsules or Syrup) , co-fluampicil, 250/250 every 6 hours; CHILD under 10 years half to adult dose.

All patients was prescript a pain killer , oral paracetamol (20 mg/kg) postoperative prescription of up to 100 mg/kg of paracetamol in 24 hours every 6 hrs. with a maximum of 4 time per/day.

Data that collected were patient's age, gender, and operative time for each sides; amount of intraoperative blood loss for each sides; intraoperative and subsequent complications(bleeding, traumas, completeness of removal of tonsils) ; pain assessment during recovery days by using Wong-Baker FACES Pain Rating Scale [3] for children and The Numeric Pain Rating Scale [4] for adults, both of them score from 0 to 5 (on postoperative days zero,1,3,7,10 and 14) till go back to regular interest and normal diet; variety of days of analgesic use; otalgia. Telephone questionnaire is used to maintain contact with the patients and/or parents.

the paired *t* test became used to examine the differences in ache ratings for the throat. the correlation between the aspect of any mentioned ear pain and the technique accomplished on that aspect changed into also examined.

Results

1. Age of patients in study

Patients age were among 4 and 38 years ; the mean ± Standard Deviation age was 11.68 ± 7.44 years (see Figure 1).

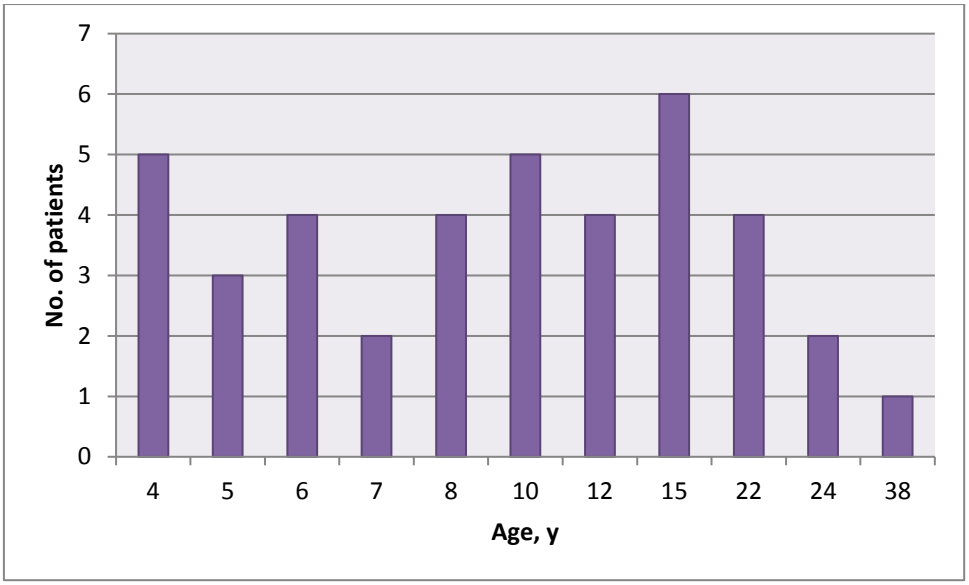

Figure 1 Distribution of age for study patients (mean age 11.68 years; range 4-38 years).

2. Gender distribution

A total of forty patients were listed within the study; twenty four were male (60%) and sixteen were female (40%) creating male to female ratio of 1.5:1 as shown in(figure 2 and in table 1).

Table 1: gender distribution

Gender	number	Percentage
Male	24	60%
Female	16	40%
Total	40	100%

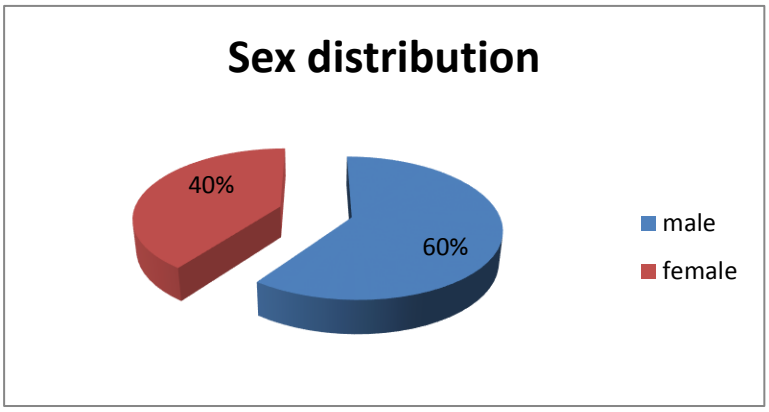

Figure 2 gender distribution.

3. Intraoperative blood loss

The median quantity of intraoperative blood loss was 9.3 ± 4.7 ml in left side microdebrider intracapsular tonsillotomy and 17.5 ± 5.9 ml in right side Cold steel dissection tonsillectomy.

Neither intra- or postoperative bad events was occurred in all patients for both sides , nor immediate or delayed bleeding was determined.

4. Surgical time

The surgical time was 6 ± 3.1 min in left side microdebrider intracapsular tonsillotomy and 8 ± 3.4 min in right side Cold steel dissection tonsillectomy after complete haemostasis by cautery for both sides separately.

5. Otalgia postoperatively

We as compared the presence or absence and the side of otalgia to the procedure achieved to study whether an association became present among it and both aspect microdebrider intracapsular tonsillotomy or Cold steel dissection tonsillectomy. Of forty patients, 28 (70%) mentioned otalgia, which turned into always unilateral. In patients mentioned otalgia, we have a tendency to found a 100% correlation between the aspect of otalgia and the aspect of Cold dissection method tonsillectomy.

6. Pain score

Wong-Baker FACES Pain Rating Scale (Table 2) and The Numeric Pain Rating Scale pain scores for the MT(microdebrider intracapsular tonsillotomy) and CDT(Cold steel dissection tonsillectomy) sides ranged from 0 to 4 and from 0 to 5, respectively. Mean Wong-Baker FACES Pain Rating Scale on each side ranged from 0.72 to 3.85 with standard deviations between 0.06 and 1.15. From days zero to 10, MT was significantly less painful than CDT, with differences between the means of both sides 0.29 on day 10^{th} to on day zero 1.75 (paired t test, < P.001 to .009). Thereafter, the distinction resolved. The Records on both MT and CDT aspects show a consistent decline in pain over the first 11 to 14 days. On the MT side, mean Wong-Baker FACES Pain Rating Scale leveled off at a score of 1 on day 7, while on the CDT side, the mean dropped to a score of 1 on day 10. No patients experienced an increase in mean Wong-Baker FACES Pain Rating Scale on either side from one day to the next over the course of the study. By postoperative days 10 to 14, the distinction between sides decreased until disappeared on day 14^{th} . Figure 3 and the Table 2 show the mean Wong-Baker FACES Pain Rating Scale by day for each aspects over the study.

Table 2 Wong–Baker Faces Pain Rating Scale (WBFPRS), for MT and CDT Sides by Postoperative Day.

Postoperative day	MT Mean Score	CDT Mean Score	P Value (Paired t Test)
zero	2.1 ± 1.1	3.85 ± 0.6	.002
1st	1.45 ± 1.15	3.35 ± 0.5	<.001
3rd	1.2 ± 0.59	2.75 ± 0.6	<.001
7th	0.95 ± 0.06	1.65 ± .65	.003
10th	0.86 ± 0.21	1.15 ± 0.3	.009
14th	0.72 ± 0.16	0.75 ± 0.18	.42

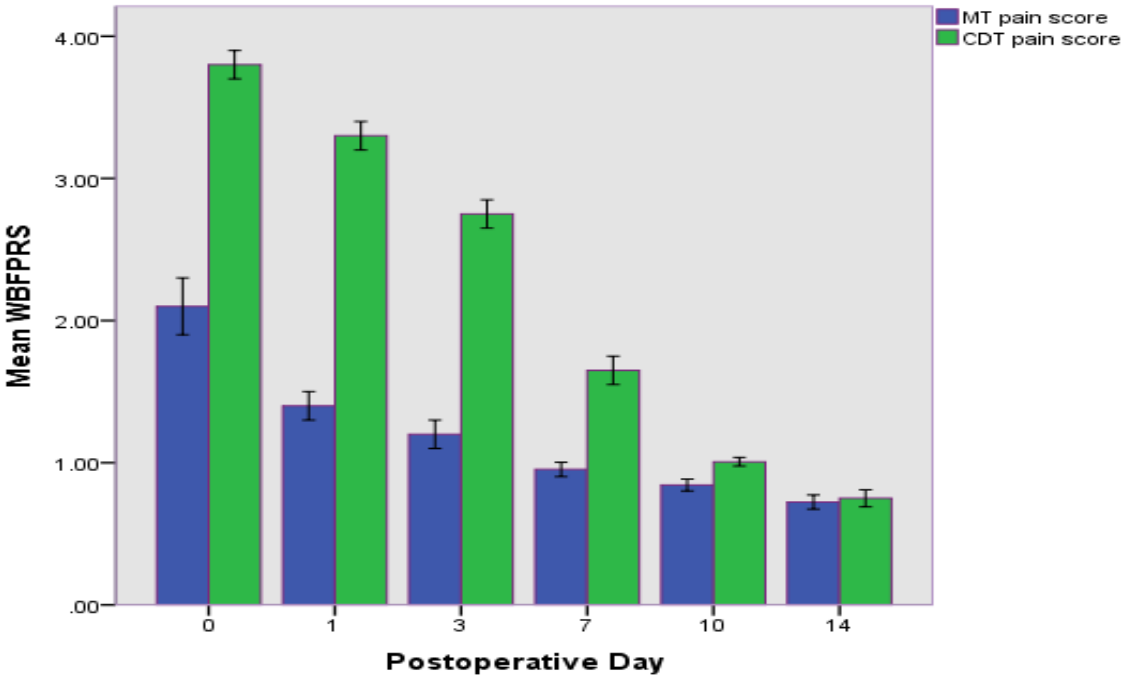

Figure 3 Mean Wong–Baker Faces Pain Rating Scale (WBFPRS) by postoperative day comparing paired tonsillar procedures performed in 40 patients showing a distinction in pain scores until 10 days postoperatively. CDT indicates Cold steel Dissections Tonsillectomy; MT, Microdebrider Tonsillotomy.

Discussion

The current study confirmed that microdebrider intracapsular tonsillotomy encompasses a abundant lower impact on postoperative pain than traditional Cold steel dissection tonsillectomy. For the microdebrider intracapsular tonsillotomy patients skilled considerably much less postoperative pain, as established with the aid of the Wong-Baker FACES Pain Rating Scale and The Numeric Pain Rating Scale.

Intracapsular tonsillotomy preserves the tonsillar capsule, warding off direct surgical violation of pharyngeal muscular tissues and providing a biological "dressing" [5,6] that maintains the muscle tissue isolated from secretions. This prevents irritation of the muscle tissues, thereby decreasing postoperative pain and recuperation time.

In our study, there was no difference in parameters (blood loss, time of surgery, otalgia and pain score) regarded to gender and age.

Regarding blood loss, we found difference in the mean and standard deviation on both sides 8.2 ± 1.2 ml with less blood loss in microdebrider intracapsular tonsillotomy side. In another study Koltai et al found the mean of difference about 5 ml with also less blood loss in microdebrider intracapsular tonsillotomy. That agrees with our results.[7]

Regarding surgery time, we found difference in the mean and standard deviation of both sides 2 ± 0.3 min with less time needed for microdebrider intracapsular tonsillotomy side.

Regarding pain score, we found Mean WBFPR Scale on each aspect ranged from 0.72 to 3.85 with standard deviations between 0.06 and 1.15. From days zero to 10, MT was

appreciably much less painful than CDT. Thereafter, the distinction resolved. In another study Koltai et al found the group of children that underwent MT records less pain score all time of study than CDT group.[8]

Conclusion

Our short term data confirm that

1- Microdebrider intracapsular tonsillotomy is equal to Cold steel dissection tonsillectomy for symptom remedy with a significant reduction in postoperative morbidity.

2- Microdebrider intracapsular tonsillotomy substantially lessen pain and a quicker resumption of a normal diet in comparison with Cold steel dissection tonsillectomy .

Recommendations

1- A bigger number of cases and long term observe-up would possibly affirm the efficacy of Microdebrider intracapsular tonsillotomy.
2- This method may be taken into consideration a valid opportunity to the conventional one in affected person need tonsillectomy.
3- Farther studies can be beneficial in comparing units and techniques now available for tonsillar surgery to determine the most fulfilling preference in phrases of safety, efficacy, price, and ease of use.
4- We recommended to use Microdebrider intracapsular tonsillotomy as a good option for patients with tonsillar hypertrophy .

CONFLICT OF INTERESTS.
There are non-conflicts of interest.

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المقارنة المرضية ما بعد اجراء عملية رفع اللوزتين بطريقه المايكرودبرايدر والطريقة المعتادة

المقدمه : تقنية استئصال انسجه اللوزتين قد اختلفت بشكل كبير على مدى تاريخ طويل من الإجراءات، بدءا من الاستئصال بالأصابع إلى استخدام أشكال مختلفة من الطاقة الكهربائية والترددات الإشعاعية لتخثر ورفع الأنسجة. في حين أن العديد من هذه التقنيات يمكن استخدامها بتأثير جيد في أيدي ذوي الخبرة، لديهم كل أوجه القصور. هذه العيوب واضحة في حالات متفاوتة من نزيف بعد العملية الجراحية. ودرجات متفاوتة من الاعتلال بعد العملية الجراحية مثل الم البلع، ألم الاذن، العودة إلى النظام الغذائي العادي، واستئناف النشاط الأساسي. على الرغم من هذه الحقائق، تواصل استئصال اللوزتين لتكون العملية الجراحية الكبرى الأكثر شيوعا في الأطفال.

الهدف من الدراسه: قد تم تصميم هذه الدراسة لتقييم الألم بعد العملية الجراحية في المرضى الذين يخضعون لرفع اللوزتين بالمايكرودبرايدر مقارنة مع الطريقة التقليدية المعتادة.

المرضى وطرائق العمل : هذه دراسة مستقبليه عشوائية، دراسة الحالة السريرية والشواهد التي أجريت في قسم طب الأذن والحنجرة / مستشفى الحلة التعليمي في الفترة من مارس 2013 إلى نوفمبر 2014 على 40 مريضا تتراوح أعمارهم بين 4–38 سنوات بحاجه الى استئصال اللوزتين لأسباب متنوعه. ومقارنة آلالم ما بعد اجراء جراحة استئصال اللوزتين بالطريقة التقليدية في الجانب الايمن وطريقة المايكرودبرايدر في الجانب الايسر بعد اخذ الموافقة الخطية من قبل المريض واهله من الدرجة الاولى.

النتائج :في أيام ما بعد الجراحة1 إلى 10، ابدى المرضى الم أقل بكثير على جانب المايكرودبرايدر مقارنة مع جانب الطريقة التقليدية. الايام 11 الى 14 ما بعد العملية اختلاف حدة الالم ما بين الجهتين يختفي. وافاد ثمان وعشرون مريضا (70٪) وجود الم في الاذن، وكان دائما من جانب واحد. بالنسبة لأولئك المرضى الذين أفادوا بوجود الم في الاذن ، كان هناك ارتباط بنسبة 100٪ بين جانب الم الاذن وجانب الطريقة التقليدية. لم يكن هناك نزيف بعد العملية بين 40 مريضا (فترة الثقة 95%) .

الاستنتاجات :

1. استئصال اللوزتين بطريقه المايكرودبرايدر مساويه لاستئصال اللوزتين التقليدية لتخفيف الأعراض مع حدوث انخفاض كبير في معدلات الخطرالمحيطة بالجراحة.
2. استئصال اللوزتين بطريقه المايكرودبرايدر ذات الم أقل بكثير ورجوع بوقت اسرع الى النظام الغذائي المعتاد مقارنة مع استئصال اللوزتين التقليدية.

التوصيات :

1. عدد أكبر من الحالات والمتابعة الطويلة قد تأكد فعالية استئصال اللوزتين بطريقه المايكرودبرايدر لعلاج صعوبة التنفس أثناء النوم بسبب كتلة اللوزتين.
2. الدراسات المستقبلية ستكون مفيدة في المقارنة بين الأدوات والتقنيات المتاحة الآن لعملية جراحة اللوزتين لتحديد الخيار الأمثل من حيث السلامة والفعالية والتكلفة وسهولة الاستخدام.

الكلمات الدالة :_المايكرودبرايدر , الم الاذن .