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خفض ألم ما بعد استئصال اللوزتين بين البالغين

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الهدف: تقييم مدى تأثير ديكساميثازون على تخفيف ألم ما بعد استئصال اللوزتين في البالغين.

الطريقة: أُجريت هذه الدراسة في قسم الأذن والأنف والحنجرة مستشفى الثورة التعليمي صنعاء اليمن خلال المدة يناير 2016-يناير 2018 شملت الدراسة 120 مريضاً. حيث أُجريت لهم عملية استئصال اللوزتين تحت التخدير العام. وتم تقسيم المرضى إلى مجموعتين كل مجموعة 60 مريضاً. المجموعة الأولى تم حقنهم في موضع اللوزتين بدكسا ميثازون والمجموعة الثانية تم حقنهم بمحلول ملحي بكميات متساوية. ثم تم ملاحظة الألم في اليوم الثالث والسادس والتاسع ومقارنتها بين المجموعتين.

أعطيت تعليمات للمرضى لمراجعة العيادات الخارجية للأذن والأنف والحنجرة ثالث وسادس وتاسع يوم من بعد إجراء العملية.

النتائج : كان عدد الإناث 52. 5%وعددالذكور47.5% كان هناك فرق واضح في إنخفاض شدت الألم بين المجموعتين وخاصة في اليوم الثالث والسادس من بعد العملية.

الخاتمة: وجد أن استعمال الديكساميثازون موضعيا بعد استئصال اللوزتين مباشرة يؤدي إلى تخفيف ألم ما بعد العملية وليس له مضاعفات تُذكر.

الكلمات المفتاحية: استئصال اللوزتين ، آلام ما بعد استئصال اللوزتين ، ديكساميثازون ، المنشطات.

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Post-Tonsillectomy Pain Relief Among Adults

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ABSTRACT

Objective: To evaluate the effectiveness of dexamethasone to reduce post-tonsillectomy pain in adult.

Patients and Methods: A total of 120 patients were enrolled who underwent to tonsillectomy under general anesthesia and divided randomly into two equal groups, dexamethasone group and placebo group. This study was conducted in OtoRhinoLaryngology Department, Al-thawra Teaching Hospital, Sana'a, Yemen. During the period January 2016 to January 2018.

The patients asked to visit the outpatient clinic on 3rd, 6^{th}, and 9^{th} day post operation.

Results: Females were 52.5% and males 47.5%. On the third day, the severe pain was not detected in the treated group, however, it detected in 50% of the placebo group. There was statistically significant difference between two groups. On the 6th day the severe pain occurred in 36% of treated group and 71.7% in the placebo group. There was a statistically significant difference. On the 9^{th} day the severe pain detected in 33.3% of treated group and 41.6% of placebo group non statistically significances difference.

Conclusion: Dexamethasone locally injection was led to reducing post-tonsillectomy pain over a period of 9 days ,especially on third and sixth days.

Key words: Tonsillectomy, post-tonsillectomy pain, dexamethasone, steroids.

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Introduction:

Tonsillectomy continues to be one of the most common surgical procedures performed worldwide. Despite improvements in anesthetic and surgical techniques, post-tonsillectomy morbidity has continued to be a significant clinical concern[4].

Tonsillectomy in children and adults has always been a controversial topic and has promoted endless discussion. There is doubt that there are indications for adult tonsillectomy, but the surgeon must be clear in his mind that he is confident that he is going to help the patient by removing the tonsils [6].

Postoperative pain presents a problem. Some favour injecting local anesthetic agents and dexamethasone, and nerve blockages, in the tonsillar bed, just prior to surgery and certainly immediately post operative intramuscular in order to reduce pain but there is still no consensus on these issues [2]. Opioids and non steroids reduce post-tonsillectomy pain, these drugs not preferred due to their adverse effects of bleeding, vomiting, sedation and respiratory depression. Problems arise in the maintenance of analgesia throughout the 6-8 days postoperative period [15]

There is no available analgesia that is appropriate and sufficiently powerful to relieve post-tonsillectomy pain totally over a 7days period[6].Numerous attempts have been made to reduce postoperative pain, these include improved intraoperative anesthetic pain regimens, use of perioperative corticosteroid, perioperative antibiotic and intraoperative injection of local anesthetic [16,18,21]. Other measures used to prevent pain have included local injections of antibiotic-steroid -analgesic combination drugs, but these have had questionable success [18,24].

The mechanism of pain has been attributed to irritation of sensory nerve endings [18] as well as to spasm of the pharyngeal muscles due to local tissue damage during operation that causes the release of inflammatory substances[21].

The aim of this study was to evaluate the effect of injection of corticosteroid locally immediately post – tonsillectomy on pain after the operation.

Patients and Methods: The prospective study included 120 patients, With approval for study by our Hospital, Ethics committee, and with patients written informed consent, randomized double blinded controlled study was conducted by authors in the Department of OtoRhinoLaryngology at Al-Thawra Teaching Hospital, Sana'a, Yemen. During the period from January 2016 - January 2018.

Inclusion criteria, males and females 16-29 years, non hypertensive, or diabetic, or malignant or peritonsillar abscess or acute inflammation. Cases diagnosed as chronic tonsillitis from the history and clinical examination. Hypertrophic tonsils with upper airway obstruction, obstructive sleep apnea syndrome, no history of chronic pain medications, no any contraindications for application of steroids, no history of previous tonsillar operation. The patients underwent

elective tonsillectomy under general anesthesia by nasotracheal tube, and sharp dissection method was used to remove the tonsils and hemostasis was done by ligation or coagulation then dexamethasone injected locally . The patients stayed in the hospital under observation for 24 hours. The patients were randomly assigned in to two groups, injected group **(dexamethasone group) n = 60 patients, non injected group (placebo group) n = 60 patients.** Dexamethasone group, injection of dexamethasone locally immediately post operative 8mg/2ml, into each side, (total dose =16 mg/4ml) in the anterior, posterior pillars, the upper and lower pole areas on both sides in equal amount into each area, by using intravenous cannula needle No. 24 G. Placebo group, injected equally amount of normal saline into the same sites. All patients received broad spectrum antibiotics 7days, post-operative and analgesic was given according to intensity of pain. Our protocol for management of post-tonsillectomy pain was prescriped single or combination of analgesic drugs. Included patient were examined on 3rd, 6th and 9th day post-operation, in the outpatients clinic for evaluation and complete blood count study. Visual analogue score was used for assessment of severity of pain postoperatively. Data were analyzed statistically by using chi. square

Results: A total of one hundred twenty patients, males 57 patients (47.5%) and females were 63 patients (52.5%),(table 1), age was 16-29 years, mean age 19.79.The stander deviation is _+3.52.. Pain post – tonsillectomy on 3rd day shown in (table 2).In treated group severe pain did not found, while severe pain has occurred in 50% of non treated group. There were significant differences between the two groups (p 0.001). Pain post tonsillectomy on 6th day shown in (table 3).Severe pain was found in 36% of the treated group, while it was found in 71.7% of non treated group. There were significant difference between two groups (p 0.001). Pain post-tonsillectomy on 9th day shown in (table 4).Severe pain was found in 33.3% of treated group, while it was found in 41.6% in non treated group. There were no significant differences statistically. Noticed that severe pain was occurred more on 6th day in both groups, treated group 36%, and in non treated group71 .7%.Numeric rating scale was used to measure pain intensity, 0-no pain,1-3mild pain,4-6moderate pain, 7-10 severe pain. Comparison between sever pain in two groups showed in figures (1,2).

(Table 1.) Sex distribution

Sex of patients	No	%
Males	57	47.5
Females	63	52.5
Total	120	100

(Table 2) pain on 3rd day

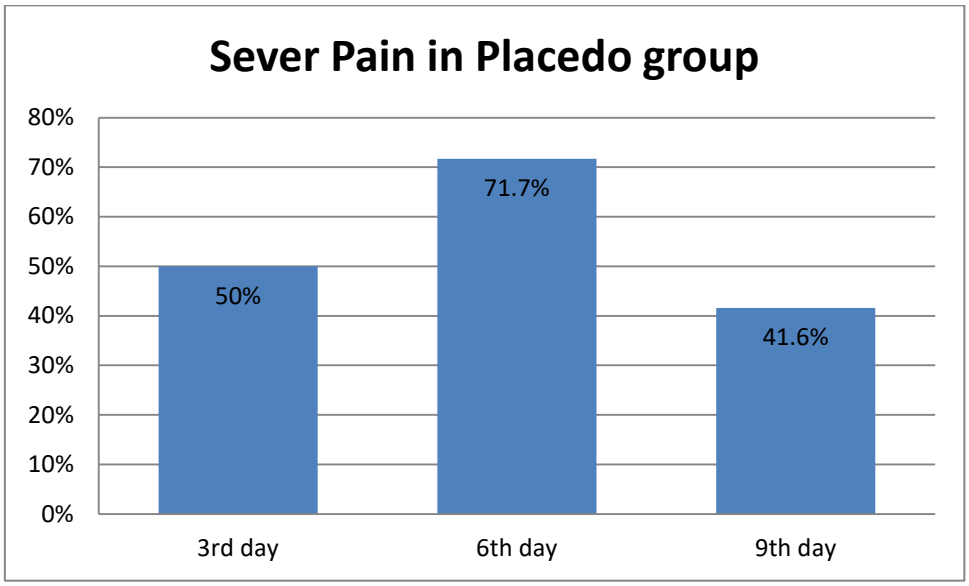
Patient Groups	Mild pain	Moderate pain	Severe pain	Total	P value
Treated Group n= 60	45 (75%)	15 (25%)	0 (0%)	60	0.001
Placebo Group n= 60	3 (5%)	27 (45%)	30 (50%)	60	

(Table 3) pain on 6th day

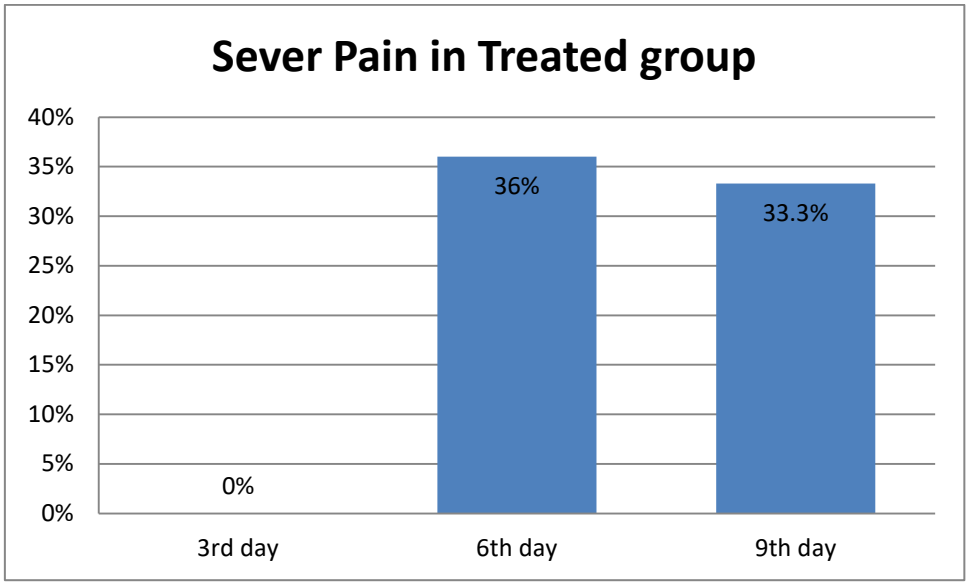
Patient groups	Mild pain	Moderate pain	Severe pain	Total	P value
Treated group n=60	25 (42%)	13 (22%)	22 (36%)	60 (100%)	0.001
Placebo group n=60	0 (%0)	17 (28.3%)	43(.71.7%)	60(100%)	
Total	25	30	65	120	

(Table 4) Pain on 9th day.

Patient groups	Mild pain	Moderate pain	Severe pain	Total	
Treated group n=60	30 (50%)	10 (%16.6%)	20 (%33.3%)	60	
Placebo group n=60	20 (%33.3%)	15 (25%)	25 (41.6%)	60	
Total	50	25	45	120	



(Figure 1)



(Figure 2)

Discussion:

Tonsillectomy is one of the most common surgical procedures in otolaryngology and throughout the world, for children and adults. Pain reduction is crucial in order to provide patients comfort and enable them to go through this course more comfortable, beside the disruption of quality of life [25]. Tonsillectomy is known to cause severe pain postoperatively, the pain affects the patient nutrition, ability to return to daily activity and delayed discharge from the hospital [24]. Previous meta-analyses have demonstrated that steroids can significantly reduce post-operative morbidity and hasten early return to diet [20,9]. The results of one meta-analysis suggest that a single intraoperative dose of dexamethasone intravenous reduces post-tonsillectomy pain on early days when compared to placebo[1].

In our study dexamethasone reduced severe pain in the post-tonsillectomy patients. Severe pain was not occurred in the treated group in comparison to non treated group where occurred in 50% of the patient on 3rd day. However, mild and moderate pain still occurred in 45%, 15% respectively on 3rd day post-tonsillectomy in the treated group. On 6th day severe pain occurred in 36% patients in the treated group, while in non injected group severe pain occurred in 71.7% ($P < 0.0001$), that mean dexamethasone reduces post-tonsillectomy pain, this results similar to results of previous studies [9,1] demonstrated a significant reduction in pain by dexamethasone when compared to control. On the 9th day severe pain occurred in 33.3% of patients in the treated group, however, in non treated group severe pain occurred in 41.7% ($P < 0.169$).Reduction in pain was non statistically significant. pain management after tonsillectomy remains a dilemma for the surgeon and

anesthetist.

The mechanism by which dexamethasone may exert an analgesic effect is not fully understood. Dexamethasone inhibits phospholipase and thereby decreasing production of the cyclooxygenase and lipooxygenase pathway which aggravate pain, corticosteroids also inhibit expression of cytokine genes and release of pro inflammatory mediators [17]. Systemic corticosteroid administration has been found to suppress tissue levels of bradykinin [11], and release of neuro peptides from nerve endings [12], both of which can enhance pain in inflamed tissue [9]. The established reduction in prostaglandin production mediated by might further contribute to analgesia by inhibiting the synthesis of the cyclo-oxygenase isoform (cox-2) in peripheral tissues and in the central nervous system[8]. Result of meta-analysis suggests dexamethasone results in a statistically significant reduction in post-tonsillectomy pain on post-operatively first day when compared to placebo [7]. Pain reduction post-tonsillectomy hastens early return to normal diet and reduce the risk of dehydration. A clinically significant findings for adult patients, the earlier turn to normal activity could mean an earlier return to work [12]. Preoperative dexamethasone using reduces post-tonsillectomy morbidity in the early postoperative period .The combination of steroid and cold dissection technique provided the greatest advantage in reducing post-tonsillectomy pain level [10].

There is evidence that a single dose of dexamethasone reduces pain after tonsillectomy over eight days to the low degree.[5].While other study reported that there were no statistically or clinically significant difference between the dexamethasone and placebo groups for the level of pain noted on the visual analogue scale for the first 4 and 7 days[14].there was reported that single dose perioperative intravenous injection of dexamethasone relieved post-tonsillectomy pain significantly after surgery [3]. One study mentioned that the effect of tonsillar fossa steroid injection for the reduction of post-tonsillectomy pain is well documented [13].

The most previous studies were used steroids by the intravenous route, this may explain the short duration of the effectiveness of steroids on post-tonsillectomy pain. In our study we used dexamethasone locally that led to better pain relief post-operative

Numerous approaches have been attempted for this purpose. Many techniques and drugs have been used such as peritonsillar local anesthesia, nerve blockage, dexamethasone or different surgical approaches in order to reduce pain, but there is no consensus [23]. Multianalgesics has become the standard of care in postoperative pain management. Combination analgesics with different sites or modes of action are commonly used to improve analgesic and to reduce dose of individual analgesic and to reduce adverse effectives [22].

For adult patients, pain management is particularly challenging because they often take longer to heal than children, and as a result they not infrequently

request pain medications for relief [19].

Conclusion:

We found a single local dexamethasone injection immediately post operative reducing post-tonsillectomy pain in high percentage patients. As the side effects and the cost of dexamethasone dose are low and there were no side effects found. Consideration of using this drug is reasonable in post-tonsillectomy specially in the adult patients who underwent to operation.

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