

## Post Tonsillectomy Pain Relief: Comparative Study between Peritonsillar Infiltration of Bupivacain and Intramuscular Diclofenac

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### Abstract

Hospital based study carried out on (40) patients from both sexes, aged (4-26) years, underwent Tonsillectomy by dissection method during the period extend from (June 2012 to September 2012). The Patients were divided into two groups- Group A (18) patients: include those with pre-incisional – infiltration of bupivacain with subsequent (spray) post operatively on Tonsils bed at evening and next morning. Group B (22) patients: include those patients with diclofenac intramuscular injection, half hour before operation with subsequent doses at evening and next morning. (Result): no difference in history of post- operative nausea and vomiting regarding the two groups. The mean operative time for group (A) was (28.9) minutes, while the mean operative time for group (B) was (29.5) minutes. Both groups showed no difference regarding reactionary bleeding (bleeding occurs within 24 hours) or secondary bleeding (Bleeding occurs after 6-8 days due to infection). Group (A) showed low score of pain in immediate post-operative time but it was not significant, while group (B) showed low score of pain in most of the cases at evening, it was significant. No difference in both groups in the next morning both showed low score of pain. Conclusion: intramuscular diclofenac is more potent as pain relief if compare with Bupivacain infiltration. *Aim of study:* To identify the effect of infiltration of bupivacain for post tonsillectomy pain-relief and in compare to intramuscular injection of diclofenac.

### Keyword

Tonsillectomy, pain relief, bupivacain, diclofenac.

تخفيف الم ما بعد رفع اللوزتين مقارنة ما بين مادة البافكاين الموضعي والدايكلوفيناك العضلي

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### الخلاصة

الدراسة أجريت في المستشفى على ( 40 ) مريض أجريت لهم عملية رفع لوزتين ومن كلا الجنسين حيث كانت أعمارهم تتراوح من ( 4 - 26 ) سنة وقد تم تقسيم المرضى الى مجموعتين: المجموعة الأولى أ ( 18 ) مريض حيث تم حقن مادة البافكاين في وقت العملية ثم تسييح المادة ذاتها ليلاً وكذلك في اليوم التالي. أما المجموعة الثانية ب ( 22 ) مريض فقد أعطوا جرعة عضلية من مادة الدايكلوفيناك العضلي قبل العملية بنصف ساعة كذلك أعطوا جرعة أخرى ليلاً وجرعة ثالثة في اليوم التالي. امتدت الدراسة من شهر أيار 2012 م الى أيلول 2012.

وكانت النتائج أنه لا يوجد تغيير في وقت العملية لكننا المجموعتين وكذلك لا يوجد فرق في مستوى نرف العملية. المادتين متشابهة في الفعالية بالنسبة لتخفيف الألم ولكن مادة الدايكلوفيناك كانت أفضل بالنسبة لما بعد العملية في تقليل الألم مقارنة بمادة البافكايين ( الجرعة الليلية ) على انه لا يوجد تغيير في اليوم التالي .

## Introduction

The palatine tonsils are an oval mass of lymphoid tissue situated in tonsillar bed, the floor of the tonsil is formed by pharyngolassillar fascia, deep to it is the superior constrictor muscle. Gloss pharyngeal nerve (sensory nerve responsible for the pain) pass obliquely beneath the lower edge of superior constrictor muscle.<sup>(1)</sup> Bupivacain: is a potent-long acting local anesthesia, with duration of action of four hours. Useful features when post-operative pain relief is required. Four times as potent as lignocaine, is used in concentration of (0.25-0.5%) and maximum safe dose is 2mg/kg.<sup>(2)</sup> Diclofenac is a reversible cyclo oxygenize, prostaglandin inhibitor. Decrease both thromboxane A2 and prostaglandin acting as an anti-inflammatory, analgesia, antipyretic and inhibit platelets aggregation at peak time of action (2-3 hours) and metabolized in liver and excreted in urine with usual dose of 0.5-1.5mg/kg.<sup>(3)</sup>

## Patients and methods

Hospital based controlled study carried out on (40) patients, aged (4-26) years from both sexes underwent Tonsillectomy by dissection method and hemostasis secured by ligature. Study had been done from period extend from (June 2012 to September 2012).The Patients were divided into two groups; group A (18) patients with pre incisional infiltration of bupivacain, other two doses given as spray to tonsillar bed at evening and next morning. Group B (22) patients were diclofenacsodium was given intramuscular half-hour before operation, other two doses at the evening and next morning. Operative time was recorded, follow up of the patients for post-operative nausea, vomiting and secondary tonsillar bleeding. Post-operative pain follow up depend on (visual pain analogue scale) which is the major objective in our study, statistical analysis was done depending on (T2) test.

### American anesthesia society (visual pain analogue scales)

Score 0	Score (2)	Score (4)	Score (6)	Score (8)	Score (10)
None	Annoying	Uncomfortable	Dreadful	Horrible	agonizing

## Results

The following variables had been taken in this study (operative time, history of nausea, vomiting, reactionary bleeding, secondary bleeding and post-operative pain). The operative time for group (A) was (17- 52) minutes, the mean time was (28.9) minutes, in compare with group (B) the operative time was (15 – 52) minutes and the mean time (24.5)

minutes. So, no difference in operative time regarding both group (P=0.4) table (1). History of nausea and vomiting reported in (5) cases (27.7%) in group (A), while (7) cases in group (B) (31.8%) gave history of nausea and vomiting. one case from group (A) had secondary bleeding and one case from group (B) had reactionary bleeding, (table 2). Post-operative pain follow up

showed that immediately after operation many cases from group (A) showed low score of pain but statistical analysis in compare with other group was not significant ( $P= 0.11$ ) (table 3). In evening, the reverse was true. Most

of the cases of group (B) showed low score of pain and it was significant ( $P= 0.006$ ), (table 3). In the next morning both groups had the same score (Low score) ( $P= 0.15$ ), (table 3).

**Table (1):- Operative time ( $P= 0.4$ )**

Group A (cases)	Time/minutes	Group B (cases)	Time/minutes
1	17	1	32
2	24	2	27
3	22	3	19
4	35	4	35
5	28	5	24
6	32	6	48
7	19	7	34
8	27	8	18
9	38	9	31
10	42	10	34
11	22	11	24
12	19	12	31
13	52	13	28
14	26	14	22
15	32	15	34
16	29	16	15
17	22	17	3752
18	34	18	33
		19	18
		20	32
		21	22
		22	

**Table (2):- History of nausea, vomiting, primary and secondary bleeding**

	Group A (cases)	%	Group B (cases)	%
Nausea vomiting	5	27.7	7	31.8
Primary bleeding	-	-	1	4.5
Secondary bleeding	1	5.5	-	-

**Table (3):- Postoperative pain relief (visual pain analogue scales)****Immediate (p= 0.11)****Evening (p= 0.006)****Next morning (p= 0.15)**

Group A (cases)	Immediate (score)	Evening (score)	Morning (score)	Group (B)	Immediate (score)	Evening (score)	Morning (score)
1	4	4	2	1	6	4	4
2	2	4	4	2	4	2	2
3	2	6	4	3	6	4	2
4	4	4	4	4	4	4	4
5	6	4	2	5	2	2	2
6	4	6	4	6	6	4	2
7	2	4	2	7	6	4	2
8	6	6	6	8	4	4	4
9	6	2	4	9	4	2	2
10	2	2	2	10	6	4	4
11	4	6	4	11	6	2	2
12	4	6	4	12	4	2	2
13	4	4	2	13	4	2	2
14	4	4	4	14	4	4	4
15	2	2	2	15	2	2	2
16	4	4	2	16	6	4	2
17	2	4	2	17	6	2	2
18	2	4	4	18	4	4	2
				19	6	4	4
				20	6	2	4
				21	4	4	2
				22	4	2	2

### Discussion

Post tonsillectomy pain has maximum intensity after operation, thus there's a need to achieve adequate pain relief. So, various strategies for management of post tonsillectomy pain relief have been proposed like infiltration of local anesthesia, non-steroidal anti-inflammatory drugs (NSAID), narcotics, oral analgesia and application of sucralfate as protective barrier. <sup>(4)</sup> Liu CM and Suca CY

showed that reduced post tonsillectomy pain leading to reduce secondary bleeding. <sup>(5)</sup> Violaris N and Juffin J. study demonstrated that double blind controlled study compared the effect of bupivacain locally and normal saline, the result was no significant differences between both in adult patients. <sup>(6)</sup> Negama A. and Robin P. said that there was no role for bupivacain in post

tonsillectomy pain relief after peritonsillar infiltration.<sup>(7)</sup> To pposite, Bhadoria P. *etals*, showed that peritonsillar bupivacain infiltration into tonsillar fossa result in immediate postoperative pain relief 4-6 hours in children.<sup>(8)</sup> Hussein A. *etals* stated that bupivacain infiltration 5cc of 0.5% reduced post tonsillectomy pain, if injected 5 minutes pre incisionally, in patients older than 9 years.<sup>(9)</sup> Moore's M. comparing bupivacain 0.25% and rectal diclofenac 0.25 mg/kg in minor operation in pediatric age group bupivacain provided more pain relief at first, but later the two are similar.<sup>(10)</sup> Somdas M. *etals* provided that peritonsillar infiltration of bupivacain was effective in tonsillectomy pain relief in children.<sup>(11)</sup> Moran A. detected that diclofenac 50mg/3 was effective in reducing the post tonsillectomy pain.<sup>(12)</sup> Hans D. and Ole R. showed that diclofenac suppositories was effective when given immediately in dose of 100 mg, in evening 50 mg when compared with placebo suppositories in adult.<sup>(13)</sup> Kotecha B. Showed that diclofenac suppositories was effective in post tonsillectomy pain relief in both children and adult.<sup>(14)</sup> But. Steen M. *etals* provided that (NSAID) increase the risk of post operative bleeding (prevent platelets aggregation). In this study, no significant difference in both groups regarding the operative time with no difference between the two groups in immediate postoperative pain reliefs. Meanwhile, significant difference to group (B) in evening time, with no difference between two groups in the next morning. No difference in postoperative nausea, vomiting, reactionary and secondary bleeding.

### Conclusion

In this study, bupivacain infiltration to the tonsillar bed showed low score of pain in immediate postoperative time,

but it was not significant, while intramuscular diclofenac showed low score of pain in most cases at evening, so it was significant.

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