

Rationale of Antibiotic Therapy after Surgical Removal of Asymptomatic Impacted Mandibular Last Molar

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ABSTRACT

Aim: To determine the need of antibiotic therapy in reducing post-operative complications during surgical removal of asymptomatic mandibular impacted 3rd molar,

Methods: This prospective study was carried out at Oral and Maxillofacial Surgery Department, Sandiman (Provincial) Civil Hospital Quetta from April 2013 to September 2013. The study consisted on 100 patients with impacted mandibular 3rd molar who were divided randomly in to two groups. Group A was given two gram Amoxicillin with clavulanic acid orally for 5 days. Group B was given no antibiotic. Post-operative complications like pain, infection, swelling, limited mouth opening and alveolar osteitis was compared between the two groups.

Results: There was no any significant difference in the complications rate between the two groups.

Conclusion: The study showed that antibiotic don't have significant role in minimizing post-operative complications after removal of asymptomatic impacted 3rd molar.

Keywords: Impacted 3rd molar, post-operative complications, antibiotic

INTRODUCTION

Surgical extraction of impacted mandibular 3rd molar is common oral surgical procedure performed by the oral surgeons. There is disagreement among the oral surgeons about its extraction but it is generally agreed that impacted 3rd molar should be extracted as soon as it is diagnosed.¹ Its removal can results in complications like pain, swelling, limited mouth opening and dry socket. These complications are commonly seen when patient with impacted 3rd molar have symptoms like pain, swelling, infection and patients with neglected oral hygiene. On the other hand these complications are rarely seen in healthy patient who maintain oral hygiene and is operated by using standard surgical procedure.

The purpose of study was to compare the postoperative complications during the surgical removal of asymptomatic impacted mandibular 3rd molar with the patient's prescribed antibiotic versus patients who received no antibiotics therapy.

PATIENTS AND METHODS

This prospective study was carried out in the Oral & Maxillofacial Surgery Department Sandiman (Provincial) Civil Hospital at Quetta from April 2013 to September 2013. A total number of 100 patients with asymptomatic impacted mandibular 3rd molars were

selected for surgical extraction. They were randomly divided in to two groups A and B (n=50 in each). Group A was given amoxicillin with clavulanic acid 1 gm. twice daily for 5 days, starting one day before surgery. Group B (control) was given no prophylaxis. Each group was given diclofenic potassium, for pain control, and chlorhexidine gluconate mouth wash, for maintenance of oral hygiene, two times daily for 5 days starting from the day of surgery. Unhealthy patients with systemic disease and symptomatic patients (pain, swell ling, infection and limited mouth opening) were excluded. Ethical approval was obtained and written informed consent was taken before surgery.

All patients were operated under local anaesthesia, by using 2% lidocane with adrenaline 1:1000000, in the same operation theatre by two oral surgeons. Before operation all patient were given chlorhexidine mouth wash for two minutes. After extraction wound was washed with saline and closed primarily by single 3/0 silk suture and gauze pack was placed for 30 min. The postoperative complications were checked clinically on 2nd, 5th and 7th day by the same oral surgeon who operated the patients and postoperative symptoms were scored according to the evaluation criteria. Suture was removed on 7th postoperative day.

The following detail were recorded on 2nd, 5th and 7th post-operative day; swelling, infection, alveolar osteitis, using two grade presence or absence, mouth opening/ inter incisal distance (mm), by using flexible stainless steel measuring tap, and pain was evaluated by using visual analogue scale.

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RESULTS

There were 60 male and 40 female patients (Table 1). Out of these, 60 patients having vertically impacted 3rd molar (60%), 35 patients having mesioangular (35%), and 15 patients having horizontal (15%) impacted molars. Mouth openings are shown in Table 2. Post-operative pain was recorded for seven days after surgery by using 10 cm horizontal visual analogue scale (VAS) where the one end were marked for no pain.^{2,3} Extraction was considered as painful and marked as 4cm or more. This score was variable during the week after extraction. Pain and other complications are shown in table 3. There was no significant difference among the groups.

Table 1: Frequency of genders and mean age

Gender	Prophylactic antibiotic		Control group	
	n.	%	n	%
Male	30	60.0	28	56.0
Female	20	40.0	22	44.0
Age (Mean±SD)	21±5		22±4	

Table 2: Maximum inter-incisal distance (mm)

Group	Before surgery	2 nd Postop day	5 th Postop day	7 th Postop day
Prophylactic antibiotic	43 (3)	34 (5)	43 (4)	43 (2)
Control group	43 (3)	30 (4)	40 (5)	41 (3)

Table 3: Frequency of complications in both groups

Complication	Group A	Group B
Pain (VAS) or more	3	4
Swelling	3	5
Alveolar osteitis	1	2
Wound infection	-	1

DISCUSSION

Surgical procedures in the oral cavity are said to be contaminated due to the oral environment⁴ and antibiotics are commonly prescribed to prevent post-operative complications. We decided to determine the roll of antibiotic in reducing the postoperative complications in a prospective study. In some studies the incidence of postoperative infection after 3rd molar surgery is (< 2%) very low to justify routine use of antibiotic. The blind use of antibiotic can result in adverse outcomes⁵. The risk with prophylactic antibiotic includes the development of resistance strain, adverse reaction, secondary infection, toxicity and increase health cost.¹ It is estimated that about 7% of patients using antibiotic have some kind of adverse reaction. The estimated rate of infection after removal of impacted 3rd molar is less than 2% so the effectiveness of antibiotics questionable.^{6,7}

The general concept is that the use of preoperative antibiotic reduces the chances of postoperative infection.^{8,9} In the present study, we used antibiotic preoperatively for group A, and no antibiotic was used for group B. The complications was compared between the two groups, there was no significant clinical difference in the rate of complications between the two groups regarding the variables evaluated¹⁰. Over result shows that routine use of antibiotics is unwarranted for removal of impacted 3rd molars in a healthy patient.

CONCLUSION

The use of Antibiotics during the removal of asymptomatic impacted 3rd molar has no measurable effect in reducing the complications in otherwise healthy patients. Oral surgeon should reconsider the current practice for routine use of antibiotics. Any benefit of antibiotic should be weight against possible emergence of resistance stern, fungal colonization, risk of adverse event and cost.

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