IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 19, Issue 5 Ser.8 (May. 2020), PP 28-31
www.iosrjournals.org

Profile of patients who underwent removal of wisdom teeth without antibiotics at MandyaInstitute of Medical Sciences:an observational study.

Dr Ashoka C A
Corresponding Author: Dr Ashoka C A

Abstract:*The study undertaken aimed to answer the following questions. Is antibiotic necessary in successful management of impacted wisdom teeth in healthy individuals? An observational study was undertaken in our institution so as to manage impacted wisdom mandibular teeth in healthy individuals. The study included patients which required both open and closed method. Around 1220 patients were included in the study who were managed without postoperative antibiotics, the results of the study showed that none of the patients landed up with any signs of infection. The results point out that surgeon role, technique aseptic measures also play role in the etiology of SSI and not just antibiotics. This study also underlines the fact that judicious use of antibiotic can play role in reducing incidence of antibiotic resistance*

Objective:*The objective was to establish that antibiotic prophylaxis is not essential in successful management of impacted teeth*

Date of Submission: 04-05-2020 Date of Acceptance: 18-05-2020

I. Introduction

Impacted wisdom teeth or third molars are most commonly conducted minor oral surgical procedure across the globe. Procedures classified as minor oral surgical procedures sometimes requires design of a flap incisions and suturing. Wisdom teeth procedures vary between simple to extremely complicated procedures based on difficulty of impaction of wisdom teeth. The most practical way to assess the complicity is based on Winter'sclassification of wisdom teeth.

More severe the impaction longer the duration which in turn leads to a moreintensivepost-operative sequel and complications

Owing to the nature and environment of the surgery infection and inflammation seem to be the most common complications following removal of third molars. Postoperative infection has always been a point of concern following any surgical procedure. Antibiotic prophylaxis is a known and well-practicedmeasure to control SSIs.

In his comprehensive investigation into nature of pericoronitis and complication following the removal of third molars Kay[12] in 1960 proved the need for antibiotic prophylaxis for third molar surgery. Although a number of subsequent clinical trials question the effectiveness of antibiotic prophylaxis in third molar surgeries leading to conflicting situations with both advocates and opponents of antibiotic prophylaxis providing their share of evidence.

There is a necessity for astudy ofantibiotics role in SSIs following third molar surgery in healthyindividuals who do not show any preoperative evidence of purulent discharge or pericoronitis.Therefore, an observational study was conducted to evaluate the incidence of infection following third molar surgery in healthy individuals at our centre without antibiotics.

Mandya institute of medical science is the tertiary level medical institution which caters to the district of Mandya which is located in state of Karnataka, India. It has a population of around 1.5 lakhs. It is also designated trauma care centre for the district. The study contained only the population of people of Mandya

This was an observational study of patients who were treated for mandibular impacted wisdomteeth without antibiotics

Patients and methods:

Patients included in the study was healthy males and females who presented to the Department of Dentistry, Mandyainstitute Of Medical Scienceswithcomplaints related to mandibular wisdom teeth from 2011 till date.

Inclusion criteria

- Patients who presented chief complaint involving wisdom teeth and peri coronal tissues of the mandible
- Patient in the age group of 21 to 40 years
- Patient without any signs of infection
- Patient without trismus
- Patients who were not placed under antibiotic within the past 5 days of the procedure

Exclusion criteria

- Patient with a documented history of immunocompromise.
- Patients with trismus
- Patients who were placed under antibiotics within the past 5 days before the intervention
- Patients in which third molars are associated with either odontogenic or non-odontogenic cyst and tumor
- Patients with a history of radiotherapy to head and neck region
- Mentally challenged patients
- Patients below 20 years

Infection criteria

During the follow up, patient surgical site was evaluated for infection using the following criteria

- Purulent discharge from the surgical site
- Increased facial swelling beyond the 5^{th} -7^{th}post operative day
- Fistula/sinus at the fractured site with or without discharge
- Fever associated with local evidence of infection

Data

Total number of teeth removed: 1251
Teeth which required open method: 812
Patient who required only flap elevation: 239
Teeth which required ostectomy were: 753
Teeth which required odentectomy were: 59
Teeth which require both ostectomy and odontectomy : 425

Surgical technique:

Followinginferior alveolar N block,conventional wards incision with or without releasing incisions was made. Anon-traumatic full thickness flap reflected to expose the third molar and bone.
Ostectomy or ostectomy/odontectomy done with copious irrigation with normal saline followed by the tooth removal
Following removal debridement and thorough irrigation to remove any of bone debris or tooth debris is done. Sharp bony margins/bony spicule smoothened.
Closure with Mersilk 3-0 done
Standard aseptic and sterilisation principles were followed.

II. Results

None of the patients were found to be suffering from infection
Only 172 patients ended up having alveolar osteitis which was managed by zinc oxide eugenol pack and analgesics

III. Discussion

In addition to achievement of the expected post-operative result the prevention of complications is the most important co factor for surgical success. SSI (surgical site infection) is consideredone of the severest and significant complication during the post-operative care.

With a focus on antibiotic prophylaxis regimen, the head and neck attract attention becausein spite of the bacterial colonisation being omnipotent the number of severe post-operative infection is considerably low in a healthy patient. The latter is not surprising considering the presence of superior immunological structures and vascularity of tissues in the region. Whereas postoperative SSI is rare in patients undergoing clean head and neck operations, the surgeons often initiate proper wound healing by prophylactic antibiotics in clean and contaminated cases.

The oral cavity surgical procedures are classified as clean and contaminated surgical procedures, whereas many authors support antibiotic prophylaxis even for otherwise healthy patients, theregular questioning

of benefit of the use of antibiotics is important issue in view of development of super bugs and increase in the incidence of hospital induced infection along with known documented ill-effects of antibiotics. Due to the anxiety related to the incidence of complicationsmany surgeons tend to prescribe antibiotics, proper review of studies and customised evaluation of each procedure keeping in mind the health status of individual and procedure technique involved has to be analysed before prescribing antibiotics

Sekha[r13] et al conducted a study involving 3 groups with a total sample of 151 patients who required removal impacted third molars. Group 1 received 1g oral metronidazole one hour preoperatively, second group received 400mg metronidazole for 5 days and third group received a placebo. The results of his study reported no significant differences in the outcome between the three groups and concluded that antimicrobial therapy did not seem to reduce morbidity after removal of third molars.

Adel Al Afsour[3] in his paper conducted an analysis of 110 consecutive procedures of postoperative infection after surgical removal of impacted mandibular third molars. Results of which showed that impacted mandibular third molars can be removed without the use of prophylactic of postoperative infectionwithout a risk of post-operative infection. The 5.5% in his studywas very close to earlierreports. He used clinical observation to assess the post-operative infection although a measurable technique such as acute phase protein levels had been reported. Theresults of his study confirm it was possible to minimise the indiscriminative use of antibiotics and consequence of potential hypersensitive reactions and most dreaded effect of resistant and more complex oral microbial flora to commonly used antibiotics.

Poerschl[14] et al designed a prospective studyinvolving three groups of patients requiring removal of third molars. The patients of the first group received combination of amoxicillin and clavulanic acid for 5 days postoperatively whereas the second group received clindamycin,the third group the patients did not receive any medication. The results of study concluded that specific oral prophylactic antibiotics after removal of third molars did not in any significant way contribute to better wound healing, reduced pain or increase mouth opening and other inflammatory problems and therefore was not recommended.

Macgregor and Sands[15] et al in two of their separate studies have concluded that it was inappropriate to recommend the routine use of antibiotics for third molar surgery exceptfor difficult cases. Goldberg[7] et al in his series of 500 patient reported that antibiotic prophylaxis was not useful in preventing post-operative infections.

Curran et al also concluded antibiotic prophylaxis was not useful for preventing of post-operative infections.

In the opinion of by MVMartin[11]et al after their study concluded that they there are plethora of studies which advocate or disapprove the use of antibiotics after 3rd molar surgery. Most of the studies have focussed on potential relationship of antibiotics and post-operativecomplications. And avoiding issues as use of surgical technique in minimising the trauma, antisepticmeasures andtechnique. By evaluating the literature, he was of the opinion that antibiotics were useful only in certain instances and little or no benefit on others. According to their conclusion only medically compromised patients are a certain group which would benefit from antibiotic prophylaxis. They appeared to be a very insignificant gain by antibiotic prophylaxis alone. They also concluded that there is no justification for the routine use of prophylactic antimicrobials in 3rd molar surgeries and therefore they don't recommend it.

Balut[9]et al measured the levels of CRP and alpha 1 antitrypsin levels pre and postoperatively who receive either antibiotics or placebo. They concluded that antibiotic prophylaxis is always not indicated in removal third molar.

The results of meta-analysis of randomised controlled clinical trials by Yan Feng Ren[1] et al in 2007 indicated that systemic antibiotics were effective in reducing the frequency dry socket and wound infections after surgical removal of third molars as per their study on average patients receiving systemic antibiotics were 2.2 times less likely to develop alveolar-osteitis and 1.8 times less likely to develop wound infection after third molar surgery. He also found out that dosing strategies were found to be an important predictor of the effectiveness of antibiotics with dosing started before surgery being more effective than dosing starting after the procedure. Antibiotics given after the procedure were not effective in reducing frequency of either alveolar osteitis or wound infection. They found out that most effective dosing strategy was the first dose to be starting 30-90 mins before the procedure was started and continuing for 3 to 5 days thereafter. And also that preoperative single dose was as effective as multiday dosing strategy. Their qualitative review of randomised controlled trials arrived at gathering evidence and providing guidance for antibiotic prophylaxis in third molar surgery, most of trials reviewed by him had used either a broad-spectrum antibiotic and narrow spectrum antibiotic that is effective in targeting only the anaerobic bacteria. The findings confirmed the effectiveness of both wide spectrum and narrow spectrum in reducing frequency of alveolar osteitis and anti-anaerobic agents were less effective in prevention of wound infection which would indicate that anaerobic bacteria played a lesser role in soft tissue infections

Capuzz[i10]et al compare post-operative amoxicillin for four days with no antibiotic in146 patients and found no statistical difference when post-operative swelling and pain were evaluated.

Systemic antibiotic therapy is the most common form of antibiotic prophylaxis in clinical practice. Antibiotic administration comes with its share of risks which include anaphylaxis, developmentsuperbugs, systemic toxic reactions like nausea,nephrotoxicity, diarrhoea and interaction with other drugs.Therefore,benefits and risks should be consider closely before prescribing.

The purpose of this study was to evaluate the effectiveness of antibiotics in healthy individuals requiring open surgical management of wisdom teeth. The author hypothesis that in healthy individuals sustaining impacted wisdom teeth, antibiotics had no significant role in preventing infections alone as the body immunity and vascularity also played a vital role in healing of operative fractures. The use of antibiotics does not increase or decrease the incidence of infection there are other factors which also play a role like patient immune condition, patient habits and compliance and most important the surgeon role, technique aseptic measures also play role in the etiology of SSI. Since the oral cavity is a clean contaminated site, the oral microbial flora is already recognized by the host immunity and at the same time, does not allow any opportunistic infections to occur due to inherent competence among them.

Just as surgeons progressed from peri –operative antibiotic prophylaxis to documented advantages of preoperative single dose of antibiotics, this study graduated into the next obvious dimension whether not using antibiotics in healthy individuals had similar results. This study showed that there was not much difference in the incidence of infection between the two groups. This study at the most can be considered as a pilot study at the most and also strongly recommends a standardizedcustomized protocol in the management of mandibular fractures

Moving forward, this study proposes to limit the undue exposure of patients to antibiotics so as to control the development of bacterial resistance and development of superbug as well as reducing the financial burden on the relevant players and also give due credit to the role of host immune system in.

References

[1]. Yen fang ren et al "Effectiveness odf antibiotic prophylaxis in third molar surgery:ameta analysis of randomised controlled clinical trials:JOMFS 2007;03:1909-1921

[2]. Kilian kruetzer et al "current evidence regarding prophylactic antibiotics in head and neck and maxillofacial surgery"biomed research international ;2014;1-7

[3]. Adel A Ashour et al "post operative infection after removal of impacted third molars:analysis of consecutive 110 procedures"med principles and practice 2009;18:48-52

[4]. Jose Ignesiasalmero et al "antibiotic prophylaxis in oral and maxillofacial surgery med oral pathol oral buccal 2006 ;11:292-296

[5]. Elitsa G Deliverska,milenapetkova "complications after extraction of third molars-literature review journal of IMAB 2016 vol 22 issue 3:1202-1211

[6]. MiloroM,GhaliGE,Larsen PE Waite PD et al .peterson's principles of oral and maxillofacial surgery.inc Hamilton,second edition,2004

[7]. Goldberg MH,nemarich AN Marco WP complications after third molar surgery: a statistical analysis of 500 consecutive procedures in private practice J am Dent assoc 1985;111:277-279

[8]. Mitchell DA a controlled clinical trial of metronidazole for chemoprophylaxis in third molar surgeries.Br Dent J 1986;160:284

[9]. Balut E Balut S EticanEIkoseogluO.the value of routibe antibiotics prophylaxis in third molar surgery acute phase protein levelas indicators of onfection.j oral Sci 2001;23:117-122

[10]. Capuzzi P Montebugnoli L Vaccaro MA ,Extraction of impacted third molarsa longitudinal prospective study.OralSurg 1994;77:341poeschl PW eckek D PoeschlE.Postiperative prophylactic antibiotic treatment in third molar surgery- a necessity?J Oral and max illofacSurg 2004;62:3-8

[11]. MV Martin A N kanatas,Phardy,antibiotic prophylaxis and third molar surgery,brit Dent J;april 2005:327-330

[12]. Kay LW. Investigation into the nature of pericoronitis, II. Br J Oral Surg. 1966;4:52

[13]. Sekhar C H<Narayanan V,Baig M F.Role of antimicrobials in third molar surgery:prospective double blind,randomized placebo-controlled clinical study Br J Oral Maxfac Surg 2001;39:1340137

[14]. Poersch P W,EckelD,Poersch E.Post operative prophylactic treatment in third molar surgery-a necessity?J Oral and maxilloafac surg2004;62:3-8

[15]. Macgregor A J .antiAntiprophylactic antibiotics J Oral Surg 1976 ;34:1063

Dr Ashoka C A. "Profile of patients who underwent removal of wisdom teeth without antibiotics at mandya institute of medical sciences: an observational study."*IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 19(5), 2020, pp. 28-31.