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Comparison of two different Extraction Techniques for Removal of maxillary 3rd Molar: Randomized prospective split mouth study

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Abstract

Introduction: Extractions are routine procedures in dental surgery. The conventional method of extracting erupted maxillary 3rd molars is by using universal #210s forceps, or using an elevator alone. Here ,I am describing a technique in which the #217s lower cowhorn forceps is used for the luxation of maxillary third molar teeth. The beaks of the #217s lower cowhorn act as wedges down the periodontal ligament, tears the fibers and thereby luxates the tooth out of the socket.

Aims and Objectives

Aim: To evaluate the Effectiveness of new technique compared to conventional technique for upper third molar extractions.

Objectives: To compare time taken for removal of maxillary 3rd molar between two techniques. To evaluate complications like trauma to surrounding tissues, root fracture, tuberosity fracture in two different techniques. To compare "bone healing at extraction site."

Materials and methods

Study Design: 36 patients from the Department of the oral and maxillofacial surgery between the age group of 20-80 years irrespective of gender who have come for extractions.

Source of Data: The data for this study was obtained from the patients who visited the Department of Oral and Maxillofacial Surgery, Narsinhbhai Patel Dental College and Hospital, Visnagar

Sample description: 36 patients from the Department of the Oral and Maxillofacial Surgery, NPDCH from the age group of 20-80 years irrespective of gender.

Time scale of study: 1 year

Type of study: Randomized prospective split mouth study

Results: Analysis of 36 patients based on parameters showed that the novel Joedds technique had minimal

trauma to surrounding tissues, less tuberosity and root fractures and the time taken for extraction was less than 2 min while compared to other group of patients.

Conclusion: This novel technique has proved to be better than conventional third molar extraction technique, with minimal complications. If Proper selection of cases and right technique are used.

Keywords: Maxillary third molar, Extraction, Joedds technique

Introduction

Extractions are routine procedures in dental surgery. Traditional extraction techniques use a combination of severing the periodontal attachment, luxation with an elevator, and removal with forceps. If the elevator fails to cause noticeable separation of the tooth from the socket, the forceps accomplish the work through intermittent apical and lateral forces. The development of many surgical techniques and newer designs of instruments have enabled the practitioners to carry out extractions with lesser complications. But even now extraction of third molars can be an unpleasant procedure for patients and dentists, due to the wide anatomic variance of the teeth and poor access and visibility, than for other groups of teeth.1

Incorrectly performed surgery to remove a tooth with too much force can lead to local complications such as soft tissue injury, damage to a tooth removed or adjacent with the possibility of its interchiping, bone fracture, oral-sinus connection or even dislocation of the lower jaw. Currently, methods are being developed to keep surrounding periodontal tissues intact, which facilitates subsequent prosthetic rehabilitation. Surgical instruments used in atraumatic tooth extraction techniques include: Physics Forceps ticks, periotomy, luxators and Benex System. These tools avoid the need for surgery with mucous-periostian lobe preparation and contribute to the rarer occurrence of post-operative pain.6

There have been several exciting technological advances in extraction techniques and outpatient oral surgery within the last decade. A variety of techniques are revolutionizing the fields of oral and maxillofacial surgery and dentistry. A powered periotome has been developed to atraumatically extract teeth. Piezosurgery is also being increasingly used for outpatient oral surgery techniques. Lasers are also being used for a wide variety of outpatient procedures such as removal of impacted teeth and excision of oral lesions. Orthodontic techniques are also being used by some practitioners to help facilitate extraction of impacted teeth near the inferior alveolar nerve.3

Karl Schumacher (Southampton, PA) has introduced a new surgical protocol apical instrumentation that allows for the preservation of the hard and soft tissues by focusing on occlusal movement of the tooth during extraction. Technique allows for the removal of most broken-down teeth using a closed (non-ap) procedure. This technique also eliminates the retentive factors hold a tooth in place in a specific, logical sequence. These factors include the periodontal ligament (PDL), root anatomy, and multi-rooted teeth. With scope of this technique, Schumacher Periotomes are instruments designed to cut the PDL attachment of the root, effectively reducing the actual attachment of bone to the root. Schumacher Proximators TM are then used to further eliminate the PDL and create slight lateral compression of the bone in the distal areas. Finally, Apical Retention Forceps, designed to access the limited contact area created by the other instruments, are then used for final delivery of the tooth.[4]

The Physics forceps is a device that uses a first-class lever mechanism for atraumatic extraction of a tooth from its

socket .There are two handles, one of which is connected to a bumper that functions as the fulcrum during extraction. It is applied to the buccolabial aspect, usually at the mucogingival junction. The other beak is applied to the palatolingual aspect of the tooth into the gingival sulcus, at a lower level than the bumper. This “beak and bumper” design aids extraction without the use of excessive force. The Physics forceps implements a first-class lever, creep, and the type of force that provides a mechanical advantage, which makes it more efficient.4 Hariharan et al. did split mouth study to compare physics forceps and universal extraction forceps.5

In 2018 Santhoshkumar introduced a new technique called “The Santhosh Technique” in which , the cow-horn forceps are first placed between the second and third molar within the embrasure and below the cementoenamel junction. Following this placement, an apical pressure is applied between the second and third molar, and now, the Cowhorn forceps design acts such as two-elevators working in unison both buccally and lingually. The arc of rotation also favors the superior or distal movement of the teeth and the displacement of distoangular tooth from the socket. Sometimes a slight mesiodistal/linguobuccal movement of the forceps is given to complete the procedure. The displaced distoangular tooth can then be easily removed with a mandibular cowhorn or a mandibular crown forceps. This technique can rarely cause distal root fracture, but this is easily retrievable than the mesial root fracture which occurs commonly in distoangular impaction.7

Extraction of the tooth requires that the surrounding alveolar bone be expanded to allow an unimpeded pathway for tooth removal. Upper third molar lies just in front and within the maxillary tuberosity. The fracture of a large portion of bone in the maxillary tubersosity area is a situation of special concern, which can result in torrential hemorrhage due to close proximity of significant vessels to the area. Maxillary tuberosity is especially important for the stability of upper denture and may cause oroantral communication if fractured. [2]

The conventional method of extracting erupted maxillary 3rd molars is by using universal #210s forceps, or using an elevator alone. This method involves wedge, lever or wheel and axle principles of the elevators and the forces in different directions exerted by the forceps, such as the apical, buccal, palatal and the coronal forces. Here we describe a technique in which the #217 lower cowhorn forceps is used for luxation of maxillary third molar. The beaks of the #217 lower cowhorn act as wedges down the periodontal ligament, tears the fibres and thereby luxates the tooth out of the socket.[1]

Materials and Methods

Study Design: 36 patients from the Department of the oral and maxillofacial surgery between the age group of 20-80 years irrespective of gender who have come for extractions.

Source of Data: The data for this study was obtained from the patients who visited the Department of Oral and Maxillofacial Surgery, Narsinhbhai Patel Dental School and Hospital, Visnagar.

Sample description: 36 patients from the Department of the Oral and Maxillofacial Surgery NPDCH from the age group of 20-80 years irrespective of gender.

Time scale of study: 1 year

Type of study: Randomized split mouth prospective study

Selection Criteria

1. Patients having fully erupted bilateral maxillary 3rd molars
2. Patients willing to be extraction of 3rd maxillary molars

3. Patients having age ranging from 20-80 years having pain in maxillary 3rd molars
4. Patients possessing both 2nd and 3rd maxillary molars
5. Patient must not have limited mouth opening.

Exclusion Criteria

1. Patients having impacted maxillary third molars.

2. Medically compromised patients

3. Absence of 2nd maxillary molars mesial to 3rd molars.

4. Patients having mobility in maxillary 3rd molars.

5. Systemic diseases.

6. Unwillingness of participation in study and follow up.

7. Grossly carious maxillary 3rd molar.

Material/Equipment For The Study:

1. Lower cowhorn forceps (# 217)

2. Maxillary third molar forceps (# 210)

3. Mouth mirror

4. Dispo Van 2 ml disposable syringe with 0.60x25mm 23x1 needle size

5. Lignocaine 2% A from Warren containing Lignocaine hydrochloride IP 24.64mg, Adrenaline (adrenaline bitartrate) IP 0.0125mg, Methyl paraben IP 1mg as preservative,water for injection.

6. Dispo Van 10 ml disposable syringe with 0.60x25mm 23x1 needle size

7. Swab holder

8. Betadine

9. Probe

10. Sterile drape

11. Sterile Gauze

12. Periosteal elevator

13. Curette

14. Mirror to take intraoral photographs

Methodology

Each patient was subjected to extraction of maxillary 3rd molar using conventional extraction forceps at one side and using newer technique at contralateral side randomly. All the extractions are performed by single surgeon.

Pre-surgical procedures

1. Clinical case history record and clinical photographs.

2. OPG was taken pre-operatively.

3. Examination and assessment of the maxillary 2nd and 3rd molars

Intraoperative

1. The mucoperiosteum strip is the same as that of the conventional technique. The lower cowhorn forceps.(which should be held in palm down grasp)is held in palm up grasp.

2. The wedge principle works when the sharp ends of the beak engages in the interproximal area between the 2nd and 3rd molars.

3. With the thumb of the opposite hand, the 2nd molar is supported on the occlusal aspect of it (to prevent its accidental occlusal displacement).

4. The handle of the forceps is then compressed very gently wedging the interdental area and the force is held for a few seconds.

5. The tooth is pushed occlusally and distally thus facilitating easy removal of the tooth with the upper third molar forceps.

6. For extraction of a right maxillary third molar the right handed operator adopts a 10 O’ clock position.

7. For extraction of left maxillary third molar the right handed operator adopts an 8 O’ clock position.

Post-operative care

The patient is instructed to follow the prescribed medication protocol post-surgically. Patient is recalled after 1st, 3rd week postoperatively for clinical and radiographic examination to evaluate the soft tissue and crestal bone level.

Fig. 1:Mandibularlower cowhorn forcep(#217)

Fig.2: Preoperative OPG

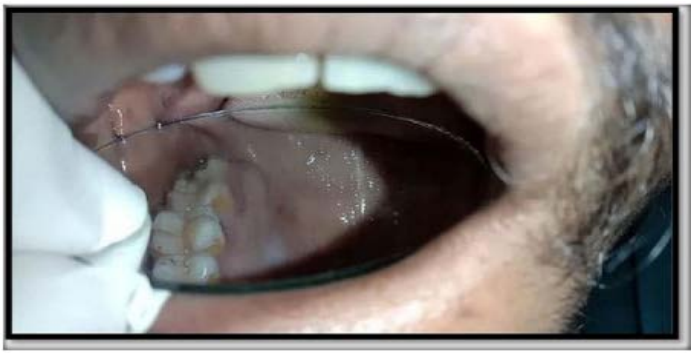


Fig. 3:Preoperativeclinicalphoto18

Fig.4:Preoperativeclinical28

Fig.5: Use of lower cowhorn forcep between 2nd and 3rd molar to luxate18

Fig.6: Use of Maxillary 3rd molar forcep irt 18

Fig. 7: Use of Maxillary 3rd molar forcep for extraxtion irt 28

Figure 8: Immediate post-operative socket 1

Figure 9:Immediate postop 28

Figure10:Immediate post-operative OPG

Figure11:7days post op clinical photo irt 28

Figure12: 21days post-operative clinical photo irt 18

Figure 13: 21 day's post-operative clinical photo irt 28

Figure 14 : 21 days post operative clinical photo irt 18

Results

The present prospective randomized, clinical and radiological comparative study was carried out in Department of Oral & Maxillofacial Surgery, Narsinhbhai Patel Dental College and Hospital, Visnagar, Gujarat. Total 36 patients were included in study who met our inclusion criteria. On the both sides upper 3rd molar were removed using two different techniques as described in methodology. Results were evaluated based on statistical

analysis of clinical and radiological parameters initial and final data.

Table 1: Distribution of study subjects based on gender

Sr no	Gender	N	%
1	Male	27	75
2	Femle	9	25
3	Total	36	100

Graph1:Distribution of study subjects based on gender

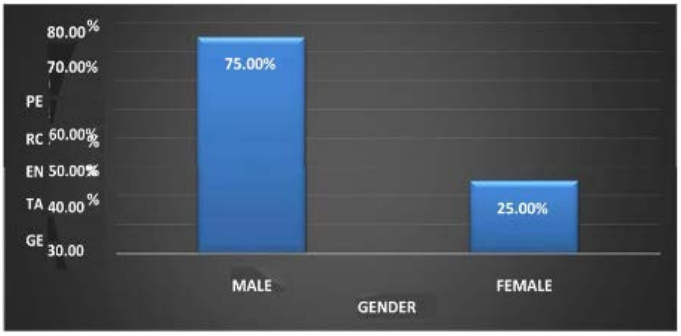


Table 1 and Graph 1 shows distribution of study subjects based on gender. The above data showed that, out of 36 study subjects, 27 (75%) were Male and 9 (25%) were Females.

Table 2: Distribution of study subjects based on groups and time taken for extraction.

Group	Time	p valu
Control	4 min 27 s ± 40.52 s	≤ 0.05
Experimental	2 min ± 29.09 s	

Level of significance ≤0.05,* Significant Result, **Non-Significant Result

Graph 2: Distribution of study subjects based on groups and time taken for extraction

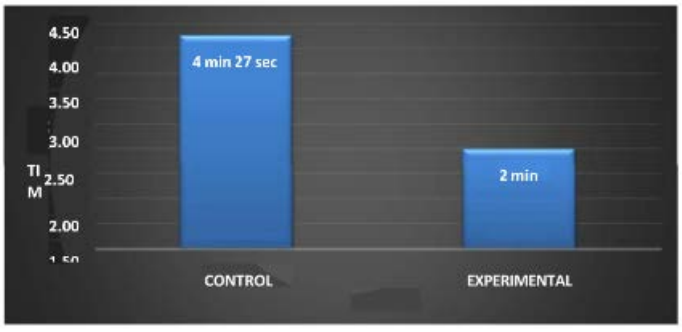


Table 2 and Graph 2 show distribution of study subjects based on group and time taken for extraction. The above data showed that, the time taken for extraction among control group was 4 min 27 s ± 40.52 s and time taken for extraction among experimental group was 2 min ± 29.09 s. statistically, significant difference was observed among both groups in relation to time taken for extraction. (p value ≤ 0.05)

Table 3: Distribution of study subjects based on groups and trauma to surrounding tissues.

Group	Trauma		Total N (%)	p value
	Yes N (%)	No N (%)		
Control	13 (36.11%)	23 (63.88%)	36 (100%)	≤ 0.05*
Experimental	3 (8.33%)	33 (91.67%)	36 (100%)	
Total	16 (22.22%)	56 (77.78%)	72 (100%)	

Graph 3: Distribution of study subjects based on groups and trauma to surrounding tissues.

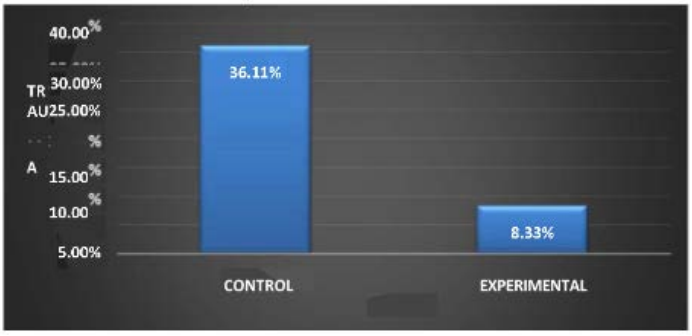


Table 3 and Graph 3 shows distribution of study subjects based on group and trauma to surrounding tissues. The above data showed that, out of 36 study subjects among control group, 13 (36.11%) had trauma on surrounding tissues. Out of 36 study subjects among experimental group, 3 (8.33%) had trauma on surrounding tissues. Statistically, significant difference was observed among both group in relation to trauma to surrounding tissues. (p value ≤ 0.05)

Table 4: Distribution of study subjects based on groups and tuberosity fracture.

Group	Tuberosity fracture		Total N (%)	p value
	Yes N (%)	No N (%)		
Control	8 (22.22%)	28 (77.78%)	36 (100%)	> 0.05**
Experimental	3 (8.33%)	33 (91.67%)	36 (100%)	
Total	11 (15.28%)	61 (84.72%)	72 (100%)	

Graph 4: Distribution of study subjects based on groups and tuberosity fracture.

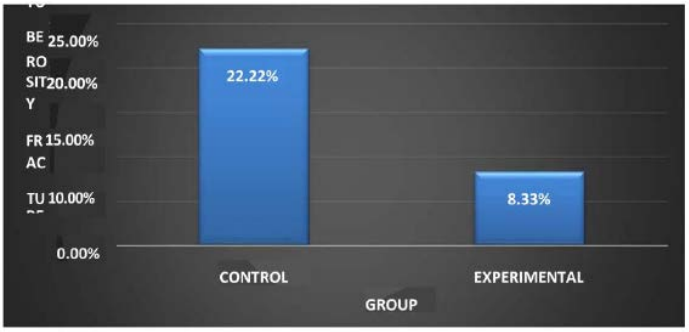


Table 4 and Graph 4 shows distribution of study subjects based on group and tuberosity fracture. The above data showed that, out of 36 study subjects among control group, 8 (22.22%) had tuberosity fracture. Out of 36 study subjects among experimental group, 3 (8.33%) had tuberosity fracture. Statistically, no significant difference was observed among both group in relation to tuberosity fracture. (p value > 0.05)

Table 5: Distribution of study subjects based on groups and root fracture.

Group	Tuberosity fracture		Total N (%)	p value
	Yes N (%)	No N (%)		
Control	6 (16.67%)	30 (83.33%)	36 (100%)	> 0.05**
Experimental	3 (8.33%)	33 (91.67%)	36 (100%)	
Total	9 (21.43%)	63 (87.5%)	72 (100%)	

Graph 5: Distribution of study subjects based on groups and root fracture.

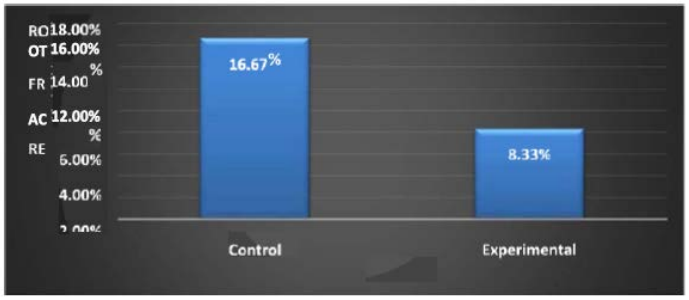


Table 5 and Graph 5 shows distribution of study subjects based on group and root fracture. The above data showed that, out of 36 study subjects among control group, 6 (16.67%) had root fracture. Out of 36 study subjects among experimental group, 3 (8.33%) had root fracture. Statistically, no significant difference was observed among both group in relation to root fracture. (p value > 0.05).

Table 6: Distribution of study subjects based on groups and follow up after 7 days.

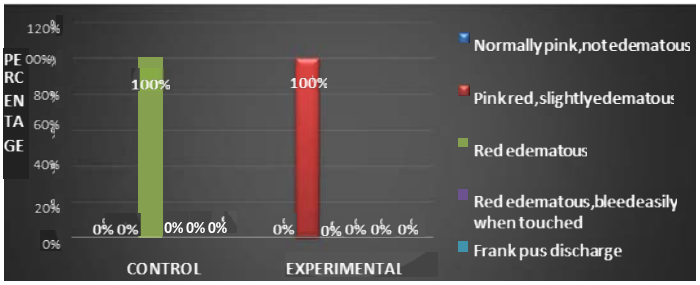
Group	Follow up 7 days						Total N (%)	p value
	Normally pink, Not edementous N (%)	Pink, red, slightly edementous N (%)	Red edementous N (%)	Red edematous,bleed easily when touched N (%)	Frank pus discharge N (%)	Dry socket N (%)		
Control	0 (0%)	0 (0%)	36 (100 %)	0 (0%)	0 (0%)	0 (0%)	36 (100 %)	≤ 0.05*
Experimental	0 (0%)	36 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	36 (100 %)	
Total	0 (0%)	36 (50%)	36 (50%)	0 (0%)	0 (0%)	0 (0%)	72 (100 %)	

showed that, out of 36 study subjects among control group, 36 (100%) had red, edematous gingiva after 7 days follow up. Out of 36 study subjects among experimental group, 36 (100%) had pink, red, slightly edematous gingiva after 7 days follow up. Statistically, significant difference was observed among both group in relation to follow up after 7 days. (p value ≤ 0.05)

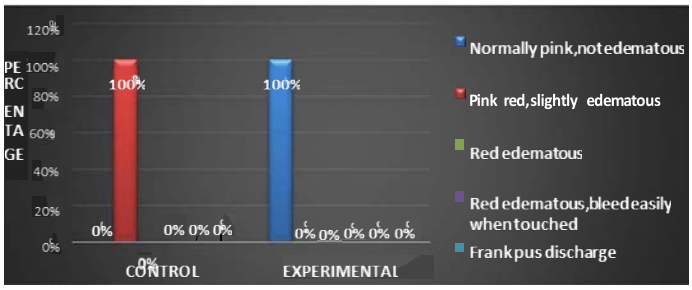
Table 7: Distribution of study subjects based on groups and follow up after 21 days

Group	Follow up 21 days						Total N (%)	p value
	Normally pink, Not edementous N (%)	Pink, red, slightly edementous N (%)	Red edementous N (%)	Red edematous,bleed easily when touched N (%)	Frank pus discharge N (%)	Dry socket N (%)		
Control	0 (0%)	36 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	36 (100 %)	≤ 0.05*
Experimental	36 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	36 (100 %)	
Total	36 (50%)	36 (50%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	72 (100 %)	

Graph 6: Distribution of study subjects based on groups and follow up after 7 days.



Graph 7: Distribution of study subjects based on groups and follow up after 21 days.



Discussion

During the extraction of a tooth, the dento alveolar bone surrounding the socket expands and the periodontal ligament is severed. While these physical changes undoubtedly occur, biochemical changes also occur that are arguably more important. When the periodontal ligament is traumatized with forceps or elevators, hyaluronidase is released. This enzyme catalyzes the hydrolysis of hyaluronic acid, which comprises a substantial portion of the extracellular matrix of all human tissue, including the periodontal ligament. Once the chemical breakdown of the periodontal ligament by hyaluronidase is sufficient, the tooth is released from its attachment to the alveolus and can be easily removed. The more hyaluronidase released per unit time, the more efficient the release of the tooth, and the less trauma there is to the alveolar bone. This explains why the Physics Forceps (Golden-Misch), with its steady, unrelenting pressure on the periodontal ligament, quantitatively creates a greater release of hyaluronidase in a shorter period of time than traditional forceps or elevator extractions, because the trauma from those techniques is intermittent. Similar results were obtained in various studies.

Risto Lehtinen (in 1979)[8] did a study to investigate with the strain gauge method the rocking moments needed during the extraction of upper jaw teeth. The longest extraction times were used during the extraction of molars and canines. The extraction times for the canines and molars were significantly higher in the upper jaw than in the lower jaw.

Harry Dym et al.(in 2011)[14] summarized in their review article that a variety of new instruments and techniques are enabling surgeons to provide patients services in very less time with higher accuracy. The powered periotome functions by aiding the surgeon in atraumatically extracting teeth, which allows for either immediate or delayed implant placement into a preserved socket. Piezosurgery is also being used as many surgeons are taking advantage of its precise and effortless nature. This type of surgery provides the patient with safe and accurate procedure because soft tissue remains unharmed.

Joseph Edward, Mubarak A. Aziz et al.(in 2015)[1] conducted a randomized control trial study. In 50 patients time taken for extraction was less than 2 min in Joedds technique while compared to the other group of 50 patients (using conventional technique).

In our split mouth study in 36 patients, time taken for extraction of maxillary 3rd molar with conventional technique was 4 minutes 27 seconds and time taken for extraction using Joedds technique (use of lower cowhorn forcep) for extraction of upper 3rd molar was 2 minutes only. So, new technique was less time consuming.

Oluseye SB (1993)[38] in his retrospective study & Heasman PA, Jacobs DJ (1984)[39] plus Wagaiyu EG, Kaimenyi JT (1989)[40] in their articles suggested that complications of the conventional method involves the maxillary tuberosity fracture, luxation of the adjacent tooth when used as fulcrum, post-operative complications like alveolitis sicca, infection, radix in antro highmori etc.

Thirumurugan K, Munzanoor RRB, Prasad Sankar K (2013)[2] and Susarla SM, Blaeser B, Magalnick D in their study in (2003)[45] reported that in maxilla, fracture of maxillary tuberosity can occur especially in extraction of upper third molars.

In our study we got similar results for conventional technique (Tuberosity fracture was 22.22%) ,but Joedds (new)technique had low tuberosity fracture (Tuberosity fracture was 8.33%). All the maxillary tuberosity fractures encountered in the present study were mild. More number of tuberosity fractures and root fractures were reported in the current study because even <3 mm of alveolar bone fractured or removed along with the maxillary third molar roots were included in the category of tuberosity fractures and tooth with all root forms even if it was a severely dilacerated root were extracted in this study.

Joseph Edward, Mubarak A. Aziz et al.(in 2015)[1] conducted a randomized control trial study in 100 patients. Root fracture was observed in 2 patients & 5 patients in Joedds technique and conventional technique respectively.

Serhat Yalcin et al.(in 2009)[12] did a study.Nine patients (7 women and 2 men) aged 24 to 60 years having root fractures and dental caries were included in this study. Inclusion criteria for the study were presence of at least 4 mm of bone beyond the root apex, the absence of acute signs of infection or inflammation in the treatment area, and the absence of systemic pathologies that would contraindicate bone healing around implants. Extraction was done after thinning the root walls by the help of the implant drills. After extraction, implant sites were prepared and implants were inserted. In results it was found that healing progressed uneventfully in all 9 cases. The use of implant drills to thin the root walls provided atraumatic tooth extraction protecting the thin buccal bone. The new extraction technique was found to be effective in immediate implant cases in order not to damage the thin plate of buccal bone.

In our split mouth study in 36 patients, root fracture in extraction of maxillary 3rd molar with conventional technique was 16.67% and it was 8.33% when maxillary 3rd molar extraction was performed using Joedds technique (use of lower cowhorn forcep).

Sanchit Jain et al.(in 2017)30 concluded in their review article that the Atraumatic Extraction Techniques (AET) are comprehensive methods using various techniques based on different principles of physics with an aim to remove tooth/tooth structure inducing minimal Trauma to the surrounding tissue, thereby permitting the

extraction socket to accept immediate implants and accelerate rehabilitation of the lost structures. Shorter waiting period for socket healing leads to fewer surgical sessions and reduced time for prosthesis delivery, thus making it cost-effective with preservation of bone and soft tissue.

Santhoshkumar MP et al. (2015)[7] (In his study about using lower cowhorn forceps in between mandibular 2nd and 3rd molar tooth for luxation of distoangular mandibular impacted 3rd molar tooth.) reported very less trauma to surrounding tissue using new technique. In our split mouth study in 36 patients, trauma to the surrounding tissue during extraction of maxillary 3rd molar with conventional technique was 36.11% and it was only 8.33% when maxillary 3rd molar extraction was performed using Joedds technique (use of lower cowhorn forcep).

Several techniques were used over time for removal of tooth with minimal complications. Rubber band extractions were tried in haemophilic patients over decades.

Karl Schumacher (Southampton, PA)[4] in 2007 has introduced a new surgical protocol using apical instrumentation that allows for the preservation of the hard and soft tissues by focusing on occlusal movement of the tooth during extraction. This technique allows for the removal of most broken-down teeth using a closed (nonflap) procedure.

Sneha et al.(in 2014)[21] performed double blind, randomized controlled clinical trial of 100 patients requiring nonsurgical single rooted tooth extractions. The subjects were randomized into the experimental group (underwent extractions with periotome and conventional extraction forceps) or into the control group (subjects underwent extractions using periosteal elevator and conventional extraction forceps). Pain was assessed using visual analogue scale all throughout 7 days postoperatively. Gingival laceration, duration of surgery, number and frequency of analgesics consumed. and complications (if present) were also noted.They concluded in their study that use of periotome may be helpful in reducing post extraction discomfort.

Narsimman (in 2018)[32] did prospective clinical study. A total of 30 patients seeking transalveolar method of extraction were taken as study group. Out of 30 patients, complete success of extraction with physics forceps (Atraumatic extraction) was selected as one group and failure to extract tooth with physics forceps (Traumatic extraction) was selected as another group. Clinical outcomes in form of gingival laceration and healing were recorded and compared. In results he got that statistically significant reduction in the soft tissue loss, healing status and other complications were lesser in physics forceps (Atraumatic extraction) when compared to transalveolar method of extraction. In conclusion he found that he could avoid trans alveolar extraction in 87% of mutilated teeth.

In our split mouth study in 36 patients, soft tissue status after 7 days of extraction of maxillary 3rd molar with conventional technique was Red- Edematous and it was pink-slightly edematous(after 7 days) when maxillary 3rd molar extraction was performed using Joedds technique. Soft tissue status after 21 days of extraction of maxillary 3rd molar with conventional technique was Pink,Red-Slightly edematous and it was Normal pink-Not edematous(after 21 days) when maxillary 3rd molar extraction was performed using Joedds technique. Considering all the above factors, this new technique can been tried for the extraction of maxillary 3rd molars with mandibular cowhorn forceps.

Conclusion

In light of the results of the present report and short review of the literature, it can be concluded that this new technique involving the extraction of maxillary 3rd molars using #217s lower cowhorn forceps may effectively reduce the complications(like tuberosity fracture, root fracture, trauma to surrounding tissue, soft tissue injuries) of the conventional extraction of maxillary 3rd molars using maxillary 3rd molar forceps.

Since this technique ensures minimum trauma and acceptable ease, we advocate and encourage the use of #217s lower cowhorn forceps for extraction of maxillary 3rd molars.

This technique has some limitations like it cannot be adapted in isolated third molar extractions and in grossly decayed second or third molars with proximal caries. It cannot be applied on impacted maxillary third molar or in patients with limited mouth opening, patients having mobility in maxillary 2nd and 3rd molars.

In this technique, by delivering lesser amount of force, we can do easy extraction with Minimal chances of tuberosity fracture, soft tissue tear and slippage of the tooth provided if all standard protocols are followed. There are rare chances of occlusal displacement of the adjacent 2nd molar, when it is not adequately supported and If the beaks of the cowhorn forcep are not in the interdental area, or if the force is not given correctly, it may lead to the fracture of the distal cusps or part of the 2nd molar. These kinds of complications were not encountered in this study.

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