

APPLICATION OF ADVANCES IN EXODONTIA TECHNIQUE IN PRIVATE DENTAL PRACTICE

RUNNING TITLE: KNOWLEDGE ON NEW EXODONTIA TECHNIQUES

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ABSTRACT:

Aim: The aim of the research is to assess the application of recent advances in exodontia techniques in clinical practice.

Objective:

To evaluate the prevalence and limitations associated with use of new methods and recent advances in exodontia by private dental practitioners.

Background:

A variety of new instruments and techniques are revolutionising the fields of oral and maxillofacial surgery and dentistry. Different technological advances in extraction of teeth followed by clinicians across the nation is discussed in this article[1].

Materials and method:

In this study, survey will be conducted among private dental practitioners in India about the use of new advances in exodontia technique in their practices.

Reason:

The reason of this study is to assess the acceptance and applicability of new techniques in exodontia among private dental practitioners in India

Keywords: Powered periotome, physics forceps, orthodontic means of extraction, implant drills for exodontia

INTRODUCTION:

The field of oral and maxillofacial surgery has seen various technological and instrument-related advances, particularly in exodontia, in the last few decades[1]. These new techniques are revolutionizing the fields of oral and maxillofacial surgery and dentistry and increasing the clinician's comfort as well as improvising the outcome for the patient[2]. Advances like the powered periotome, introduced to atraumatically extract teeth, are useful for immediate or delayed implant placement[3,1]. The use of implant drills for extraction has been developed for exodontia in preparation for immediate implant placement. Piezosurgery has also gradually found its place in various oral surgery procedures[4]. The specific and simple nature of piezosurgery has been used in the removal of distinct third molars and in bone grafting[4,1].

Moreover, the Physics Forceps, which uses class 1 lever mechanics for exodontia without using excessive pressure or squeezing motion, has taken the art of atraumatic exodontia to a new platform. Lasers are also used for a wide variety of outpatient procedures such as extraction of impacted teeth. No Orthodontic techniques are also used by some practitioners to help simplify extraction of impacted teeth close to the inferior alveolar nerve[5].

The traditional means of extracting teeth often involving creation of a mucoperiosteal flap, elevation, and luxation with forceps often results in fracture or deformation of the dentoalveolar complex. This trauma could lead to ridge defects, making the placement of implants very difficult or even impossible in some cases. Also, elevation of the mucoperiosteum may compromise the periosteal blood supply to the alveolus, leading to loss of marginal alveolar bone even in relatively atraumatic extractions. Regardless of whether an implant is placed immediately post extraction or if the socket is grafted in preparation for future implant placement, the preservation of alveolar bone allows for more aesthetic and functional implant restorations. Millimeters do count when it comes to implants. Atraumatic tooth extractions are desired more and more to preserve bone for immediate implant placement and to aid in successful prosthetic rehabilitation. As a result Newer systems and techniques of extraction have evolved to achieve this target. This article discusses the various innovations in the extraction methods and their potential applications in oral and maxillofacial surgery[5,1].

The purpose of this study is to identify the knowledge and investment of advances in exodontia technique in their dental practices by the dentist. And also to assess the significance of each method.

MATERIALS AND METHOD:

In this study, 50 dentist with a private dental practice were included. A pretested questionnaire with 17 questions, structured to analyse the knowledge and application of the dentists about the recent advances in the exodontia techniques was prepared. Dentist were also asked about the implication and limitation of the advances in their clinical practice. Questionnaire was filled directly or sent to them by email. Questions were sent to 135 dentists and 50 responses were received. The dentists were also asked them rate the recent advances on a scale 1 to 20 in terms of applicability and advantage. Questionnaire used in the study is given below.

1. which of these recent advances in exodontia have you used clinically? –

- a) powered periotome
- b) piezo surgery
- c) physics forcep
- d) implant drills for exodontia
- e) orthodontic means of exodontia
- f) laser in exodontia
- g) none

2. Are you aware about the powered periotome and its advantages?

If yes, Do you use powered periotome for exodontia in your practise -

3. Which are the advantages of using powered periotome

- a) minimal or no alveolar bone loss
- b) maintains gingival architecture
- c) flap less removal of tooth
- d) intact extraction socket
- e) immediate implant placement
- f) maintainence periosteal blood supply to alveolus

4. Do you use piezo surgery for exodontia?

5. What is the major advantage of piezo surgery compared to other methods?

- a) harmless to soft tissues
- b) excellent visibility
- c) effective bone cutting ability
- d) minimal bone loss

6. Do you use physics forceps for exodontia?

7. What is more special about physics forceps in exodontia?

- a) due to its precise method of exodontia
- b) design of the working end of the forceps
- c) mechanism of action

8. Do you use lasers in dentistry? If yes, do you use them for exodontia?

9. In what mode can lasers be used for exodontia

- a) fiber optic method
- b) articulated arm delivery
- c) Both
- d) Lasers cannot be used for exodontia

10. What is the advantage of laser method of exodontia?

- a) low vibration bone cutting
- b) precise bone ablation
- c) prevent thermal side effects

11. What is the disadvantage of laser method of exodontia ?

- a) time consuming
- b) patient's discomfort about smell
- c) insufficient operative suction
- d) success depends on experience of surgeon

12. Do you use implant drills for exodontia?

13. What is the advantage you feel of using implant drill for exodontia?

- a) minimal invasive
- b) for placement of immediate implants
- c) preservation of thin bone

14. Do you use orthodontic method of extraction

15. What are the advantages of orthodontic means of exodontia

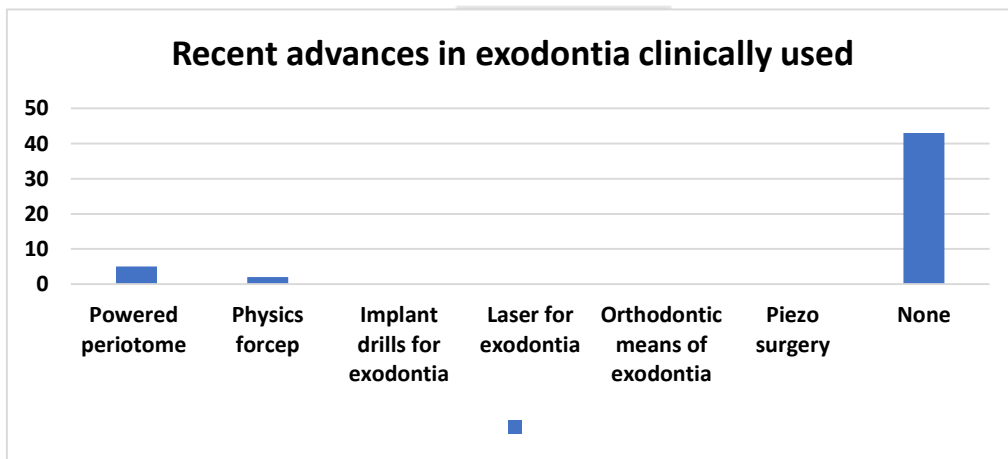
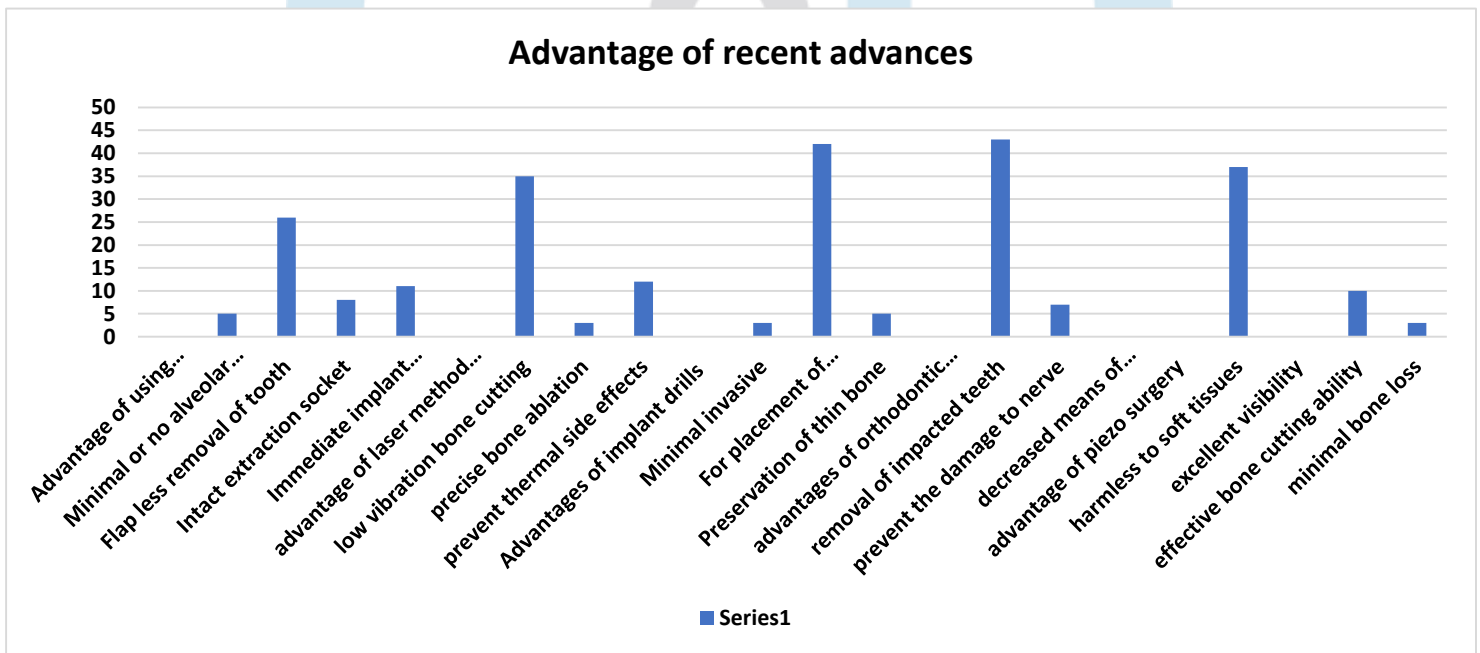
- a) removal of impacted teeth
- b) prevent the damage to nerve
- c) decreased means of surgical manipulation

16. Which of the following factors holds true for your practice

- a) I am up to date with all recent advances and use them regularly in my practice
- b) I am up to date with all the advances but find it difficult to put them into practice due to cost
- c) I am up to date with all the advances but find it difficult to put them into practice as they have no significant difference / advantage
- d) Other --

17. On a scale of 1- 10 (1 being least likely and 10 being highly likely) do you feel that there is a significant improvement in simplifying the practise of exodontia and post operative patient comfort with these advances.

RESULT:



About 52% of dentist have said that advantage of powered periostome are flawless removal of tooth and 20 % dentist have said that periostome are used on the indication of immediate implant placement, and 10% of dentist have said that minimal or no alveolar bone loss is the major advantage of the powered periostome, 11% of dentist have said that the intact extraction socket is the major advantage of powered periostome. And 10% of dentist said that they have once used powered periostome for extraction but does not uses it in their clinical practices.

79% of dentist said that design of the working end makes the physics forceps more special about it. 2% of dentist said that due to precise method of extraction is the major advantage of physics forceps. 19% of dentist said that the mechanism of action of physics forceps is the major advantage of physics forcep. 2% of dentist said that they have once used physics forceps during their practise, but they are have not implicated in their dental practices.

70% of dentist said that the low vibration bone cutting efficiency was the advantage of laser for exodontia. 24% of dentist said that the major advantage of laser means of exodontia is that it prevent thermal effect. 6% of dentist said that the precise bone ablation is the major advantage of the laser means of exodontia. None of the dentist have used laser in means of extraction in their clinical practices.

Immediate implant placement was the advantage of implant drill means of exodontia said by 84% of dentist. 10% of dentist have said that preservation of thin bone is the main advantage of implant drills for exodontia. 6% of dentist have said that implant drills for exodontia is minimal invasive. 86% of dentist said that the extraction of severely impacted tooth by orthodontic means of exodontia. 14% of subject stated that less injury to nerve is the advantage of the orthodontic means of extraction.

74% of dentist said that less injury to soft tissue is the advantage of piezo surgery. 20% of dentist said that effective bone cutting efficiency is the advantage of piezo surgery. 6% of dentist said that minimal bone loss is the advantage of piezo surgery.

DISCUSSION:

In the previous study which is taking about the advantage of physics forceps are atraumatic tooth extraction on basis of predictable extraction in four minutes, preservation of buccal and cortical bone[6,7]. In present study, it is said that the working end design makes the physics forceps.

In the previous study, it is concluded that, The automated periostome is an effective device for expedient atraumatic dental extractions. By avoiding mucoperiosteal flap reflection and damage to adjacent bone, delicate gingival papillae are preserved and the opportunity for future or immediate implant treatment is maintained[8,9,10] In the present study, it is said that flap less removal of tooth was major advantages.

On the basis of implant drills, the disadvantages of implant drills was described in previous study has disadvantage of the laser was insufficient operative suction, which significantly inhibited the laser cutting because of the overall volume of irrigation and blood covering the bone surface[11,12,13]. In present study, time consuming and sound , smell complained by patients were said as disadvantage of implant drills.

In the previous study, it is said that orthodontic means of extraction were time consuming, complicated[14,9], in present study, it is said that this method involves complications and not successfully all the time.

Outpatient oral and maxillofacial surgical techniques have come a long way in recent years. A variety of new instruments and techniques are enabling surgeons to provide services to patients in a shorter period of time with higher accuracy [15,11]. The powered periostome functions by aiding the surgeon in atraumatically extracting teeth, which allows for either immediate or delayed implant placement into a preserved socket. [12,5]

A technique using implant drills has also been developed to extract teeth in preparation for possible immediate implant placement. Piezosurgery is also being used, as many surgeons are taking advantage of its precise and effortless nature.[13,14] This type of surgery provides the patient with safe and accurate procedure because soft tissue remains unharmed[15,16]. Also, the Physics Forceps has been invented, which allows its operator to remove teeth without the use of excessive force or squeezing motion[17,18]

Lasers are now being used for extraction of impacted teeth and excision of oral lesions. Orthodontic techniques are also being introduced to help minimise nerve damage when a tooth that is near the IAN needs to be extracted[19,1,4]. Technology has allowed extraction techniques and outpatient oral and maxillofacial surgery to evolve, and both surgeons and patients are benefiting[20].

CONCLUSION:

With the group of dentist taken in this study shows that dentist has sound knowledge about advances in exodontia techniques but application of advances in their practise is insufficient. Dentist mostly find it difficult to put them into practice due to cost and also refuse to use due to as they have no significant difference / advantage. Most of them rated that it does not provide any major advantages than the conventional method of extraction. Atraumatic extraction techniques are becoming more and more popular nowadays. Technology has made extraction techniques and outpatient oral and maxillofacial surgery very simple and comfortable, thus benefitting both patients and dentists. Dental practitioners must make use of these systems, to provide high quality of treatment for their patients in a short duration of time.

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