

Knowledge among dental students about post-extraction complications and management

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ABSTRACT

Introduction: Extraction of teeth is one of the most common surgical procedures performed by dental surgeons. To perform extractions with minimal trauma to the surrounding tissues, it is necessary to have extensive training, skill, and experience. With an untrained or inexperienced dental surgeon, the incidence of complications post-extraction is high. This article aims at assessing the knowledge about post-extraction complications and its management among dental students in a city. **Materials and Methods:** The study was conducted as a cross-sectional survey among 50 dental students pursuing final year and internship in Chennai city. 10 questions eliciting information about the knowledge of post-extraction complications and management were framed. The responses obtained from the participants were compiled, processed further and analyzed. Various studies were referred to gain more knowledge to improvise the study. **Results:** On analyzing the results and comparing with recent similar studies, the dental students are aware of post-extraction complications and its management so as to ease their practices and pave more comfort for the patient. **Conclusion:** This study concludes that the knowledge about post-extraction complications and its management among dental students in a city is adequate. Dental awareness programs or lectures if arranged to address this concern may give additional knowledge and aid in treatment planning.

KEY WORDS: Dental students, complications, post extraction, management

INTRODUCTION

Tooth extractions or exodontia may be necessary to preserve or improve your dental health. Tooth extraction is the forced removal of a tooth, using forceps, from the dental alveolus, or the socket in the alveolar bone. Extraction of teeth is one of the most common surgical procedures performed by dental surgeons. To perform extractions with minimal trauma to the surrounding tissues, it is necessary to have extensive training, skill, and experience. With an untrained or inexperienced dental surgeon, the incidence of complications post extraction is high. Proper history taking and treatment planning for extraction of teeth are mandatory to reduce the risk of post-extraction complications. In many cases, the treatment course depends on the experience, professional judgment, and knowledge of the clinician. Every procedure results in some level of post-operative bleeding and inflammation, manifesting as pain and edema.^[1]

There must be enough knowledge about the procedure and potential complications of the procedure. The difficulty level should be assessed, and the need for a specialist should be assessed for which skill regarding the procedure should be well known. If the clinician is planning to perform difficult surgical extractions, it is must for them to be ready to deal with the potential complications associated with this procedure.^[2]

Extraction can be of two types, namely simple and surgical extractions. Post-extraction bleeding is one of the most common post-extraction complications which can be managed by simple procedures like compressing the socket with pressure till the use of sutures or even gel foam.^[3]

This article aims at assessing the knowledge about post-extraction complications and its management among dental students in a city.

MATERIALS AND METHODS

The study was conducted as a cross-sectional survey among 50 dental students pursuing final year and internship

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in Chennai city. 10 questions eliciting information about the knowledge of post-extraction complications and management were framed. The questionnaire was pilot tested for its feasibility and validity.

After testing, it was distributed as a self-assessed questionnaire to the participants. The responses obtained from the participants were compiled, processed further, and analyzed by entering the obtained data in Microsoft Excel 2007 version and graphs were made to represent them. Various studies were referred to gain more knowledge to improvise the study.

Questionnaire

Year of study: CRI/IV year

- 1) The most common post-extraction complication which you know?
 - (a) Prolonged bleeding
 - (b) Dry socket
 - (c) Pain
 - (d) Swelling
 - (e) Sinus perforation
 - (f) None
 - (g) Other
- 2) What do you think is the duration of post-operative pain?
 - (a) Same day of procedure
 - (b) 1–3 days
 - (c) 3–6 days
 - (d) 5–10 days
- 3) Having a thorough medical history before extraction will allow the dentist to better deal with the complication that may arise.
 - (a) True
 - (b) False
- 4) Which of condition do you think makes the extraction more difficult?
 - (a) Grossly decayed tooth
 - (b) Abnormal root morphology
 - (c) Hypercementosis
 - (d) Endodontic treated tooth
- 5) How do you manage prolonged bleeding primarily?
 - (a) Direct pressure over the socket
 - (b) Suturing
 - (c) Crushing the foramen socket with hemostat
 - (d) Applying hemostatic agents
 - (e) Electro-cautery
- 6) In case of prolonged bleeding, what is the most commonly used hemostatic agent?
 - (a) Adrenaline
 - (b) Absorbable gelatin sponge
 - (c) Thrombin
- 7) Do you know how to manage a dry socket?
 - (a) Yes
 - (b) No
- 8) What is the best way to prevent dry socket?
 - (a) Atraumatic extraction
 - (b) Suturing wide open sockets after extraction
 - (c) Use of antimicrobial mouth rinse before extraction
 - (d) All of the above
- 9) Does smoking have any effect on the incidence of dry socket?
 - (a) Yes
 - (b) No
 - (c) Do not know
- 10) Displacement of tooth into the maxillary sinus is highly seen during the extraction of
 - (a) Maxillary 1st molar
 - (b) Maxillary 2nd molar
 - (c) Maxillary 3rd molar
 - (d) All of the above

RESULTS

Figure 1 represents the participants in the survey, of which 71% belong to CRI and 29% who are pursuing 4th year of under-graduation in dental colleges of Chennai city.

Figure 2 represents the knowledge about the most common post-extraction complication, where 37% responded prolonged bleeding, 29% responded dry socket, 21% responded pain, 10% responded swelling, 2% responded sinus perforation, and 1% responded others.

Figure 3 represents the responses of participants on knowledge about the duration of post-operative pain. 56% responded that post-extraction pain leads up to the duration of 1–3 days.

Figure 4 represents the knowledge about post-extraction complications and its management. The bars in the graph are named 1–6 which are represented in Table 1. The first bar corresponds to the knowledge of

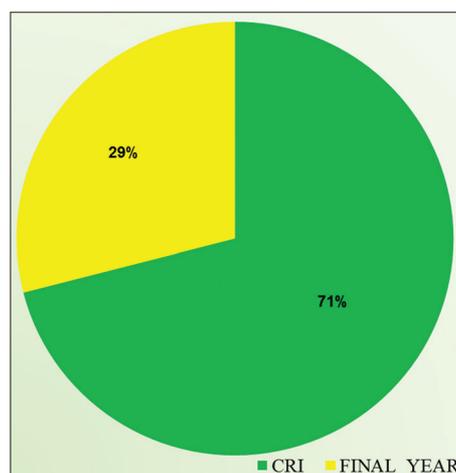


Figure 1: Participants

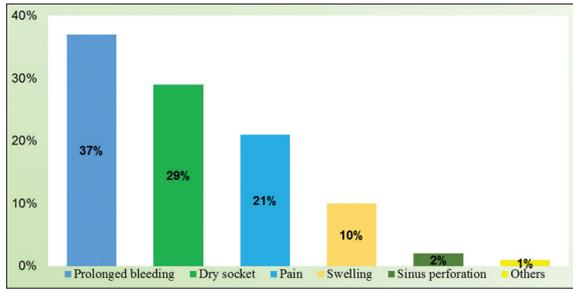


Figure 2: Knowledge about the most common post-extraction complication

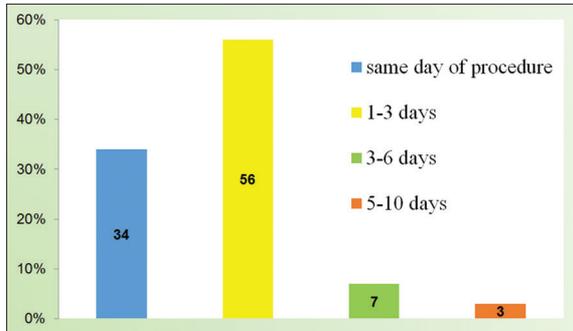


Figure 3: Knowledge about the duration of post-operative pain

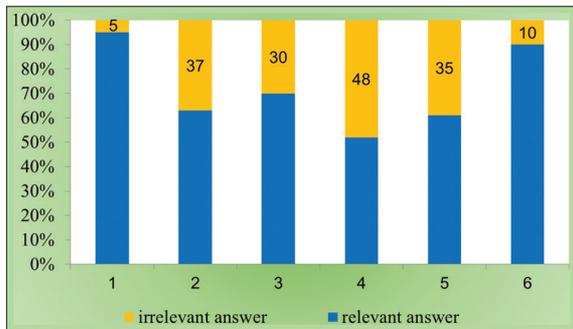


Figure 4: Refer Table 1 for the legend

importance on recording proper medical history before extraction to prevent post-extraction complications, where only 5% gave an irrelevant response and 95% gave a relevant response.

DISCUSSION

It is unpredictable to evaluate the difficulties with extractions and its complications.^[1] A dry socket is a painful, foul-smelling post-operative condition that develops during the course of the first several days after tooth extraction.^[4] An equivalent term for a dry socket is “alveolar osteitis.” Dry sockets occur when either an adequate blood clot has failed to form in the extracted tooth’s socket or else the blood clot that did form has been dislodged and lost. Since the formation of a blood clot is an important part of the healing process, the healing of the extraction site is disrupted and delayed. The term “dry socket” comes

Table 1: Representation legend for Figure 4

| Number | Representation |
|--------|---|
| 1 | Knowledge about importance of recording proper medical history |
| 2 | Knowledge about complication of extraction |
| 3 | Knowledge about management of prolonged bleeding |
| 4 | Most preferred hemostatic agent |
| 5 | Knowledge about dry socket and its management |
| 6 | Knowledge about etiology in case of maxillary sinus perforation |

from the appearance of the wound. Since no blood clot is present, exposed bare bone is visible.^[5] In a study conducted among dental interns, the most common complication they faced (32.5%) was dry socket and their level of knowledge about dry socket and its management was satisfactory (70.1%).^[5] Another study, the finding was similar and reported 77.5% had adequate knowledge of management of dry socket.^[6] In our study combining the appropriate responses regarding dry socket and its management, on a mean value was 65% which is quite acceptable.

It is difficult to achieve complete hemostasis within the oral cavity due to the highly vascular nature of the tissues and exposure of the open socket to the patient’s exploring tongue and fingers. Post-operative prolonged bleeding is a complication after tooth extraction, with an incidence of up to 1.4% of patients undergoing lower wisdom tooth surgery. Low-level ooze in healthy patients for 12–24 h after extraction is normal as an organized clot form in the tooth socket. The patient will have mildly bloodstained saliva that will decrease over time. Any active bleeding beyond this point often indicates a hemostatic problem and requires investigations and treatment. In our study, the response regarding the most common post-extraction complication was prolonged bleeding (37%).^[7]

Gel foam is one of the most commonly employed agents for the control of bleeding. Gel foam is a porous, pliable sponge made from dried and sterilized porcine skin gelatin.^[8-10] Gelfoam’s mode of action is not completely understood, but unlike collagen, it is believed to be related to formation of a mechanical matrix that facilitates clotting rather than affecting the clotting mechanism. Gel foam liquefies in 1 week and is completely resorbed in 4–6 weeks.^[11] According to Santhosh kumar *et al.*, it has been reported that 60% of dental students use gelatin sponge for controlling prolonged bleeding. His study also concluded that the knowledge about post extraction complications and its management was acceptable among dental students in 2016.^[3]

Bone Wax is a sterile mixture of beeswax, paraffin, and isopropyl palmitate that is packaged in individual foil

envelopes. It is useful when bleeding is from a visualized local vascular channel within the bone, commonly referred to as a “bone bleeder,” at the surgical site. This occurs commonly during the extraction of mandibular third molars, and if not adequately addressed during surgery can be a reason for post-operative bleeding. Bone Wax is nonresorbable, and due to its possible adverse effect on osteogenesis, caution should be used where regeneration of bone is expected. Mild inflammatory reactions have been reported in tissues adjacent to the site of bone Wax implantation, and this agent may prevent the clearing of bacteria from infected sites.^[12]

According to Rani *et al.*, on a survey conducted about suture materials among dental students, they concluded that knowledge about suturing and suture materials was adequate.^[13]

Derrbishi *et al.*, in 2017, concluded in a study conducted among dental interns that basic knowledge about management of post-extraction complications was adequate and included that knowledge regarding some rare complications that may occur after extraction must be known; it can be learned only by attending lectures or learning programs on current updates on related topics.^[4]

Alfaqueh *et al.*, in 2018, conducted a similar study and concluded that the level of knowledge about the subject was acceptable and there is a need for improvement to accomplish a good knowledge of post-extraction complication management.^[5]

CONCLUSION

On analyzing the results and comparing with recent similar studies, the dental students are aware of post-extraction complications and its management so as to ease their practices and pave more comfort for the patient. This study concludes that the knowledge about

post-extraction complications and its management among dental students in a city is adequate. Dental awareness programs or lectures if arranged to address this concern may give additional knowledge and aid in treatment planning.

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