



A study about knowledge and awareness regarding post-extraction complications among dental interns of the College of Dentistry

Ali Atiyah Derrbishi¹, Waad Abbas², Mariam Ali Alrefai³, Abdulrahman Mudaysh Bajawi⁴, Ali Mansour Alqahtani⁵

Abstract:

Background: The most common dental procedure done in the dental clinics is the extraction of teeth. Each dental practitioner should know the various complications that can happen during these procedures. Having the basic knowledge and awareness of these post-extraction complications can prevent the future untoward effects on the patients. Increased awareness and knowledge can decrease the incidence of post-extraction complications. The aims of the study was to find out the knowledge and awareness of the post-extraction complications among the dental interns of the College of Dentistry, Jazan. **Materials and Methods:** The study was done among the dental interns of the College of Dentistry, Jazan. A total of 60 interns were selected randomly for the study. Among these, 30 were male students and 30 were female students. The study was done with the help of pretested questionnaire consisting 11 questions regarding knowledge and awareness of the post-extraction complications. **Results:** The number of students who responded with correct options was 72.5% and a greater percentage of correct answers were obtained in questions relating to common appearing complications following extractions. However, there was no significant difference in relation to the percentage of corrections options obtained by either male or female students. **Conclusion:** Although the knowledge of Dental interns in relation to awareness of common complications post-extraction is adequate, however, they must update their knowledge regarding some rare complications that may occur following extractions. Continuing Dental Education must include lectures and videos regarding managing some rare complications that can occur during dental surgical procedures.

Key words: Post extraction complications, awareness, Interns

Introduction:

Tooth extraction is one of the common procedures undertaken in dental surgery clinics.¹ Post-extraction complications generally do not occur; however, there are times when the dentist is faced with post-extraction complications. In such instances, the dentist should be aware of the treatment procedures and management of post-extraction complication. Adequate training is imparted to the dental doctors during the course of their curriculum and during training in internship. Sometimes, it becomes necessary for us to evaluate the performance of the upcoming doctors and future dentists with respect to the knowledge about the management of post-

extraction complications. Such a study is of pivotal importance in designing the curriculum of studies and also conducting Continuing Dental Education programmes to include topics which may be useful to fresh as well as practicing dentists. With this aim, we in the present study, tried to evaluate the knowledge of dental Interns about the management of post-extraction complications.

Materials and Methods:

The study was done among the dental interns of the College of Dentistry, Jazan. A total of 60 interns were selected randomly for the study. Among these, 30 were male students and 30 were female

students. The study was done with the help of pretested questionnaire consisting of 11 questions regarding knowledge and awareness of the post-extraction complications, history taking, management of the complications and management of the patients.

1. If a tooth not for extraction has been subluxated during extraction, how would you manage this case: *

- a. Stabilize with non-rigid fixation
- b. Leave it and it will heal
- c. Extract that tooth also
- d. Stabilize with rigid fixation

2. A small tooth fragment that was aspirated to the airway will usually go to: *

- a. Tonsillar fossa
- b. Left lung
- c. Right lung
- d. Maxillary sinus

3. After extracting an upper first molar, you noted that the palatal root was associated with granuloma and bubbling blood was coming from the socket; what will you do first? *

- a. you will inspect with a sharp instrument into the socket to check for communication with the sinus
- b. you will take a radiograph
- c. you will ask the patient to blow his nose (nose blow test) to confirm communication
- d. you will put a bone graft

4. A patient has a communication between oral cavity and maxillary sinus for more than 5 weeks, and the patient is having fever and pus discharge from the communication: *

- a. Drainage and antibiotics should be done after the closure of communication
- b. Removal of the fistula is necessary at the time of closure

c. You will ask the patient to blow his nose (nose blow test) to confirm communication

d. Caldwell Luc approach is necessary for the closure

5. Three days after extracting a right lower third molar, the patient developed pain in the extraction site with bad taste and halitosis; he had no swelling and no fever, What is the most appropriate management: *

- a. Irrigation of socket with a placement of a sedative dressing and analgesics
- b. Curettage of the socket to induce bleeding
- c. Leave untreated and observe for few days
- d. Start antibiotics

6. During a third molar removal, you observed lingual nerve was completely severed (neurotmesis or Sunderland class V); you should: *

- a. Wait for 6 weeks before any intervention
- b. Inform the patient and call for the review after 1 week for neurosensory testing to confirm the diagnosis
- c. Refer the patient to a specialist for immediate intervention and nerve repair
- d. Refer the patient for physiotherapy

7. You extracted a tooth of a patient and after 3 hours, the patient was still having profuse bleeding. The patient said he is on warfarin and he did not tell you when you took the history; the patients INR was 4.5; What is the proper management? *

- a. Put ice packs on the extraction site
- b. Give the patient Vitamin. K
- c. Give the patient fresh frozen plasma (FFP)
- d. Give the patient Tranexamic acid IV

8. A persistent oro-antral fistula for a 12 weeks period following the extraction of a maxillary first

permanent molar is best treated by:
*

- a. Further review and reassurance since it will most probably heal spontaneously
- b. Antibiotic therapy and nasal decongestants
- c. Curettage and dressing of the defect
- d. Excision of the fistula and surgical closure
- e. Maxillary antral washout and nasal antrostomy

9. A patient who underwent extraction of 3rd molar, experiences pain in socket on the 3rd day. The socket is tender with no fever and swelling; what treatment should be done? *

- a. Irrigation of socket with sedative placement and analgesic
- b. Curettage of the socket and induce bleeding
- c. Leave untreated and observe for few days
- d. Start antibiotics followed by curettage of the socket

10. You performed an extraction 3 hours earlier on a fit and healthy patient. The patient has returned to the surgery complaining of bleeding from the extraction site. The

appropriate management options are: *

- a. Lie the patient in the chair to calm them down
- b. Get the patient to bite on a gauze pack
- c. Pack the socket with Alvogyl
- d. Pack the socket with an oxidized cellulose dressing (e.g. Surgicel)
- e. Suture the socket using Prolene sutures

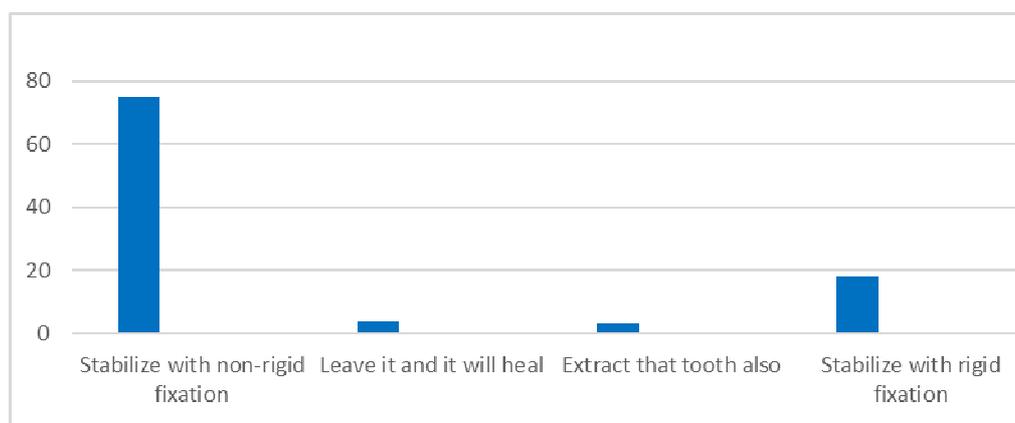
11. You have just repaired an oro-antral communication following extraction of upper molar. What would you include in the post-operative management?

- a. Antibiotics
- b. Advice the patients about not to blow their nose
- c. Nose drops
- d. Inhalations

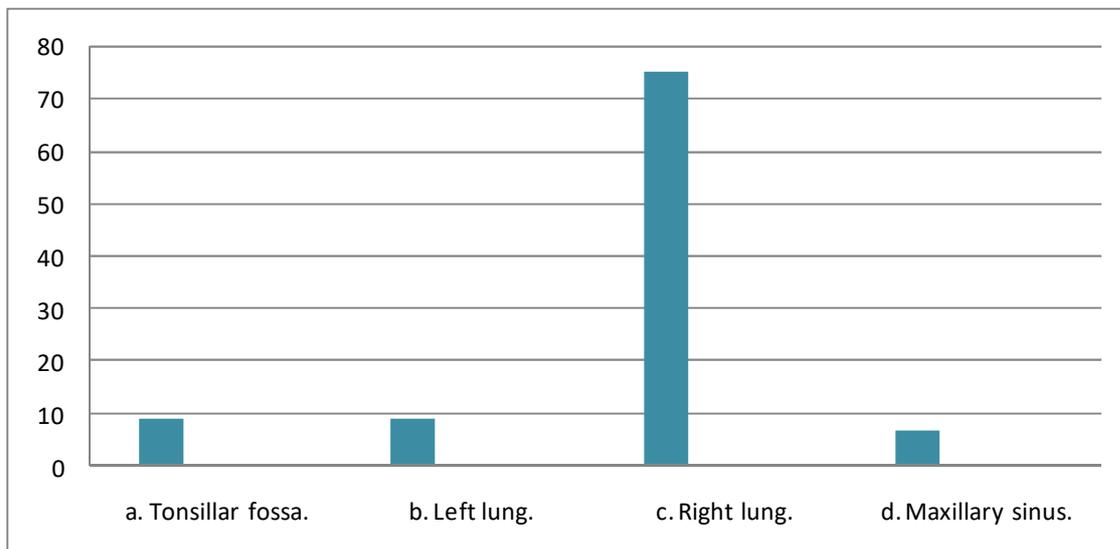
The questionnaire was distributed randomly to the available dental interns, and a time period of 20 minutes was given to write their responses and then it was collected, tabulated and analyzed statistically using IBM SPSS statistics version 16.

Results:

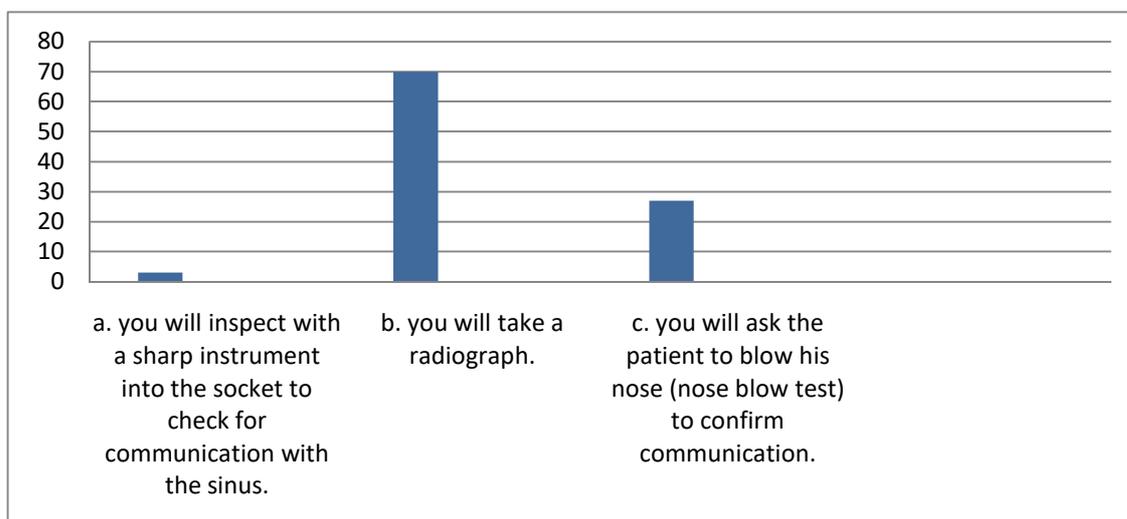
Figure I: Responses obtained to Question no.1



In answer to Question number 1, 45 (75%) responded to the question correctly and rest 25% replied with the other options as seen in the **Figure I**.

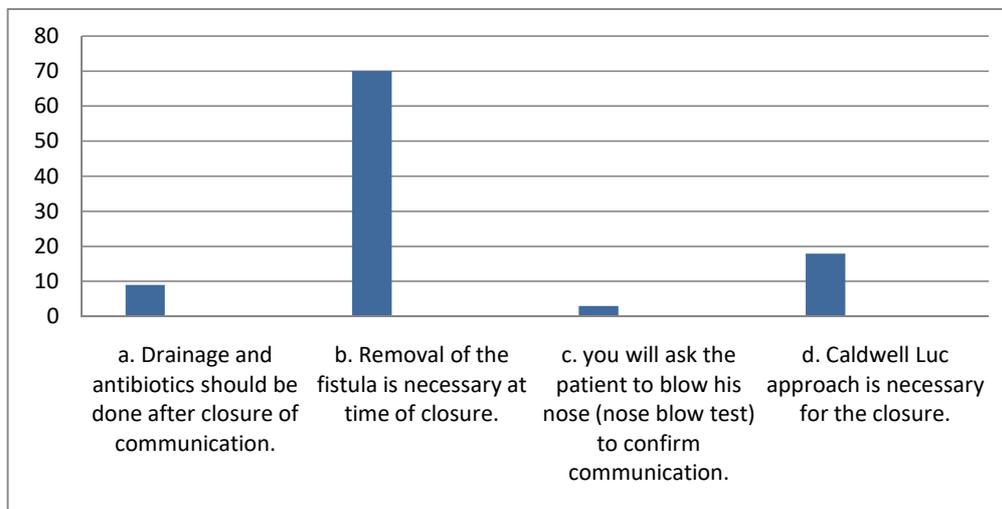
Figure II: Responses obtained to Question No.2

The number of interns giving the correct response to question No. 2 was 75%; the obvious place for lodging foreign bodies is the right lung due to the anatomical positioning of right primary bronchus which is almost straight with the trachea.

Figure III: Responses obtained to Question no.3

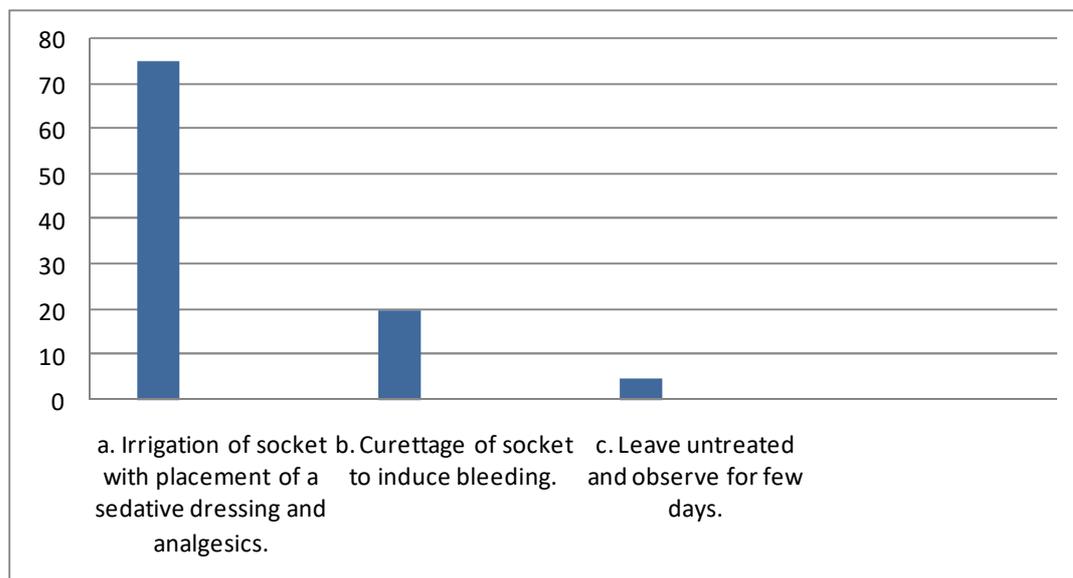
The first thing to do in such a case is to obtain a good periapical radiograph and 70% of the respondents responded with the correct reply.

Figure IV: Responses obtained to Question no.4



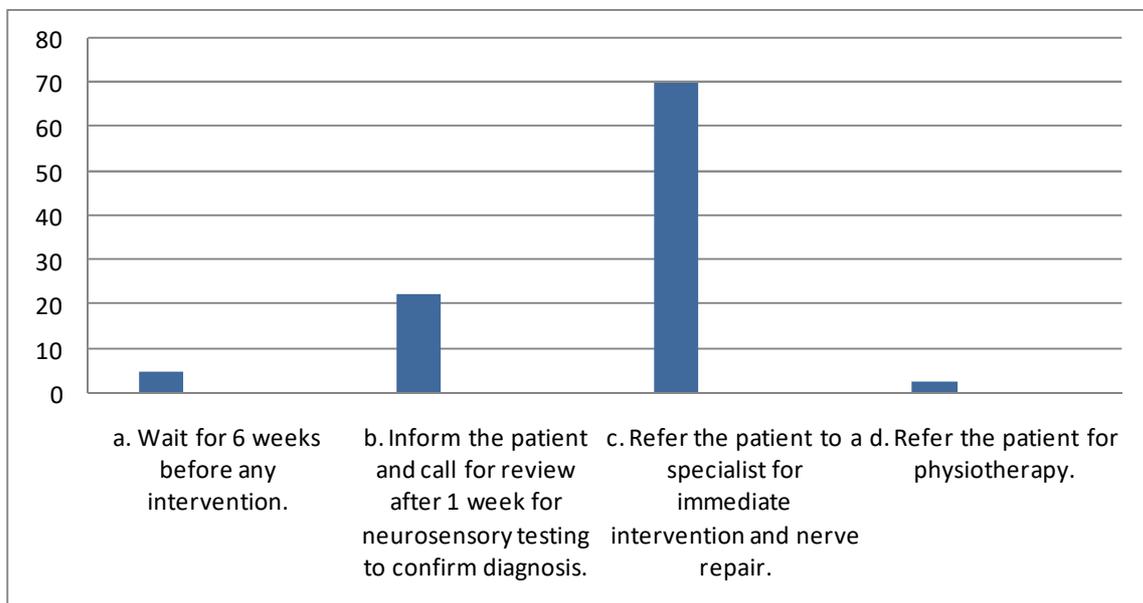
More than 5-week old communication with drainage indicates the formation of an oro-antral fistula which is necessary to be removed at the time of closure.

Figure V: Responses obtained to Question no.5



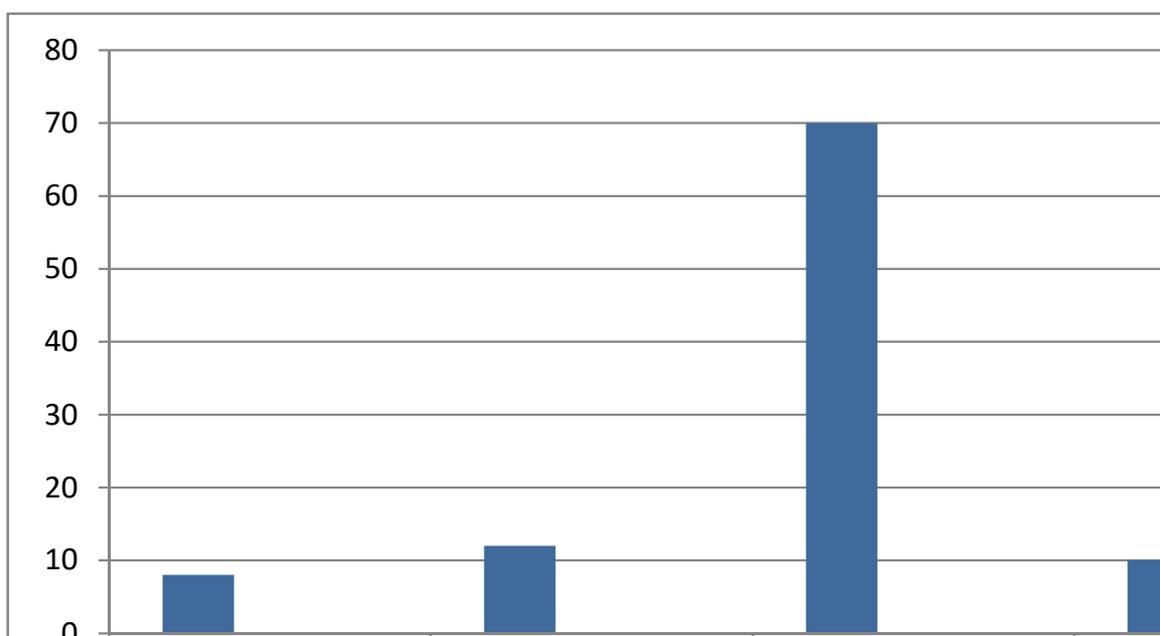
The question number 5 was regarding the development of common post-extraction problem which is called as a dry socket or alveolar osteitis; the management is simple with irrigation of socket and placement of sedative dressings and analgesic.

Figure VI: Responses obtained to Question no.6



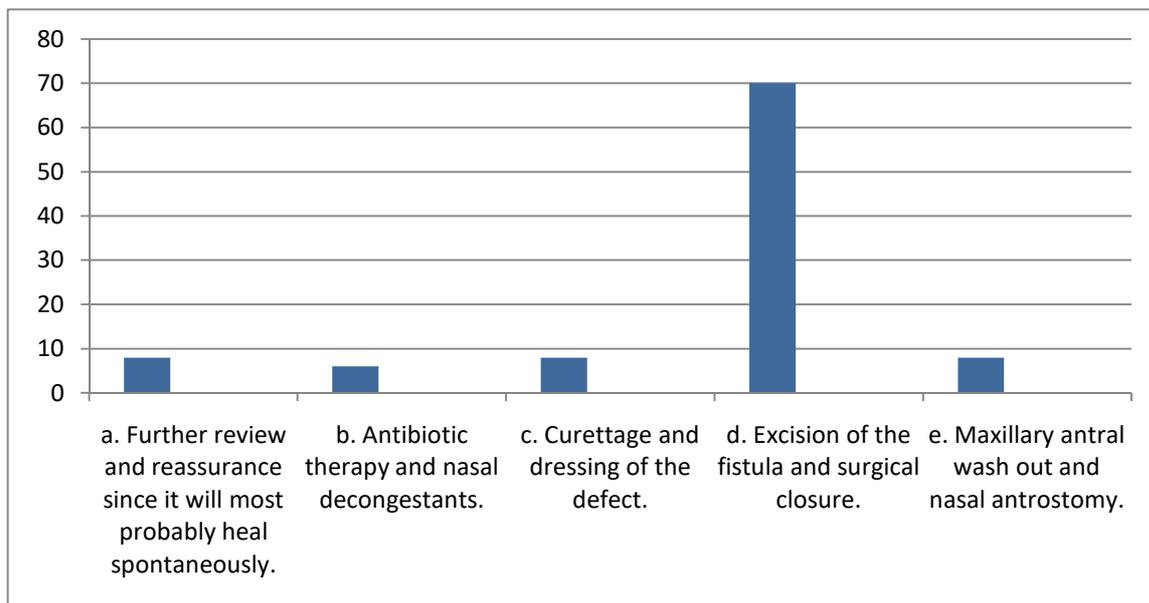
Sunderland class V nerve injuries involve complete section of nerve in two parts; requires the person to be referred to a specialist for immediate intervention and nerve repair.

Figure VII: Responses obtained to Question no.7



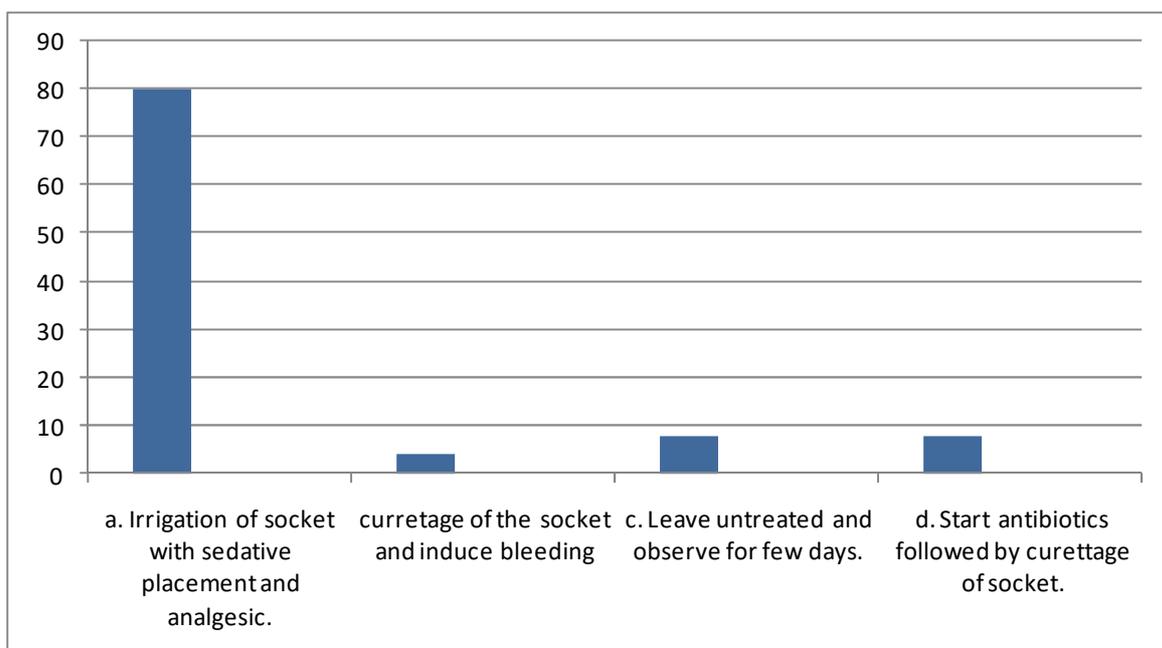
Patients on warfarin therapy with reported bleeding is due to increased INR; are better treated by giving Fresh Frozen Plasma [FFP]. 70% of respondents reported with the correct answer to the question.

Figure VIII: Responses obtained to Question no.8



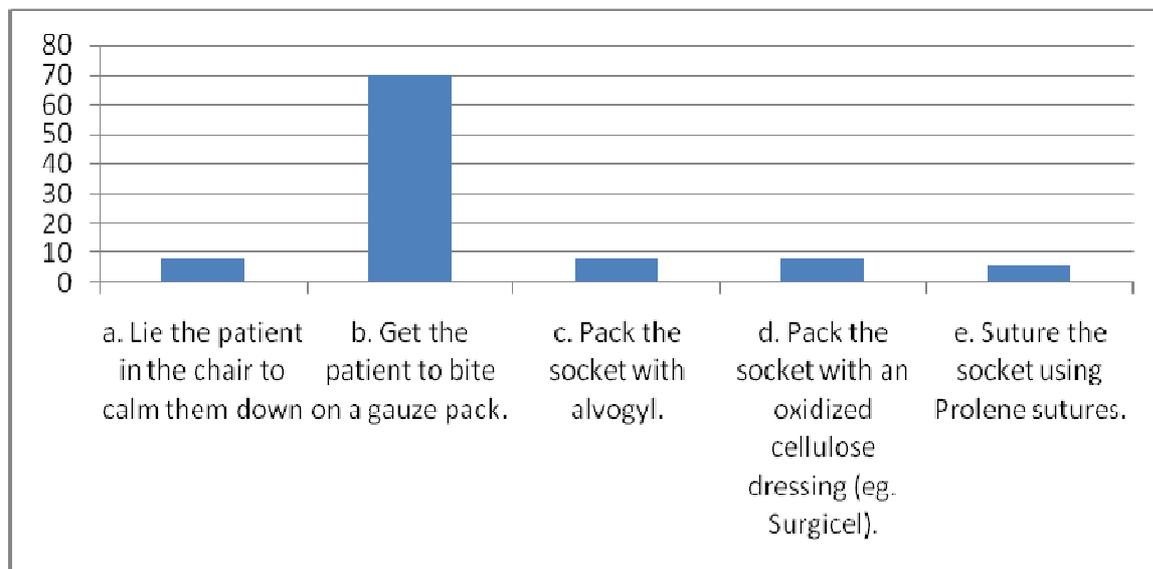
An oro-antral fistula of greater than 12 weeks usually will have developed fistula which needs to be excised first before surgical closure.

Figure IX: Responses obtained to Question no.9



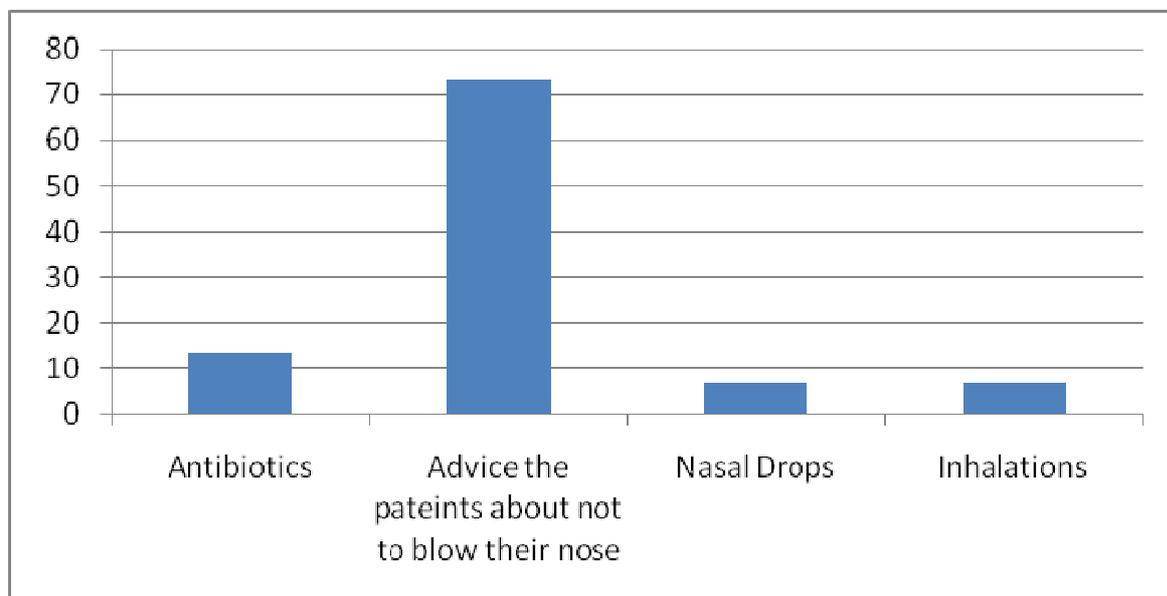
Dry socket is a common complication after 3rd molar extraction and it is treated with simple irrigation and analgesic.

Figure X: Responses obtained to Question no.10



Localized pressure by biting on a gauze is useful in the arrest of hemorrhage post-extraction in healthy patients. 70% of respondents responded correctly to this question.

Figure XI: Responses obtained to Question no.11



After the repair of an oro-antral communication, it is advisable to prescribe antibiotics and 73.3% of the people responded with correct answer.

Discussion:

In the present study, we tried to evaluate the knowledge of dental interns regarding post-extraction complications. Dental extractions are considered minor surgical procedures and difficulties following extractions and complications are unpredictable.² A thorough pre-extraction evaluation and obtaining detailed history is one of the important aspects of preventing and treating complications, should it occur. Sound surgical techniques are certainly going to prevent complications. However, the knowledge of some rare complications and the methods to deal with it may not be adequately remembered by students due to lack of exposure to such patients during their career as students. Therefore, with this idea, we tried to evaluate the knowledge of dental interns regarding post-extraction complications. In our study, we found that 72.5% of the interns had good knowledge of the post-extraction complications. A similar study by Santosh Kumar et al³ to evaluate the knowledge of dental students regarding post-extraction complications found 78.3% agreed for the usefulness of thorough medical history for treating complications, although we in our study did not include the history question. Interestingly, 60% of the students in their study were aware of gelatine sponge for the achievement of the homeostasis. We in our study found that the interns were aware of the oxidized cellulose dressing (Surgicel) material to be used to arrest post-extraction hemorrhage. The sponge is porous in nature and is made from dried sterilized animal skin gelatine.^{4,5} Although the mode of action is not understood but it acts like collagen matrix and helps to facilitate clotting rather than affecting clotting mechanism.^{6,7} It liquefies in one week and is completely reabsorbed in 4 to 6 weeks.⁸

Another most common post-extraction complication is the occurrence of alveolar

osteitis; Sigron GR et al⁹ in a study of complications after third molar removal found that alveolar osteitis occurred in 4.2% and was a common complication followed by sensation disorder (1.5%). Adeyemo WL et al¹⁰ for the clinical evaluation of extraction site healing had shown that localized osteitis was present in 8.2% of cases, followed by acutely infected alveolus in 1.6% and acutely inflamed alveolus in 1.2% of the patients. Most of the complications were present in the molars (60.0%) and females were more commonly affected by the complications than males.¹¹ In our study we found that 77.5% of patients had adequate knowledge of management of dry socket.

The intern's capability of diagnosis of orofacial communication using blow test and their knowledge regarding treatments were checked in questions and we found that 70% of the interns were able to correctly mark the options given to them. Questions were also included regarding damage to nerve; Sunderland Class V nerve damage consists of complete severing of the nerve in two, and 70% answered correctly that such cases must be referred to a specialist for nerve repair.

Conclusion:

Although the knowledge of dental interns in relation to awareness of common complications post-extraction is adequate, they must update their knowledge regarding some rare complications that may occur following extractions. Continuing Dental Education must include lectures and videos regarding managing some rare complications that can occur during dental surgical procedures.

References:

1. Pacheco-Vergara MJ, Cartes Velásquez RA. Referrals, procedures and complications in oral surgery services. Literature review. *Revista Odontológica Mexicana* 2016; 20(1):

e13-e21;

<https://doi.org/10.1016/j.rodex.2016.02.010>

2. MacMillan HW. Diagnosis and treatment of post-extraction complications. the Journal of the American Dental Association 1930; 17(1):70-78;

<https://doi.org/10.14219/jada.archive.1930.0019>

3. Santhosh Kumar MP, Lavanya. Knowledge about Post Extraction Complications among Undergraduate Dental Students. J Pharm Sci & Res 2016; 8(6): 470-76.

4. Guralnick W, Berg L. Gelfoam in oral surgery; a report of 250 cases. Oral Surg Oral Med Oral Pathol 1948; 1: 629-32.

5. Jenkins HP, Janda R, Clarke J. Clinical and experimental observations on the use of gelatin sponge or foam. Surgery 1946; 20: 124-32.

6. Correll JT, Prentice HR, Wise EC. Biologic investigations of a new absorbable sponge. Surg Gynecol & Obstet 1945; 81: 585-89.

7. Council on Pharmacy and Chemistry. Absorbable gelatin sponge: new and non-official remedies. JAMA. 1947; 135: 921.

8. Jenkins HP, Janda R. Studies on the use of gelatin sponge or foam as a hemostatic agent in experimental liver resections and injuries to large veins. Ann Surg 1946; 124: 952-961.

9. Sigron GR, Pourmand PP, Mache B, Stadlinger B, Locher MC. The most common complications after wisdom-tooth removal; part 1: a retrospective study of 1199 cases in the mandible. Swiss Dental J 2014; 124: 1042-46.

10. Adeyemo WL, Ladeinde AL, Ogunlewe MO. Clinical Evaluation of Post-Extraction Site Wound Healing. J Contemp Dent Pract 2006; 7(3): 40-9.

11. Kar IB, Mishra N, Sethi AK, Mahavoi BR. Unusual case of post-extraction bleeding. Natl J Maxillofac Surg 2011; 2(2): 204-06; <https://doi.org/10.4103/0975-5950.94483>

Conflict of interests: Nil

Source of funding: Nil

Authors details:

1. **Corresponding author:** Resident, Oral & Maxillofacial Unit, Prince Mohammed Bin Nasser Hospital, Jazan- 82943, KSA; E-mail: a.derrbishi@gmail.com
2. Private Dental Practitioner, Jazan, KSA
3. Resident, Division of Oral and Maxillofacial Surgery, King Fahad Medical City, Jeddah, KSA
4. General Dental Practitioner, Alsalhiah Public Health Centre, Arar, Saudi Arabia
5. Resident, Oral & Maxillofacial Surgery, King Fahad Central Hospital, Abu Arish, Jazan, Saudi Arabia