



Complications of Exodontia Lecture 3 DHS-4

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SCIENCES

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COMPLICATIONS AFTER EXTRACTION OF IMPACTED THIRD MOLARS- LITERATURE REVIEW

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Nerve injuries – A review

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Contemporary exodontia

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ABSTRACT

Exodontia is a cardinal skill of all dentists. Patients expect extractions to be skillfully and painlessly accomplished every time. It's not necessarily so simple and can be challenging. In this paper we explore contemporary issues of the full process of exodontia including diagnosis, technique, complication minimization as well as management of medically compromised patients with appropriate post-operative care, including pharmacotherapy.

Keywords: Complications, dentoalveolar surgery, exodontia, medically compromised, pharmacology, ridge preservation.

Abbreviations and acronyms: AF = Atrial fibrillation; GA = General anaesthetic; INR = International normalising ratio; IV = Intravenous; LA = Local anaesthesia; MRONJ = Medication related osteonecrosis of the jaws; NICE = National Institute for Health and Care Excellence; Nm = Newton meters; NOAC = Novel oral anticoagulant agent; NSAIDS = Non steroidal anti inflammatory drugs; OMS = Oral & Maxillofacial Surgery; ORN = Osteoradionecrosis.

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[Correction added on 18 May 2018 after first online publication: Table 2 has been added.]

Post operative complications

Dry socket
(alveolar
osteitis)

Delayed
healing and
infection

Wound
dehiscence

Post
operative
bleeding

Pain

Edema

Trismus

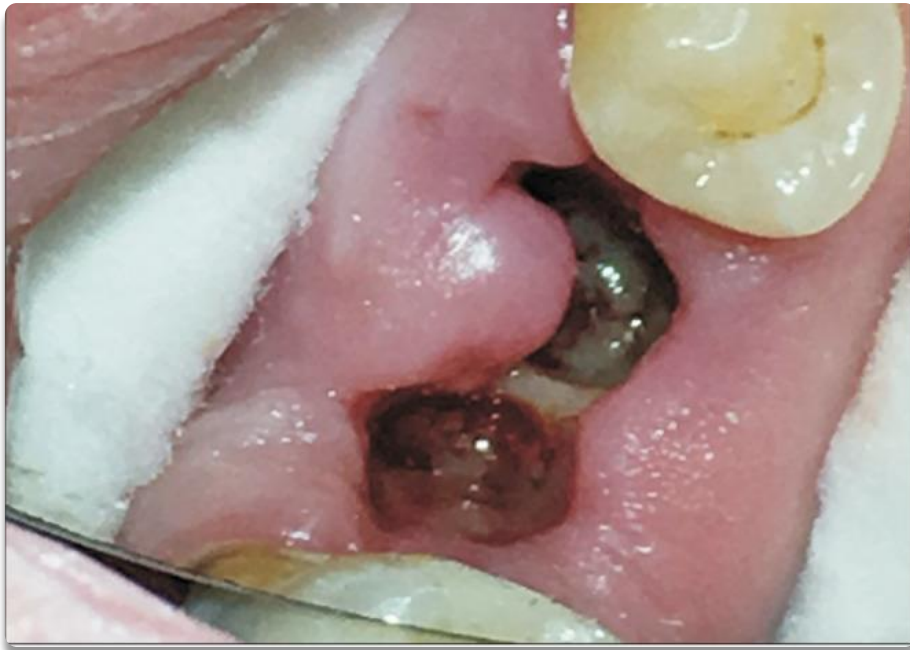
Sharp bony
spicules

Eccymosis

Oroantral
Fistula

Cavernous
Sinus
Thrombosis

Dry socket (alveolar osteitis)



- ▶ Dry socket(alveolar osteitis) or fibrinolytic osteitis

- ▶ Dry socket lesions occur in approximately 1% to 5% of all extractions and in up to 38% of mandibular third molar extractions.
- ▶ Food particles and bacterial biofilm may hinder contact of the healing epithelium with the exposed bone, which may prolong the healing time of the dry socket lesion
- ▶ Both smoking and use of oral contraceptives correlate with an increased incidence of dry socket lesions
- ▶ The basic treatment for dry sockets is to irrigate out food particles or bacterial material using chlorhexidine gluconate or saline and then fill the socket with a medicament



Dry
socket
clinical
picture

Dry socket (alveolar osteitis)



- ▶ Prevention and treatment
- ▶ Causes moderate to severe pain usually after 24-48 hours but without fever, swelling, and erythema.
- ▶ Incidence and prevalence according to the severity of the case, instructions post operatively and medical history .
- ▶ Irrigation, removal of debris, iodoform gauze soaked with medication to be changed everyday for the next 3 to 6 days depending on the severity of the pain.
- ▶ Some authors, they prefer curettage under local anesthesia, irrigation and new blood clot establishment.

Dry socket (alveolar osteitis)

Dry Socket Etiology, Diagnosis, and Clinical Treatment Techniques

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Abstract (J Korean Assoc Oral Maxillofac Surg 2018;44:52-58)

Dry socket

DRY SOCKET

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Dry socket (alveolar osteitis)

Post operative complications are of common occurrence which have been widely reported in dental literature. A study has been conducted in Dental clinics in Ajman University of Science & Technology, for the year 2003.

Objectives: The aim of this study was to determine the incidence of post operative complications of dental extraction occurred in dental clinics of FOD, AUST, the cause & occurrence of the complication and treatment received for each patient.

44 patient who developed post operative complications were selected for the study. The selected patients were of different ages, gender, medical history.

Results: The detected post operative complications either Dry socket(29.5%), Infected socket with Pain and Swelling (35%), in addition to Bleeding (15%). Other complications have been reported like Numbness(6.8%), Trismus (6.8%), and Ecchymosis (4.5%).

50% of the overall complications were discovered in smokers and patients with poor oral hygiene.

Teeth selected for this study having curved roots, closed to anatomical structures or impacted.

Conclusion: Proper preoperative assessment, preparation of the patient, operative assessment, operators skills, and postoperative instructions are of prime importance, with them, postoperative complications will be rarely seen in dental practice.

Delayed healing and infection

- ▶ Delayed healing and infection prevention by:
 - ▶ 1. Careful asepsis wound debridement and irrigation
 - ▶ 2. Some patients are predisposed to post operative wound infection and should be given prophylactic antibiotics preoperatively

Wound dehiscence

- ▶ Is a condition where a cut made during a surgical procedure separates or ruptures after it has been stitched back together.
- ▶ Causes :
- ▶ Inadequate suturing method
- ▶ Excessive bone which allows stretching of the mucosa (local factor).
- ▶ Inadequate flap design. (local factor)
- ▶ Local factors include tooth form or occlusion, as well as soft tissue changes such as ulcerations or pericoronitis
- ▶ Occupational factors for professionals such as physicians, dentists, athletes, and precision workers may lead to parafunction, as well as for the seamstress or musician who develop altered oral habits (involuntary movements of the tongue and lips)



Wound dehiscence

- ▶ Prevention of wound healing dehiscence:
 - ▶ 1. Use aseptic technique
 - ▶ 2. Perform atraumatic surgery
 - ▶ 3. Close the incision over intact bone
 - ▶ 4. Suture without tension
 - ▶ 5. Proper closure

Post operative bleeding

- ▶ Primary (at the time of surgery)
- ▶ Reactionary (persistent till few hours after surgery)
- ▶ Secondary (upto 14 days post operatively)!! Further investigations needed
- ▶ Causes of bleeding post operatively
- ▶ Systemic vs local factors
- ▶ Treatment: depending on the onset.

Pain & Edema

- ▶ Pain is expected after extraction
- ▶ Sever intolerable pain must be assessed.
- ▶ Causes of pain and edema
- ▶ Medications
- ▶ Traumatic extraction

Pain & Edema

- ▶ 1- Incomplete extraction a tooth, periapical lesion or abscess.
- ▶ 2- Laceration of the soft tissues.
- ▶ 3- Exposed bone.
- ▶ 4- Infected sockets.
- ▶ 5- Damage to adjacent teeth or to its supporting structures (PDL).
- ▶ Is Post operative edema a normal physiological phenomena?

Trismus

► **Causes:**

1- Spasm of the masticatory muscles (mainly medial pterygoid) due to injury caused by a repeated needle injections during inferior alveolar nerve block.

2- Mechanical restriction from the swelling, especially when the procedure is difficult and lengthy, with more trauma to the surgical field, accordingly post-op inflammation and edema will be more intense.



Limitation of mouth opening

Trismus

- ▶ Trismus (unable to open the mouth completely usually after 24 hours of extraction)
- ▶ Muscular spasm
- ▶ Muscle of mastication being affected due to lengthy procedure
- ▶ Infection to the muscles
- ▶ Medications depending on the cause of trismus
- ▶ Warm therapy (pack), analgesics, physiotherapy, warm pack after 24 hrs of extraction after ruling out infections.

Sharp bony spicules

- ▶ It occurs more with the mandibular posterior teeth than maxillary posterior teeth, due to the dense bone, especially if the extractions are difficult and traumatic.
2- The sharp bone edges injure the soft tissues of the socket, or the tongue resulting in severe pain and inflammation.
- ▶ **Note:** A common area of exposed bone after tooth extraction is the internal oblique ridge (mylohyoid ridge). After extraction of lower posterior teeth, during the initial healing , the lingual flap becomes stretched over the internal oblique . Occasionally the bone perforates through the thin mucosa causing a sharp projection of bone in the area.

Sharp bony spicules

- ▶ After few days of extraction.
- ▶ Prevention is by checking the extraction socket after removal of the tooth immediately whether it need bone smoothing or not.
- ▶ Treatment by smoothing of the sharp bony part, irrigation and suture again.
- ▶ (flap might be raise if the bone exposed is away from the socket itself like the in the post third molar extraction (mylohyoid line)

Sharp bony spicules

- ▶ **Treatment:**



- 1-** It is treated with smoothing of the bone margins of the wound, especially the intraradicular bone.



- 2-** Sometimes if the irritation from the sharp bone is low, we can leave the projection to heal without treatment since the exposed bone will slough off in 2-4 weeks.



- 3-** Analgesics should be prescribed.

Ecchymosis and Hematoma

- ▶ Ecchymosis is a type of hematoma, occurs when blood leaks from a broken capillary into surrounding tissue under the skin. This causes discoloration. As the tissue heals, the area of ecchymosis may change from purple or blackish blue to yellow or green. Ecchymosis will typically take between 1 and 3 weeks to resolve.
- ▶ Blood oozing in the submucosal or subcutaneous tissues
- ▶ Assure the patient
- ▶ It can happen in endodontic treatment as well.

Ecchymosis and Hematoma

ECCHYMOSIS AND HEMATOMA

- Mild ecchymosis especially in elderly patient with increased capillary fragility and poor tissue elasticity
- Extensive ecchymosis and hematoma formation result from improper hemostasis during surgery

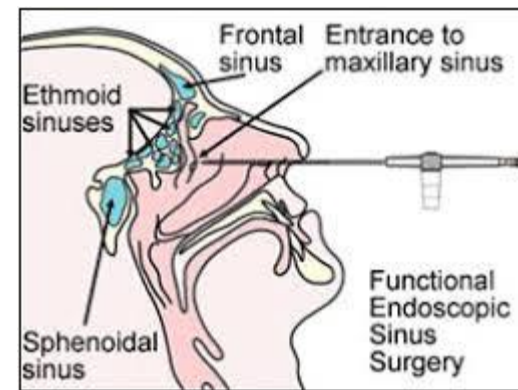


Ecchymosis and Hematoma

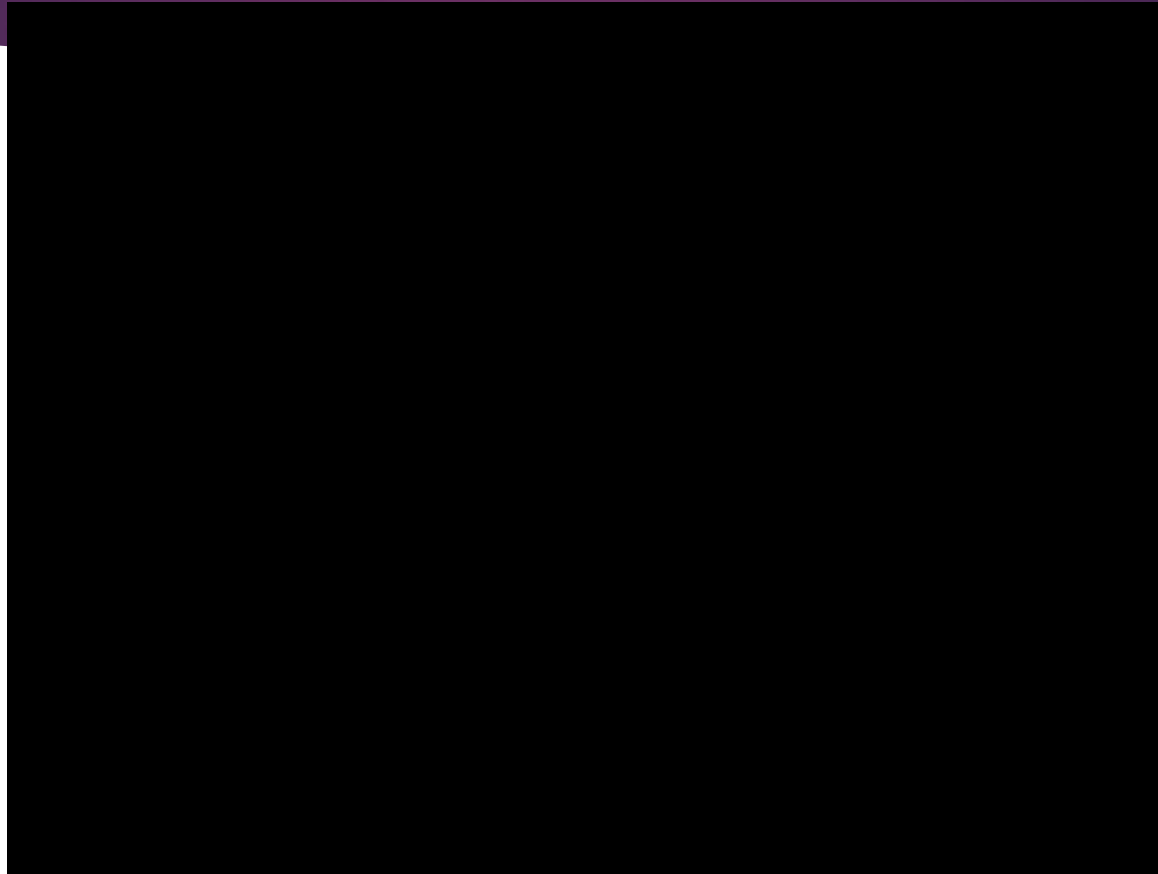
- ▶ No particular treatment is required. The patient should be informed that it is not a serious situation and that ecchymosis gradually subside within a few days, with color changing during the process of resolution.

Oro antral fistula

- ▶ Oro antral fistula: is an oroantral communication which has been left untreated. Which causes lining of epithelium in the side of the communication that needs surgical detriments and closure.
- ▶ Causes maxillary sinusitis and may need a consultation with an ENT.
- ▶ Antral wash /FESS
- ▶ Nasal decongestant
- ▶ Antibiotics
- ▶ Analgesics



OROANTRAL FISTULA TREATMENT



Cavernous Sinus Thrombosis

- ▶ Cavernous Sinus Thrombosis CST: is a rare disease, but the mortality rate remains high, even after the breakthrough of antibiotics and advanced imaging techniques. Unethical practices by unregistered practitioners and a lack of awareness of dental health in rural areas can lead to severe life threatening complications of dental infections.
- ▶ Angular and ophthalmic veins, teeth, maxillary sinus, and cervical vertebrae through the pterygoid plexus emptying into the inferior ophthalmic vein. (emissary veins).
- ▶ Mortality rate from cavernous sinus thrombosis (CST) is effectively 100%

Cavernous Sinus Thrombosis

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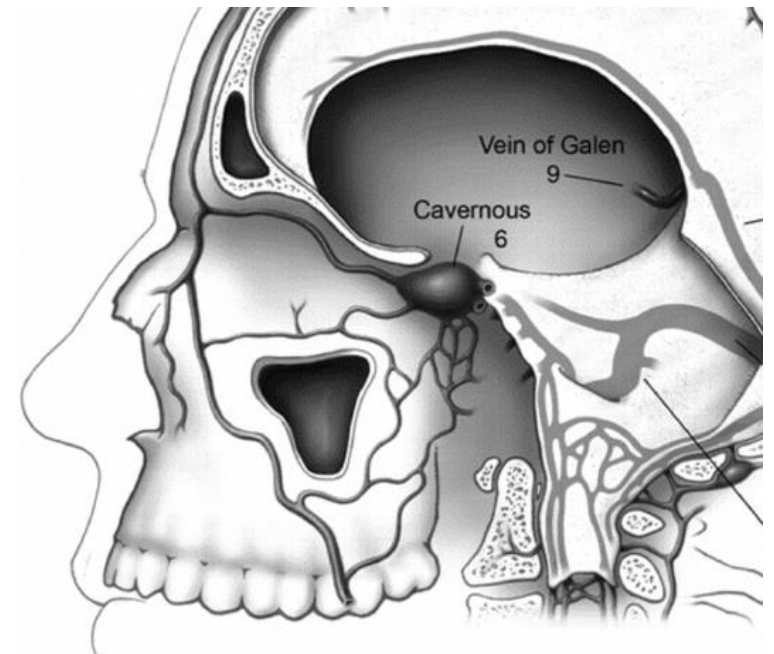
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Cavernous sinus thrombosis following dental extraction: a rare case report and forgotten entity

[Karun Aggarwal](#),¹ [Sanjay Rastogi](#),² [Atul Joshi](#),³ [Ashish Kumar](#),⁴ [Archana Chaurasia](#),³ and [Rajat Prakash](#)³

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Summary

- ▶ Prevention
- ▶ Sterile aseptic techniques.
- ▶ Atraumatic extraction must be performed
- ▶ Knowledgeable & Skillful management and **don't panic!!!**
- ▶ Inform the patient and explain the anticipated management and sequelae.
- ▶ Follow up
- ▶ Informed consent form.



End of complications of exodontia

Thank you very much

Good Luck