Chapter 18
DENTAL EMERGENCIES

Learning Objectives:

- To recognize some of the basic common dental emergencies and be able to manage before discharging.
- To be able to refer the patients to general dental surgeons and specialists.

INTRODUCTION

Any **dental** problem that requires immediate treatment in order to save a tooth, stop ongoing tissue bleeding, and facial fractures or alleviate severe pain is considered a **dental emergency**. A severe infection or abscess in the mouth can be life-threatening and should be dealt with immediately.

ACUTE PULPITIS

History: spontaneous, intense, sharp pain lasting longer periods of time

Examination

- look for a source of pulpitis (e.g. caries, fractured tooth or restoration), which might have referred pain and/or may be of periodontal origin.
- Regional– particularly submandibular – lymphadenopathy tender on palpation

Management

- Analgesics– Combination of NSAIDs and Paracetamol.
- Follow up with Dental Surgeon.

ACUTE PERIAPICAL DISEASE (ALVEOLAR ABSCESS)

History: localized throbbing pain. May have facial swelling/ history of facial swelling and/or fever.

Examination:

Identifiable source of pulpal disease. May be tender on direct finger palpation of the vestibule or presence of swelling in the vestibule (that can be fluctuant and painful), inflammation, fever and/or regional lymphadenopathy**.**

Management:

- Incision and drainage on the vestibule and insert a drain.
- Open the pulp chamber and open dressing.
- Drainage either through the pulp chamber or by incision and drainage of the vestibule. Antibiotics (e.g. penicillin VK 500 mg QID, amoxicillin 500 mg tds, or for penicillin-allergic patients, clindamycin 250–300 mg QID) and analgesics.
- Follow up with dental surgeon in 3- 4 days.

ODONTOGENIC INFECTION

Causes dental caries causes spread of bacteria to pulp leading to pulpitis leading to chronic localized abscess.

Pericoronitis:

Partially erupted third molar with operculum causing impaction of food and infection especially space infection.

Clinical features: swelling soft and mild tenderness and doughy in consistency in 1-3 days. Between 5-7 days, center softens and fluctuant. Resolution of abscess spontaneously or after drainage.

Periapical abscess:

It’s confined to periapical region beyond the apex of root and localized at the site.

Dentoalveolar abscess:

Infection beyond the alveolar bone and involving the adjacent tissues into the vestibular space.

Cellulitis:

Diffuse, nonsuppurative inflammatory reaction involving fascial tissue planes. Can involve face and orbit. All the spaces submandibular region.
Clinical features: Acute onset (within 3 days), fever, malaise, swelling which is painful and tender. Regional lymphadenopathy.

Osteomyelitis:

Inflammation of the medullary portion of the bone and necrosis of viable amount of bone.
Clinical Features:

- deep intense jaw pain
- intermittent fever
- abscess
- Paresthesia/anesthesia
- Diffuse swelling and loosening of tooth.
- Trismus

SEQUELAE: Odontogenic infection–space infection-septicemia

Management:

- Assess disease severity and systemic state.
- Emergency surgical or medical intervention.
- Decide to admit or treat as outpatient.
- Pus Culture and sensitivity (CS).
- Antibiotics empirically and change if necessary, as per culture report.
- Incision and Drainage.
- Systemic medical evaluation - fever, chills, shaking and malaise – or of confusion and clouded consciousness (‘delirium’) in an elderly person– indicates that complete systemic evaluation is warranted.
- Evaluate host’s immune system.

Indications for hospitalization:

- Systemic involvement: fever, dehydration requiring parenteral fluids and nutrition.
- Evidence of spreading tissue necrosis or cellulitis involving critical areas such as periorbital region and areas with potential airway compromise (sublingual, submandibular and/or parapharyngeal spaces).
- Immune system compromise: HIV, diabetes, steroid therapy, alcoholism, cancer chemotherapy.
- Nutrition -Patients unable to maintain their dietary and fluid intake should receive IV maintenance fluids.
- Patients unable to eat for longer than 48 h should be considered for nasogastric feeding.
- Culture and sensitivity (C&S) testing - these resistant to initial treatment), consider sending cultures for C&S.

Antibiotic therapy:

- IV antibiotics ceftriaxone 1 gm 12 hourly, IV metronidazole 400mg 8 hourly.

- Orally: Cap amoxicillin 500 TDS, or for penicillin-allergic patients, clindamycin 250–300 mg QID and / metronidazole 400mg TDS.

Analgesics: Brufen,PCM, Inj Voveron.

- Diagnostic imaging studies like CT and ultrasound are used in cases of deep fascial space infections, rapidly spreading infections and infections impinging on vital structures such as the airway.
- Culture and sensitivity testing,
- Complete blood count (CBC)
- Refer to Dental Surgeon for removal of cause and incision and drainage if necessary.

LUDWIG'S ANGINA

- General symptoms such as pyrexia, weakness, and fatigue.
- Bilateral suprahyoid swelling which is hard and painful on palpation.
- Difficulty in swallowing, breathing, chills and fever.
- Increased salivation and restricted tongue movement.
- Early presentation has no suppuration and firm and brawny and non-fluctuant swelling-submandibular and submental regions.
- Raised tongue due to edema of sublingual tissues.
- Airway obstruction.

Management:

- Immediate referral to higher centers.
- Surgical Incision and drainage
- Intubation or tracheostomy may be required.
- An urgent oral surgeon and ENT consultation.

BLEEDING

Bleeding from an extraction or surgical extraction site.

- Identify the site of origin:
  - ✓ Bony wall of the socket.
  - ✓ Soft tissue around the socket.
  - ✓ Ggranulation tissue left in the socket.
  - ✓ Generalized oozing from all areas.

Management:

- Inquire about the drug history of the patients and note if any medications that may impair coagulation.
- Also inquire about compliance with postoperative instructions.
- Examine for obvious bleeding vessels in or around the site. If visualized, electrically coagulate or ligate with resorbable suture, under local anesthesia.
- Inject local anesthesia with a vasoconstrictor, debride, irrigate the socket and examine closely for specific areas of bleeding. Apical or non-isolatable bleeds should be packed with hemostatic gel.
- Iinitial management should always be direct pressure by biting on gauze under observation for 20 mins. If this fails, a gauze impregnated with liquid topical thrombin or the antifibrinolytic syrup, epsilon aminocaproic acid (Amicar) or 5% tranexamic acid, can be tried for an additional 20 min.

- When local causes have been ruled out, appropriate laboratory tests should be ordered. This includes a complete [full] blood count (CBC) with differential and platelet count, prothrombin time (PT) and international normalized ratio (INR) and partial thromboplastin time (APTT). If abnormalities are detected, medical consultation is indicated.
- Instructions: when the bleeding is controlled, the patient should be given careful verbal, and preferably written, instructions to decrease risk of recurrence.

POSTEXTRACTION PAIN

Normal pain: begins soon after surgery and remains constant or improves slowly with time (varies from patient to patient).

Management:

Reassurance, observation and analgesics as indicated. Refer to dental OPD.

Alveolar osteitis:

Pain remains constant or initially improves after surgery, then suddenly increases after 3 or 4 days. Much more common in the mandible than the maxilla. Often radiates to the ipsilateral ear. The examination will only show loss of the clot from the socket and foul odor is common.

Management: gentle irrigation of socket to remove debris and placement of a sedative dressing (e.g. Eugenol on 1" × 1⁄4" strip gauze or Alvogyl®). This should be left for 4–5 days. Replacement during that period should be carried out at any time the patient feels the pain return. Analgesics should be prescribed.

Localized infection:

Usually presents a few days to a few weeks after surgery. Physical examination reveals signs of inflammation and infection. May see purulence and there might be an elevated white blood cell count and fever. Palpation of the area will be acutely painful.

Management: antibiotic therapy (e.g. Amoxicillin 500 mg TID for 5 days). Socket infections are treated with antibiotics and incision and drainage as necessary.

Fractured buccal plate:

Palpation over socket, usually buccal, will reveal tenderness and possibly crepitus.

Management: Identify and remove bone fragment, irrigate and suture.

DENTAL AND DENTOALVEOLAR TRAUMA

A brief but comprehensive assessment of the overall patient should be made.

History: nature and time of the injury, other possible secondary injuries and any pre-existing dental problems (e.g. malocclusion, previous dental trauma).

Examination:

Should include a rapid, but adequate, general examination and detailed head and neck and oral examinations.

Note any alteration in dental occlusion from the patient's stated normal as evidence of displaced teeth, dentoalveolar fracture or facial bone fractures.

Management: Account for all the teeth. Could be aspirated, swallowed or displaced into the soft tissues or sinuses.

- Appropriate radiographs (soft tissue neck, PA and lateral skull, chest X-ray and/or flat plate of the abdomen) should be ordered to localize the fragments.
- Perform a thorough search for any foreign bodies, teeth fragments or debris in the soft tissues of the lips or floor of the mouth.
- Refer to Dental Surgeon for further management.

Subluxation:

The tooth is in the socket but shows greater than physiologic mobility after trauma.

Management:

- If mobility is mild, a soft diet and occlusal adjustment to take the tooth out of occlusion are often sufficient.
- If mobility is moderate to severe, refer to dental surgeon immediately for splinting

Intrusion:

Tooth is pushed further into the socket following trauma. This means that the tooth may have perforated the buccal or palatal plates, or has perforated the floor of the nose or sinus.

Management:

- Refer to dental surgeon.

Partial extrusion:

The tooth is partially avulsed or otherwise displaced in the socket.

Management:

- Digitally manipulate the permanent tooth back into the socket as soon as possible. Place one finger over the apical region to help.
- prevent lateral perforation.
- Refer to dental surgeon immediately for splinting.

Avulsion:

The tooth has been totally displaced out of the socket.

Management:

- The treatment and prognosis are extremely time dependent.
- Teeth implanted within 30 min have a good chance of surviving.
- Milk in an emergency, are satisfactory storage media if the tooth cannot be stored in the patient's buccal sulcus.
- If dirty, the tooth should be grasped by the crown and rinsed gently in saline, tap water or at the scene of the injury. Do not scrub off, brush the tooth or handle the root.
- Immediately place the tooth back in the socket and hold in place with light pressure. There is no need to physically debride the socket prior to replacement. Gentle saline irrigation will remove debris.
- Do not replant primary teeth.
- Consider tetanus prophylaxis
- Refer immediately to dental surgeon for splinting.

TEMPOROMANDIBULAR JOINT DISLOCATION

Specialized joint-movement of condylar head in front of the articular eminence and inability to descend bck to normal position. Is debilitating condition of the facial skeleton.Can be acute and chronic. Partial subluxation or complete luxation, bilateral/unilateral.

Causes: Alteration of neuromuscular function due to laxity of articular disc and capsular ligament, long standing internal derangenent and spasm of lateral pterygoid muscles. Wide opening of mouth, yawning, dental treatment-wisdom tooth extraction.
Cinical features: Open mouth, speech drooling of salivapain in preauricular region and unilateral-deviation of chin.

Management:

- Patient should be seated comfortably preferably below the elbows of the clinician
- Stand in front of the patient. Place thumbs bilaterally along external oblique ridges/ molars and other fingers wrapped externally around the mandible.
- Gently, push downwards. At the same time, the chin should be elevated with the fingers and the entire mandible should be pushed posteriorly.
- consider muscle relaxant (diazepam).
- Dont apply too much force can farcture the mandible.

MAXILLOFACIAL TRAUMA

Basic Principal in management of maxillofacial injuries:

- Immediate assessment and stabilize the patient.
- Intra oral examination: look for loose dentures, teeth, blood clots and clear the cavity and use suction to remove debris, clots etc.
- To remove the saliva, blood to clear the airway.
- If airway is compromised have to make sure the patency is maintained by chin lift maneuver and remove the foreign bodies, clots etc.
- Avoid hyperextension/hyper flexion to prevent the risk of cervical injuries and support with cervical collar etc. And rule out cervical injuries-x-rays.
- If patient is unconscious and unable to maintain the airways then definitive airway management-tracheostomy.
- Hemorrhage control-direct pressure.
- Soft tissue repair under LA.
- Refer to higher centers.

Facial fractures:

- Mandible fractures- symphysis, body, ramus and condyle. Simple and compound.
- Maxilla- Lefort 1, Lefort II, Lefort III and IV.
- Refer to higher centres.