

Complications of Exodontia

Complications of extraction

1. Fainting (syncope)

2. Fracture of:

A. crown and root

B. alveolar bone

C. maxillary tuberosity

D. adjacent or opposing tooth

E. mandible

3. Dislocation of the temporo-mandibular joint (TMJ)

4. Bleeding

5. Damage to the:

A. Gingiva and lip

B. Post-operative pain

6. Post-operative swelling

7. The creation of oro-antral fistula

8. Trismus

1. Fainting (Syncope):

Collapse in the dental chair may happen during extraction of teeth. The patient may feel dizzy, weak, and nauseated, and the skin is pale, cold and sweating. These conditions may be accompanied by loss of consciousness, and the patient – if not observed at the beginning of the fainting - may show an episode of convulsion. When the operator notices these signs and symptoms a first aid treatment should be started by lowering the head of the patient by putting him in supine position by lowering the back of the dental chair. Care should be taken to maintain the airway, and to notice the condition of the patient if the consciousness is returned back within 1-2 minutes otherwise one should consider that the case is serious, like cardiac arrest, or respiratory arrest may happen and the patient needs medical emergency treatment.

2. Fracture of the:

- A. Crown and roots of the tooth
- B. Alveolar bone
- C. Maxillary tuberosity
- D. Adjacent or opposing tooth
- E. Mandible

A. Fracture of crown and roots:

The most common complication during tooth extraction is fracture of the tooth crown or roots.

The factors that may lead to fracture of the crown or roots may be classified into three groups:

Factors related to the tooth itself.

Factors related to the bone investing that tooth.

Factors related to the operator (dentist)

Factors related to the tooth itself means that the tooth may be badly carious, or heavily filled, brittleness of the tooth due to age, or non-vitality of the tooth, root canal filled tooth, peculiar root or crown formation like dilacerated tooth, geminated tooth, severely curved accessory root, and complex root shape, malposed tooth, insufficient space for the application of extraction instrument, and internal and external resorption of the tooth or root.

Factors related to the bone means the surrounding bone might be excessively dense due to localized or systemic causes.

Factors related to operator (the dentist) include improper application of the beaks of the dental forceps or elevator on the tooth to be extracted like placement of the beaks of the dental forceps on the crown instead of the root or below the cemento-enamel junction, or the beaks are not parallel to the long axis of the tooth, or the use of wrong forceps. Incorrect application of force during extraction by wrong direction in addition to that the use of twisting or rotational movement when not indicated as the use of twisting movement for extraction of the upper 1st premolar or upper 1st and 2nd molar.

B. Alveolar bone fracture:

Fracture of alveolar bone frequently occurs when extraction is difficult. The fractured tooth may be removed with tooth to which it is firmly attached to the periosteum or it may be completely detached in the socket or extraction wound.

It is a common complication that especially occurs on labio=buccal area during extraction of upper canine and upper and lower molars.

This complication might be due to:

- The alveolar bone is very thin.
- Accidental inclusion of the alveolar bone within forceps blades
- Configuration of the roots
- The shape of the alveolus

- ❑ Pathological or physiological changes in the bone itself like ankylosis (bony communication between the tooth and bone), the presence of destruction in the alveolar bone due to the presence of discharging sinus.

C. Maxillary tuberosity fracture:

Sometimes the tuberosity is completely fractured when one tried to remove maxillary 3rd molar. Fracture of maxillary tuberosity may lead to a wide opening into the antrum called "oro-antral communication" with irregular tearing in the covering soft tissue lead to profuse bleeding and postoperatively may lead to difficulties in the retention of upper denture.

This complication might occur if the molar tooth to be extracted is isolated and subjected to full force of bite leading to sclerosis of the surrounding bone, or due to downward extension of the maxillary sinus to the nearby edentulous alveolar bone or due to large abnormal size of the maxillary sinus extended to involve the maxillary tuberosity. In addition to that the use of excessive force or wrong positioning of elevator for the extraction of the upper 3rd molars.

D. Fracture of the adjacent and opposing tooth:

Adjacent teeth occasionally may be damaged during extraction procedures, this may include loosening of the dental forceps or elevator by wrongly using the adjacent tooth as a fulcrum during the use of elevator or the application of beaks of the dental forceps, also fracture of the crown of adjacent tooth or fracture and dislodgement of its filling.

In addition to that opposing teeth may be chipped or fractured if the tooth being extracting yield suddenly to uncontrolled force of the dental forceps striking the opposing tooth leads to this complication.

E. Mandibular fracture:

This is a very rare complication, but it might occur almost exclusively with the surgical removal of impacted teeth.

A mandibular fracture is usually the result of the application of a force exceeding that needed to remove a tooth and often occur during the

use of dental elevators, but sometimes pathological or physiological changes may lead to weakening of the mandible as:

- Senile atrophy and osteoporosis of the bone.
- Osteomyelitis and osteoradionecrosis.
- Cystic lesions.
- Impacted teeth.
- Tumours(malignant or benign).

5. Dislocation of the temporomandibular joint (TMJ):

Exertion of high amount of force during extraction of lower teeth especially posterior teeth may lead to dislocation of the condyle of the mandible in patient who had a history of recurrent dislocations of TMJ.

If dislocation occurs it should be reduced immediately by the operator by standing in front of the patient and his thumbs placed intra-orally on the external oblique ridge lateral to the molar teeth and other fingers outside the mouth under the lower border of the mandible. Apply downward pressure with the thumb and then upward movement with other fingers to reduce the dislocation. If dislocation is delayed it become difficult to reduce it because of muscle spasm and the patient may need general anaesthesia to reduce the dislocation, and the patient may complain of traumatic arthritis of the TMJ postoperatively due to high pressure applied to the joint during extraction, hence supporting the mandible during extraction prevents such complication.

6. Bleeding after extraction:

Some slight oozing of blood for several hours following tooth extraction is to be considered normal. But sometimes excessive or abnormal bleeding may be due to :

Local factors.

Systemic factors.

The local causes which are the commonest causes for prolonged bleeding as in usually due to gross tissue damage, when there is severe bone injury and tearing of the periosteum many vessels are opened also severe gingival laceration, also damage to large arteries like inferior dental vessel or greater palatine vessels may lead to profuse bleeding, also the presence of haemangioma (central) and other vascular abnormalities may lead to such complication. The postoperative infection of the extraction wound causing erosion of the blood vessels will lead to secondary haemorrhage, and the work in an acutely inflamed area may assist in the prolonged bleeding.

7. Injury to the :

- Gingiva and lip
- Tongue and oral mucosa
- Nerves
- ❖ **Injury to the gingiva** as ulceration during extraction of teeth occur if the gingival tissue had not been reflected before extraction and the gingiva adheres to the tooth should be dissected carefully before delivering the tooth from the socket, also the inclusion of the mucosa by forceps beaks or by blind application of the forceps may lead to crushing of the soft tissue , also the lower lip may be crushed between the handle of the forceps and on extraction of upper teeth if sufficient care not been taken.
- ❖ **Slipping of elevator** during extraction may lead to injury or wound in the floor of the mouth, and injury to sublingual salivary gland, submandibular duct, lingual nerve, and the tongue. Holding of the elevator with good support will obviate this sort of injury.
- ❖ **Injury to nerves** occur mostly during surgical removal of teeth, and the operator should be aware of the risk when operating in the region of the nerves (inferior alveolar nerve, lingual nerve, and mental nerve). Inferior alveolar nerve injury is an uncommon in extraction

of impacted mandibular molars. Rarely the root of the wisdom tooth may encircle the inferior alveolar nerve so that extraction of this tooth will result in in nerve injury.

8. postoperative pain:

Postoperative pain and discomfort may be due to traumatizing hard tissue (bruising of bone) during instrumentation or using bur to cut bone.

Dry socket (or acute localized osteitis) is uncommon complication of extraction of teeth may be presented as continuous moderate to severe pain started after 24 to 72 hours after extraction which may last up to 7 days , is due to destruction of the clot of the socket as a result of patient ignorance. The patient attended the clinic with empty socket, exposed bone and food debris in the socket.

9. Postoperative swelling:

After extensive surgical intervention there may be postoperative swelling. This may be due oedema, infection, or haematoma.

10. The creation of oro-antral fistula:

In some cases of extraction of the upper molar teeth or sometimes the upper premolar teeth a communication between the oral cavity may be produced. If you suspect the creation of the fistula ask the patient to pinch the nostrils of the nose and blow air gently to see air bubbling through the opening. This is called oro-antral fistula. The logical reaction is that to close the socket of the tooth by suturing.

11. trismus:

Trismus means inability to open the mouth easily and properly, and it may result after extraction of teeth especially surgical removal of lower wisdom teeth.