Implant Related Complications

Classification of Implant Complications

- While implant is being placed: intra operative complications
- After the implant is placed: post operative complications

1)Immediate
2)Late

DOCTOR MUST BE INFORMED WHENEVER PATIENT EXPERIENCES ANY OF THESE COMPLICATIONS.

Please note: The cost of management of complications (if any) is not covered in the treatment charges.

In case of pregnancy, patient must inform the doctor.

- Medicines usually prescribed for implant procedure are:

a. Prophylactic antibiotic coverage: like Augmentin Duo(Brand name)
b. Non steroidal Anti inflammatory drugs: like Combilfam, Ketorol DT(Brand name)
c. Anti Swelling: like Chymoral Forte(Brand name)
d. Good bacteria: like Vizylac(Brand name)

In case, patient is allergic to any of the above medicines or has a history of any allergic reaction, it is important that the patient informs the doctor about it.

Intra-operative Complications

1. Hemorrhage : Escape of blood from ruptured vessel
(Chances minimal, mostly manageable)
Treatment consists of eliminating the causes of bleeding and implementing the normal procedures to promote hemostasis (Stop the blood flow).

2. Nerve injury (1.7 to 43.5% chances - for temporary alterations and from 5% to 15% chances - for permanent alterations over one year after surgery .) Only two cases of nerve injury have been observed over last 15 years, both recovered. We have 3 D X Ray to minimize chances of nerve injury.
(Chances minimal, mostly manageable)
Nerve trunk injuries may be treated medically or surgically depending on the extent of the pathological alterations and the neurological symptoms reported by the patient. In the immediate postoperative period combination drug therapies with NSAIDs, cortisones, proteolytic enzymes, antibiotics, and vitamins (C and E) are administered to reduce compression of the nerve trunk, to prevent the development of infections.

3. Perforation of maxillary or nasal sinus (2% to 11% is the chances for occurrence)
(Chances minimal, mostly manageable)
There is broad consensus that perforations of the mucoperiostium (lining of sinus) do not require treatment since tight closure of the flap is important for healing and Osseo integration of implant.
4. Jaw fracture (Chances minimal, mostly manageable)
Fractures with only numbness of the fractured area will be treated with antibiotic therapy and a soft diet. The patient will be kept under observation since healing is usually uneventful. Complex fractures require reduction(alignment of fractured segments) and immobilization of the fractured segment to restore mandibular shape and function.
5. Damage to adjacent hard and soft structure (Chances minimal, mostly manageable)

It is important for the attendant to check for any blood spots (sign of continued bleeding) around the mouth and bed of the patient after the patient has slept, for 1-3 hours, on the day of surgery. If there is any sign of swelling, or even the slight increase in size of swelling, or fever, it should be reported to the doctor immediately.

Post-operative Complications

- Immediate postoperative complications

Any of the following may occur alone or in combination:

1. Hemorrhage: Escape of blood from ruptured vessel (Chances minimal, mostly manageable)

Treatment will consist of eliminating the causes of bleeding and implementing the procedures to promote hemostasis (stopping flow of blood).

2. Ecchymosis: discoloration of skin due to underneath bleeding and Hematoma: swelling due to collection of blood. (Chances minimal, mostly manageable)

Topical skin applications of heparin-containing medications will help them resorb. If there is a recent hematoma between the bone and the flap, it should be drained and external compression will be applied on the soft tissues to avoid relapse.

3. Edema: swelling due to collection of watery fluids (Chances minimal, mostly manageable)

Atraumatic surgical techniques minimizing tissue damage, the application of ice packs and the administration of corticosteroids will prevent or limit edema after implant surgery.

4. Emphysema: abnormal collection of air in body tissues (Chances minimal, mostly manageable)

Massages and compression with ice packs will help resorb the air entrapped in the tissues thus leading to fast and spontaneous regression of the emphysema.

5. Early infection (Chances minimal, mostly manageable)

Besides a sterile working area and a clean environment, an aseptic protocol includes disinfection of the skin with solutions containing povidone-iodine and alcohol, and cleansing of surgical gloves in sterile saline to remove dust or contaminants. Further preventive measures are the administration of antibiotic therapy before and after the procedure.

6. Due to improper technique:

- ✓ Damage to adjacent teeth
- ✓ Osseous perforations
- ✓ Insufficient primary stability
- ✓ Minimal space between implants or adjacent teeth

  Careful clinical and radiographic examination of each case, accurate planning of procedures, the use of proper surgical techniques and appropriate instruments and the correct management of healing and osseointegration (adhesion to the bone) all concur in preventing such events.

▶ Late post-operative complication

1. Implant screw fracture (Chances minimal, mostly manageable) (Risk of fracture of implant screw is 1% and abutment screw is 2% respectively.)

Implant screw fracture and loosening can be reduced if certain strategies are followed. These include careful treatment planning, and routine follow-up appointments. Fracture of implant screw may sometimes not be correctible and may require to be sacrificed and either an implant is to be placed or some other methodology to be used to give a restoration.

2. Chronic sinusitis (Chances minimal, mostly manageable)

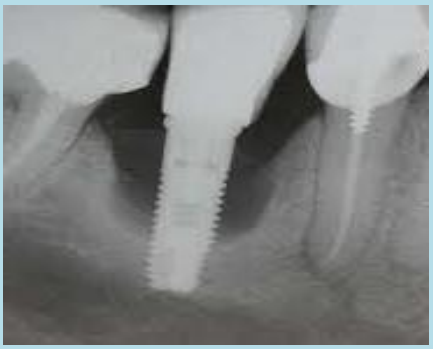
Treatment of sinusitis includes drug therapy with antibiotics, chlorhexidine mouthwashes, irrigations with saline through the nasal orifice, and the use of nasal decongestants.

It is important to get the implant loaded (crown placement in Stage 2) after implant is placed in Stage 1 , as and when the doctor advices, failing which causes complications like migration of adjacent teeth o fill in the gap.

3. Chronic pain (Chances minimal, mostly manageable)

4. Late infection (Chances minimal, mostly manageable)

If there is no bone involvement, a flap will be elevated and reflected to remove infection. Sterile saline will be used to irrigate the area and local antibiotic treatment will be administered.



Postoperative antibiotic therapy in both cases of bone involvement or not is advised. The patient will be instructed to maintain accurate oral hygiene with chlorhexidine rinses.

5. Peri-implant pathology (Chances minimal, mostly manageable)

They include local debridement, local antimicrobial delivery and regular follow ups.

6. Screw loosening (0.62% to 2.29% is the frequency for occurrence) (Chances minimal, mostly manageable) . Some people have more chance of screw loosening as compared to others.

If a patient observes the crown over the tooth is mobile, it is important to visit the doctor and inform about it. Regular check up is mandatory as and when advised.

7. IMPLANT FAILURE

Failures were defined as the removal of the **implant** or **tooth**. Investigators found two failures of the 129 **dental implants** for a success rate of 98.4 **percent**.

Failure rate for implants is 2-5%. Risk factors for implant failures:

1. Dentist related
2. Implant related: Implant material and surface
3. Host/ Patient related: Bone quality and quantity, smoking, parafunctional habits, systemic factors, age.

Implant failure can be at two stages:

a. When implant is placed: The possible reason is bone is not adhered to the implant. Risk factors that come into play are 1 and 2.
b. After few years of implant placement: Mainly due to risk factor 3.

If you are a diabetic or a smoker, then life of implant is substantially compromised.

Management of implant failure:

Patient is advised to report to the clinic as soon as he/she observes an unusual change in the implant. Regular check up once every 6 months to 1 year with radiographic examination to check osseointegration is critical.

Debridement in combination with antimicrobial therapy have the greatest success in treating failing implants.

Early detection and intervention seems important for success.

- Over last 15 years, implants have been successfully placed at Zental with no discomfort to the patient and were functionally stable in follow up of 7-10 years.
- **EVERY SIX MONTHS, PATIENTS MUST VISIT THE DOCTOR FOR A CHECK UP. OTHERWISE IF THERE ARE ANY WARRANTIES, THEY WILL BE NOT VALID.**
- **Overall the chances of a complication are minimal, at the hands of an expert, but technically possibility always exists for a complication to happen. This is for your information only.**

Accidental Swallowing of foreign bodies : Grossman determined that if swallowed accidentally, 87% of foreign bodies entered the alimentary tract, whereas 13% aspirated into the respiratory tract. The literature also showed that although 90 % of ingested foreign objects could pass through the gastrointestinal tract uneventfully, there are roughly 10% that require endoscopic removal, while still 1% will ever require operation.

MANAGEMENT:

Clinical Retrieval: The oral cavity and oropharynx should next be examined under good illumination and if the object is visible, it should be retrieved with forceps or high-volume suction.

Observation and radiographic assessment:

Non-invasive emergency measures: Back blows, abdominal thrusts, Heimlick maneuver, CPR (Cardio Pulmonary Resuscitation)

Surgical intervention

HEIMLICK MANEUVER