
REVIEW ARTICLE

Impact of Asthma on Oral Health

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ABSTRACT

The loss of a tooth is always a traumatic experience from a functional and aesthetic point of view. Bone resorption and loss of gingival architecture in the edentulous area are the further consequence of tooth loss. There is the failure of dental implant placement due to inadequate bone support to hold the implant in primitive implant placement procedure, to overcome all these problems placement of immediate dental implants in the fresh extraction site is the choice of method of replacement of missing tooth by the prosthesis. The article aims to review the pros and cons along with its clinical indication and contraindication and also review the material and method used in the placement of dental implants.

Keywords: Immediate implants; biotype; bone resorption; fresh socket

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INTRODUCTION

To maintain proper mastication, digestion, phonetics, appearances, and psychological well-being's good oral health is important. Tooth loss affects the person both functionally and aesthetically that's why the patient seeks prosthodontic treatment. Congenitally missing, trauma, periodontal, dental caries are the cause of tooth loss. Sometimes systemic disease like endocrine disease and cancer are also the cause of tooth loss. [1] Various methods are available to replace the missing tooth it may be removable, fixed and dental implants, each type of prosthesis has its advantages and disadvantages. Nowadays most accepted method of replacing a missing tooth is a dental implant due to its strength and life span. In conventional dental implant procedure after extraction of compromised tooth wait for 2 to 3 months to heal the socket then start with the surgical procedure to place the implant in the socket and leave it again for 3 months for osseointegration then another surgery is required to expose the implant for the placement of the prosthesis. [2] In this procedure, the patient had to wait up to 8 to 10 months for the replacement of missing tooth. To reduce the period immediate implant technique comes into action. The therapeutic concept of the immediate dental implant was introduced by Scheult and Heimke in 1976. In 1989 Lazzare placed an implant at the time of tooth extraction along with postoperative instruction.

METHOD OF IMMEDIATE IMPLANT PLACEMENT

After the clinical examination and radiographic investigation start the antibiotic daily dose of 1.5gm of amoxicillin 4 days before the surgery and continue postoperatively for 10 days and patients allergic to penicillin prescribe clindamycin. After the extraction of the tooth with minimal damage to the surrounding structure carefully observe the fresh socket for any remaining granulation tissue. Remnants of the periodontal ligaments curetted from the socket wall and the socket are clean with normal saline in the socket, the osteotomy site is prepared with a depth of 3 to 5mm in which the implant achieves the primary stability. The implant size and diameter should be larger than the socket. The implant should contact the socket wall without putting any pressure on the socket and there should be no gap between the implant and socket. Close adaptation between the implant and socket permits osseointegration.

Osseointegration is defined as the "Apparent direct attachment and connection of osseous tissue to an inert alloplastic material without intervening connective tissue". If a gap present between the implant and socket to prevent epithelial migration use a bone graft in that place. After extraction, if four walls of the socket present and the gap is less than 1.5 mm present in between the implant and socket no need for a bone graft. If the gap is more than 1.5mm then bone grafting and a membrane used for the protection of the socket. A cover screw attaches to the implant after placement and the flaps were repositioned with nonabsorbable silk suture. Antibiotic and analgesic are prescribed to the patient postoperatively and advise the patient to maintain oral hygiene with chlorhexidine mouthwash. For follow up call the patient after three months.

MATERIALS USED IN DENTAL IMPLANT

The selection of implant materials depends on several factors such as mechanical properties, corrosion behaviour, cost, availability, biocompatibility and aesthetic appearance.[3]The materials that fabricated and placed inside a live structure to work as a substitute of tissue known as biomaterials, polymers, metal,ceramic, and natural materials are the four type of biomaterials.[4] Titanium and zirconia are the most used dental implant material, apart from zirconia as metal titanium is the choice of implant material due to its inert nature. The success of titanium implant material also depends on its design it comes in a two-part system that can solve the bone deficiency problem but zirconia comes as a single unit.it does not mean that titanium implant has no disadvantages, it has documented that sometimes titanium allergy seen in a patient with an allergic reaction to metal.[5] Both titanium and zirconia are reactive materials, on contact with fluid in the oral cavity it forms an oxide layer like titanium dioxide and zirconium dioxide at the interface between the metal and biological medium. Any damage in the dioxide layer causes corrosion of metal which affect the biocompatible nature of materials. [6]

INDICATIONS OF IMMEDIATE IMPLANT

Position of tooth relation with marginal gingiva, forms of the periodontium, periodontium biotype, tooth shape, osseous Crest position before extraction is the five diagnostic factors that should be analysed before selection of an immediate implant case. [7] The peri-implant aesthetic and the Predictable success rate of the immediate implant also depend on five of these factors. Out of the above diagnostic factors, biotype is the important factor that affects dimensions of periodontium including masticatory muscle and width.

Biotype is two types the thick biotype is biotype through which the periodontal probe not visible and the periodontal probe is seen through the thin biotype. [8] After surgical manipulation, the thick biotype due to its resilient nature causes the pocket formation and the thin biotype cause gingival recession. [9] Patient With thick biotype is the preferred patient for an immediate implant.

CONTRAINDICATIONS OF IMMEDIATE IMPLANT

Patients with thin biotype are not the choice of cases for an immediate implant due to its potential for more gingival recession and risk of exposure of metal margin of implant and buccal bone width undergo resorption. Different authors have a different view regarding the placement of the immediate implant in the chronic infection socket. According to Tolman and Keller immediate placement in the periapical lesion is contraindicated. [10] Implants in the periodontal infection site cause slower healing in the initial stage and no difference after 3 months according to Marcaccini *et al*. [11] Systemic disease like diabetes affect the immediate placement of implant due to faster bone resorption, maxillary sinus perforation also affect the immediate implant placement. History of periodontal disease and inadequate labial plate contraindicate the placement of the immediate implant, heavy smokers are also not the choice of the patient for an immediate implant. 4-class classification by Funato *et al* guides for the timing of implant placement. [12]intact buccal bone with thick biotype is the characteristic of class 1 which gives optimal result for immediate implant placement without flap reflection, in-class 2 presence of intact buccal bone and thin biotype with connective tissue graft procedure gives good result for the immediate implant, deficient buccal in class 3 gives with connective tissue graft and guided bone regeneration gives limited and accepted results, class 4 not indicated for an immediate implant due to lack of buccal bone. The classification guides for the selection of immediate implant cases. High dose irradiated patients, patient with haematological disorder, and medically compromised cases where surgery is contraindicated are the absolute contraindicated case for immediate implant placement and heavy smokers alcohol abusers, children below 18yrs and pregnant cases are the relatives contraindicated cases.

ADVANTAGES

In immediate implant placement post-extraction alveolar bone resorption is reduced which increases efficiency in terms of function and aesthetics, in conventional implant cases after extraction it takes 3 to 4 months for healing and bone remodeling but in the immediate implant as the name suggest immediately place the implant inside the fresh socket which decreases period and also decreases no of surgery. Psychological stress due to long team edentulous decreases by immediateimplant¹³. Improved prosthetic emergence profile, allow precise implant placement due to preservation of vestibular cortical component and preservation of peri-implant soft tissue. [13] Maintenance of vertical dimensions establishes the occlusion, increase the strength by increasing the masticatory force, Maintenance of proper retention and stability are also the advantages of the immediate implant.

DISADVANTAGES

It is a more technique sensitive procedure that demands a skilled team. Difficulty in the preparation of osteotomy site due to bur movement, inadequate soft tissue and unable to achieve the primary stability affects the success of immediate implant placement. Ankylosed tooth, buccal plate fracture, during extraction expansion of socket, and presence of infection affects the placement of the implant in the socket. Site morphology sometimes affects the placement and lack of keratinized mucosa affect flap adaptation. According to Wilson and Weber 1993 increase chances of infection due to membrane exposure. It is an expansive procedure so not affordable by all group of patients.

CONCLUSION

Based on the study of the present cases and study of the literature reveals that immediate implant placement is the choice of treatment for cases requiring early restorations. It requires an expert dental implant team. Its success depends on the selection of good cause, the presence of a healthy and good amount of bone apical to the periapical lesion. From the surgical point of view, the success depends on traumatic extraction with curettage of socket and establishment of primary stability. Implant with greater length and diameter than socket and implant with a flare neck which gives good bone and implant contact affects the success of the implant. Patient motivation follows up are also the important factors for immediate implant placement.

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