CLINICAL SECTION

Rehabilitation with an immediate implant followed by a connective tissue graft with one-year follow up: A case report

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Introduction

A female patient aged 18 years presented with a broken post and core of the upper left central incisor. An implant was placed into fresh extraction socket after atraumatic extraction of the tooth. After 3 months, a soft tissue deformity was noticed. To resolve the soft tissue deformity a connective tissue graft was placed over the implant. Prosthesis was delivered and the case has been followed since then without appreciable bone loss.

Utmost care needs to be taken to preserve the buccal cortical plate for the success of the implant and for better esthetics in cases where implants are placed into fresh extraction sockets.

Clinical relevance

With its numerous advantages placement of implants into fresh extraction sockets are viable alternatives to conventional implant placement.

CASE REPORT

Multiple protocols[1,2,3] are available for placement of dental implants. Routinely a waiting period of six to eight months is required following extraction of the tooth for implant placement. However, placement of implants into fresh extraction sockets is emerging as a viable alternative. Here is an illustration of a case of an implant being placed into a fresh extraction socket, which was followed by a connective tissue graft to enhance esthetics in the patient.

A female patient aged 18 years, reported to the dept of periodontology and implantology, bapuji dental college and hospital, davangere. She presented with a broken post and core of upper left central incisor **(Fig 1)**. Placement of an implant into fresh extraction socket was considered and procedure was narrated to her and an informed consent was obtained.

FIG 1: *Pre-operative view of broken upper left central incisor.*

FIG 2: *Pre-operative intra oral periapical radiograph of upper left central incisor.*

FIG 3: *Fresh extraction socket with all the walls intact.*

FIG 4: *Maestro dental implant (5 x 15 mm) being placed into fresh extraction Socket.*

Iopa (intra oral periapical radiography), opg (orthopantmograph) and ct (computed tomography) scan were taken. Iopa revealed a broken post and core with a healthy adjacent tooth **(Fig 2).** A dental implant of 5mm x 15mm dimension was chosen. Antibiotic premedication in the form of amoxycillin 500mg tid (thrice daily) was used 6 hours before the procedure, which was continued for five days. To avoid fracture of the buccal cortical plate only mesial and distal rotatory movements were used and tooth was extracted atraumatically **(Fig 3)**. Infected granulation tissue in the socket was curetted out.

Sequential drilling was done according to the guidelines of the implant manufacturer. The palatal cortical plate was taken as a landmark for all drilling purposes. A d3 (5mm x 15mm) implant was placed at a speed of 25 rpm **(Fig 4)**. Jumping distance

FIG 5: *After 3 months - soft tissue deformity is noted.*

FIG 6: *After connective tissue augmentation*

FIG 7: *After prosthesis placement*

FIG 8: *Intra oral periapical radiograph after one year without appreciable bone loss*

was found to be less than 2mm. So, regenerative therapy was not carried out. Primary closure was achieved through interrupted sutures. Diclofenac sodium 100mg bd (twice daily) was prescribed for pain relief.

Sutures were removed after one week and patient was followed at regular monthly intervals. At 3 months, a soft tissue deformity around the implant was noticed. The attached gingiva on the facial aspect of the implant was very thin **(Fig 5)**. A soft tissue augmentation procedure was considered to treat this soft tissue deformity. Resolution of the soft tissue deformity was noted after placement of the connective tissue graft **(Fig 6)**.

After 6 months prosthetic procedures were initiated. Impressions were made and crown was delivered **(Fig 7)**. She was followed for a period of one-year (iopa radiographs at three month intervals) without appreciable bone loss **(Fig 8)**.

Discussion

Immediate implants offer several advantages like reduced treatment time, reduced treatment cost, better angulation of the implant, better soft tissue aesthetics and also preserves bone around the site.

Preservation of the integrity of the buccal cortical plate is critical for the success of immediate implants. So care was exercised while extracting the tooth. Buccal and lingual movements were not done.[4] countersinking was avoided as the buccal alveolar plate was very thin, especially in the coronal area and using countersinking burs would have led to loss of precious bone in the cervical area.

Jumping distance or critical space is the distance between the implant and the walls of the socket.[5] regenerative therapy in the form of bone grafts or membranes is advocated only when the jumping distance is more than 2mm. Jumping distances lesser than 2mm heals by the regenerative capacity of the socket. In this case, during placement of the implant, some amount of crestal bone on the buccal surface was lost, which over a period of time (3 months) led to a soft tissue deformity. Recipient site was prepared by raising the flap over the implant on the facial surface and connective tissue graft was harvested from the palate and sutured over the area. Placement of connective tissue graft to resolve the soft tissue deformity was carried out before the initiation of the second stage procedures. This is essential because any soft tissue augmentation procedures after abutment is placed, leads to incomplete taking up of the graft.[6]

Conclusion

Immediate placement of implants into fresh extraction sockets is a viable alternative if the criteria for the case are satisfied. Utmost care should be taken to preserve the buccal cortical plate while extracting the tooth and even during subsequent drilling procedures. Any damage to the buccal cortical plate can lead to failure or compromise in aesthetics. Since it shortens treatment time, reduces cost and provides superior aesthetics, immediate placement of implants into extraction sockets should be considered.

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