

## IMMEDIATE VS DELAYED IMPLANTS

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### INTRODUCTION

The earliest possible restoration of form and function is the hallmark of all surgical specialities. The same principle underlies immediate implant placement.

**The advantages of immediate implant placement are:**

1. Treatment time is reduced
2. Amount of surgery is reduced
3. Width and height of alveolar bone is preserved
4. Ideal implant location can be achieved provided extracted tooth has desirable alignment.

As an adjunct to these, several others accrue- less surgical morbidity and better patient acceptance.

**The biological advantage is that the implant will prevent post surgical bone resorption**

Anatomically bone resorption occurs both buccolingually and apicocoronally and the first 6 months are critical carrying the highest rate of bone resorption in either direction.

Resorption of buccal wall of extraction sockets may lead to significant disadvantage especially in anterior maxilla. Due to Buccal concavity In alveolar process, an implant placed more lingually than adjacent teeth results in poor aesthetics. In addition with increased resorption incisive canal is positioned farther buccally which forces the surgeon to place implants replacing central incisors too close to the laterals. Eventually alveolar process becomes too narrow for implant placement. Therefore immediate implant placement is the best method to avoid these problems.

**Covani et al measured buccal to lingual bone resorption in immediate to delayed implant placement. Results demonstrated that less bone resorption occurred in sockets receiving immediate implants (1.9 mm) than is sockets allowed to heal naturally(3.06 mm)**

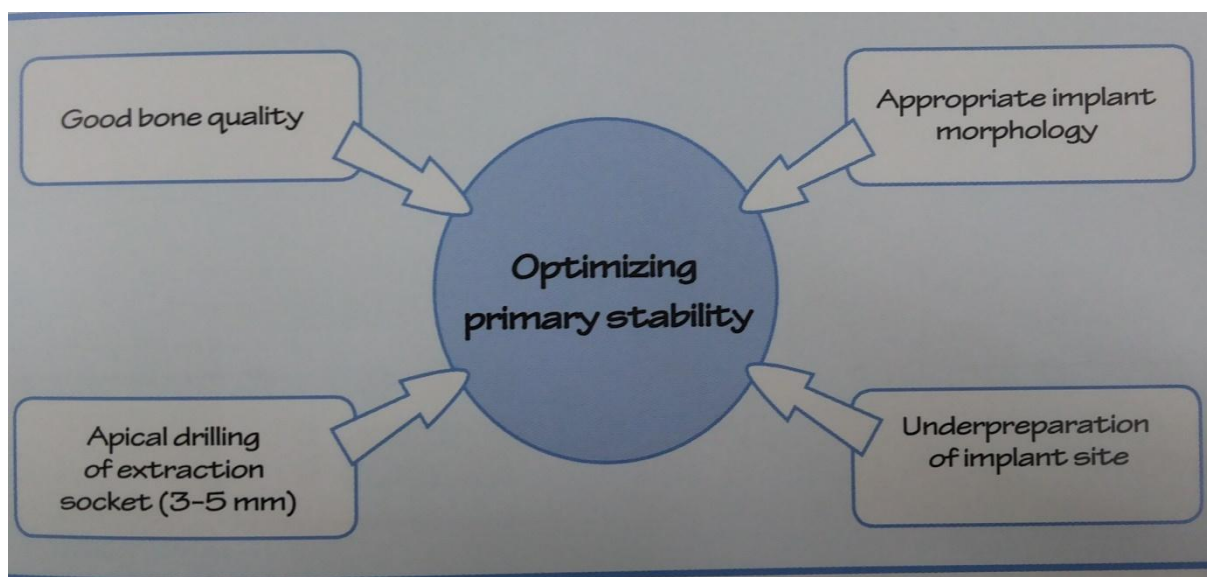
## OSSEOINTEGRATION

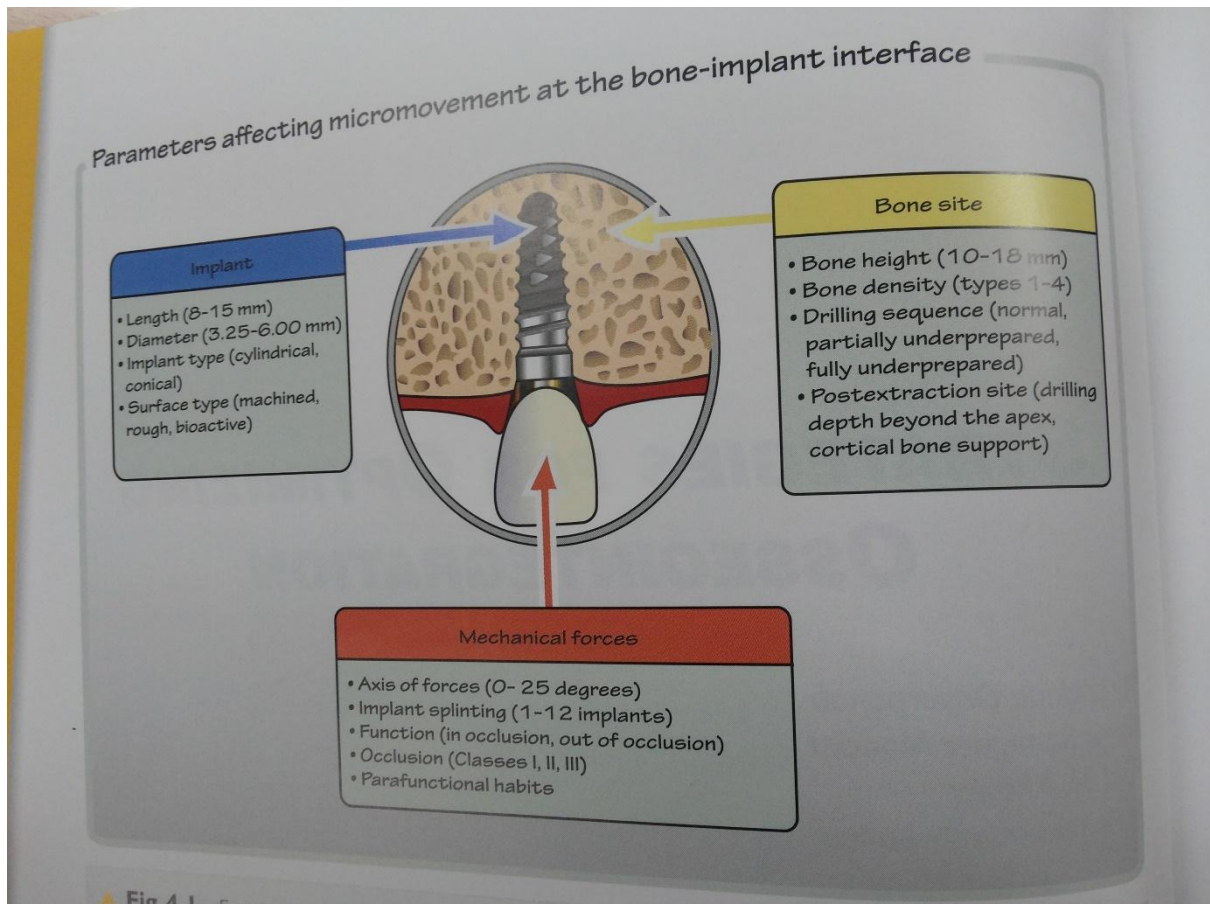
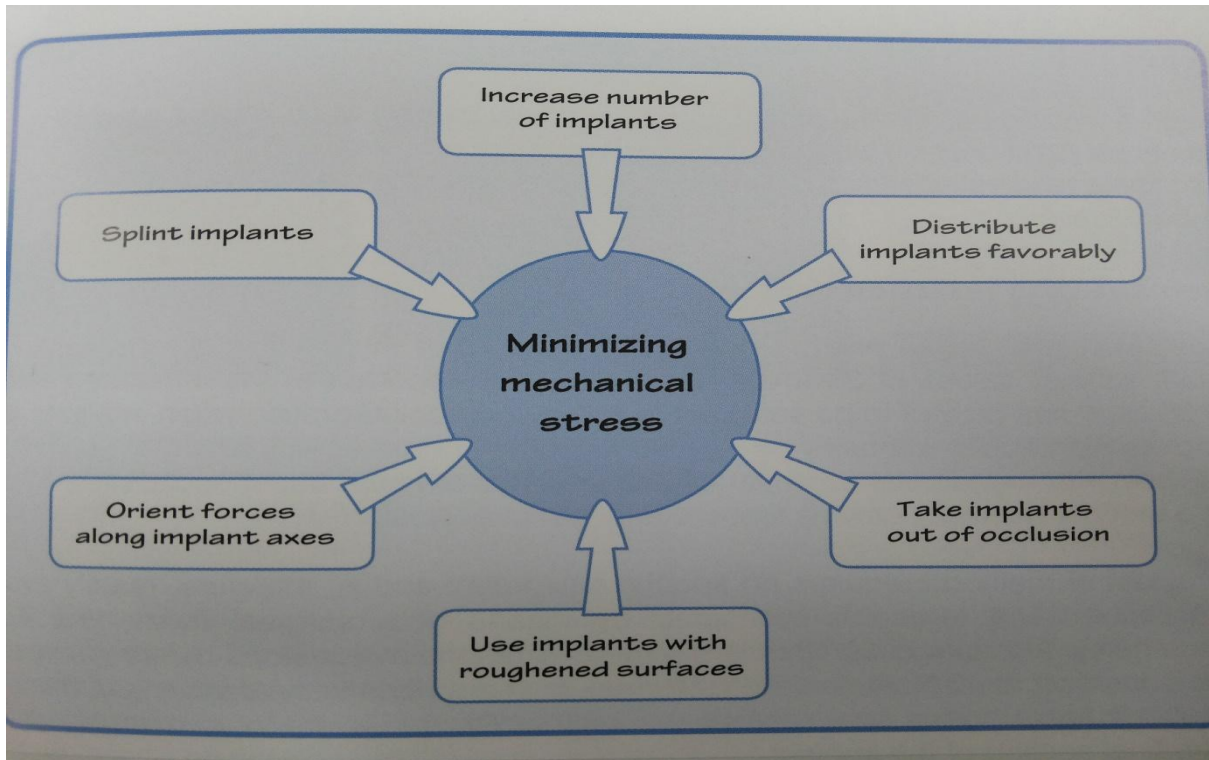
Osseointegration should be optimum even more so in case of immediate implants. This is done by minimizing the micromovement at the bone implant surface which should be less than 100 micrometres for roughened surfaces.

There are 2 ways of doing so:

1. Primary stability should be maintained
2. Exerted mechanical stresses should be minimised

Primary stability can be measured most simply by relating it to the maximum torque applied for final implant setting. **Torque of 35Ncm has proved to be sufficient to achieve osseointegration when implants support single anterior maxillary crowns kept out of occlusion.**





The treatment protocol for immediate implant placement:

1. The involved alveolar process must be free of all acute infections. Although majority of comparative data show that survival rate of implants placed immediately following extraction with local pathology is similar to that of implants placed In healed ridges, factors such as soft tissue, bone quality and quantity as well as presence of pathology and condition of adjacent teeth enter into the decision of timing of implant placement.
2. Buccal plate must be preserved in toto
3. When esthetic considerations are critical every effort should be made to place the implant without raising the flap
4. Implants must be placed 3-5 mm beyond apex to gain the maximum degree of stability
5. Longer implants provide greater initial stability but increased length beyond 15 mm provides little benefit. In posterior regions a 2 mm safety margin above the mandibular canal is to be maintained. In posterior segments of maxilla penetration of 1-2 mm into the sinus cavity shows no adverse consequences.
6. Implants should be surrounded by 1 mm of cortical bone. In anterior regions where esthetics is involved at least 2mm cortical bone should be left surrounding the implant to limit vertical bone resorption.

Here are we going to see three cases of “EXTRACTION AND IMMEDIATE IMPLANTS” And one case of delayed implant. All the immediate implants cases had favourable outcomes, thus advocating to opt for immediate implants, whenever possible.

#### CASE REPORT 1

A 26 year old male patient reported to the dental clinic with the chief complaint of pain in right side of lower jaw.

On clinical examination root stumps in relation to tooth no.46 were found which were in a non restorable state and were the cause of the pain

With the patients consent extraction of the offending tooth and immediate implant placement was planned.

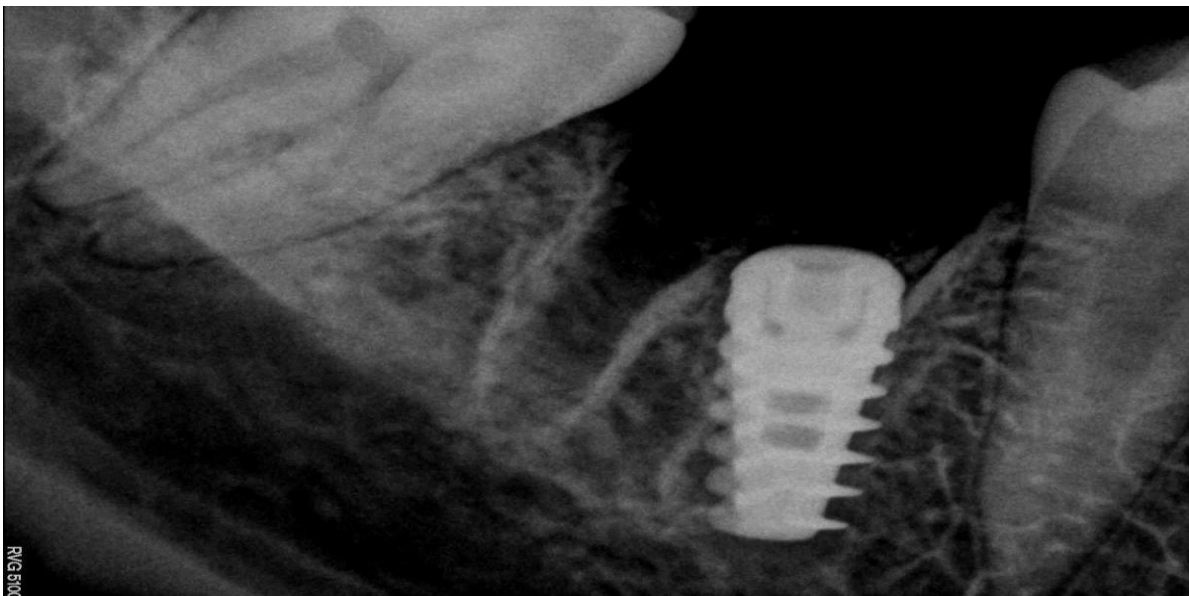




**Figure 1** root stumps 46

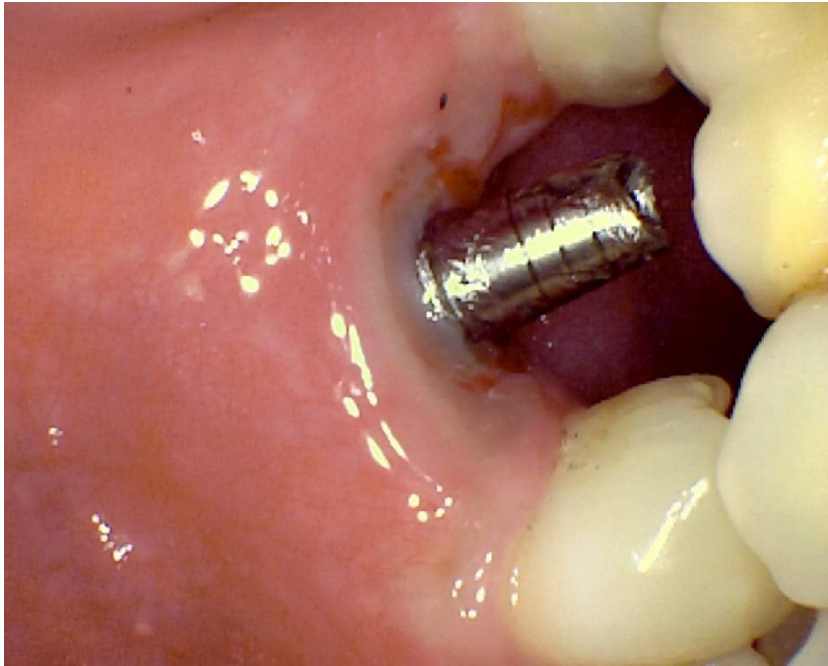
adin implant was used of size 4.2\*10mm.

Insertional torque was 40 nmc.



**Figure 2** implant post extraction

Loading of the implant was done after 4 months.



**Figure 3** abutment in place



**Figure 4** implant prosthesis loaded

Follow up was done 3 and 6 month later.

No abnormaliy was detected and patient reported with no complaints.

## CASE REPORT 2

A 30 year old male patient reported to the dental clinic with complaint of missing upper front tooth. On clinical examination root stump in relation to tooth no.12 was found.

With the patients consent extraction of the root stump and immediate implant placement was planned.



**Figure 5** root stump 11



**Figure 6** root stump 11

Biomet 3i implant of size 5\*10 mm was used

Insertional torque was 45 nmc.



**Figure 7 implant depth gauge in place post extraction**



**Figure 8 implant post extraction 11**

Loading of the implant was done after 4 months.





**Figure 9 implant prosthesis loaded**

At the 3 and 6 months follow up was done. patient reported no adverse symptoms.

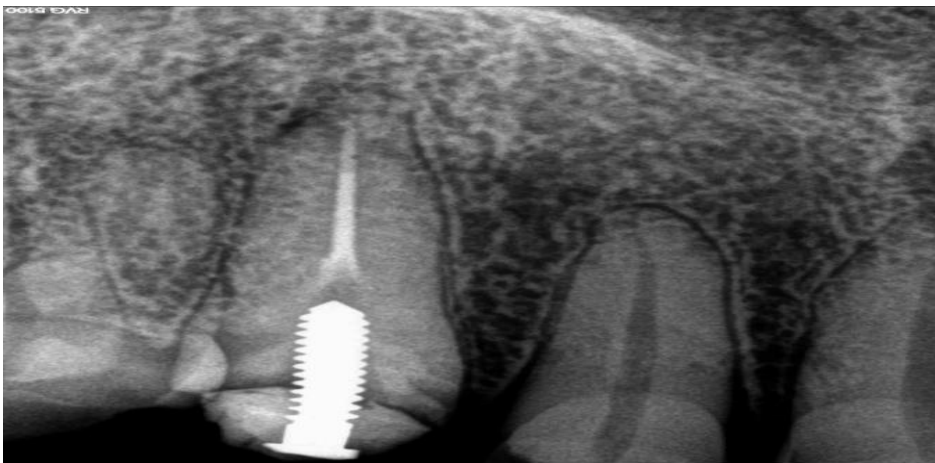
### Case report 3

A 55 years old patient reported to us with a chief complaint of fractured right upper front tooth. Patient had got the post and core build up done from some clinician and wanted to get the crown done by us.



**Figure 10** core built up 13 with thin lingual segment intact clinical picture showed only a thin lingual wall remaining wrt 13. Rest of the tooth was totally build up with the post and core.

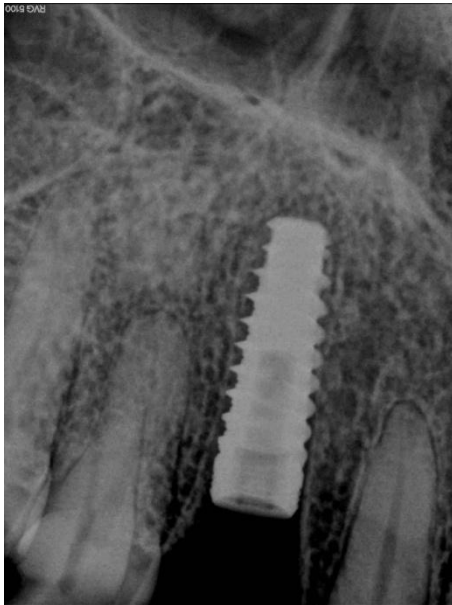
Radiograph was taken



**Figure 11** radiograph showing poor prognosis with post and core

Patient was advised to go for the extraction and immediate implant as thye prognosis was poor with the post and core.

With the patients concent, extraction and immediate implant was planned.



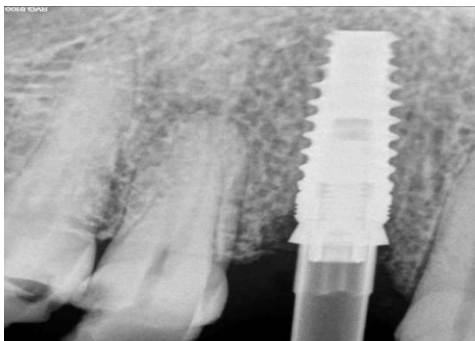
**Figure 12** implant post extraction

Steadfast implant was planned.

Size 5\* 13mm was used

Insertional torque was 45 nmc.

Loading was done after 4.5 months.



**Figure 13** abutment in place



Figure 14 abutment in place



Figure 15 PUTTY IMPRESSION- ONE STAGED TECHNIQUE





**Figure 16 post prosthesis fixation**

3 and 6 months follow up was done. No abnormality was found.

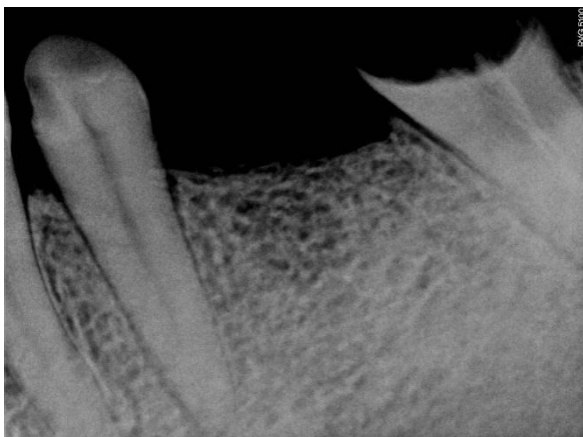
#### DELAYED IMPLANT CASE

##### CASE REPORT 4

A 45 year old female patient reported to the dental clinic with the chief complaint of missing tooth In lower jaw left side. History went back to 6 years when she got the tooth extracted.

On clinical examination, tooth no. 36 was found to be missing.

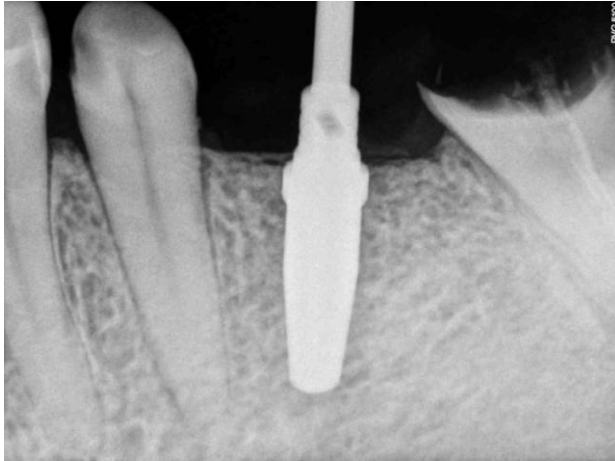
With the patients consent implant placement in relation to tooth no. 36 was planned.



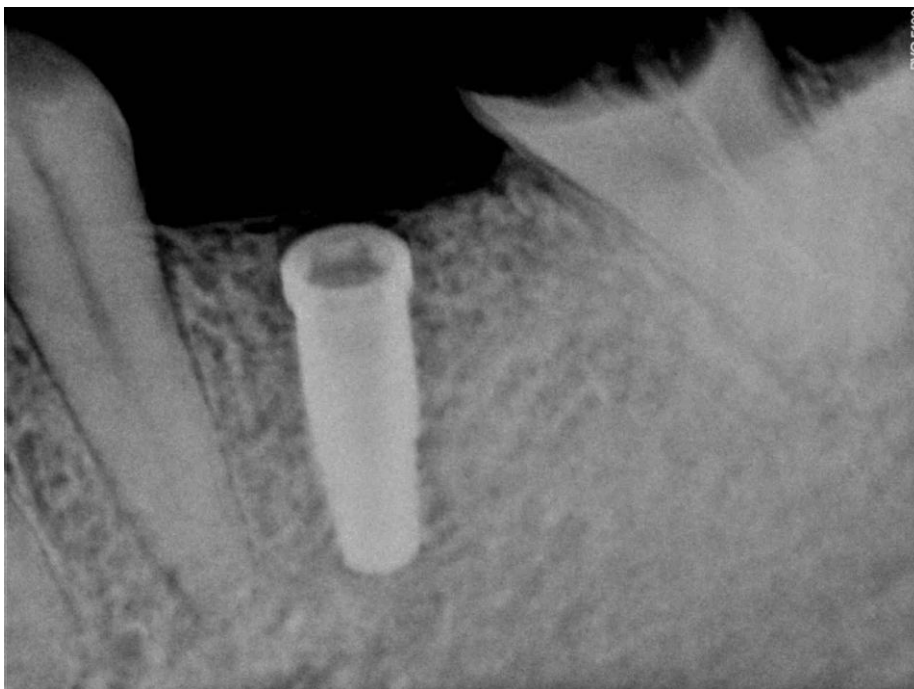
**Figure 17 MISSING 36**

Biomet 3i implant of size 4\*11.5 was used

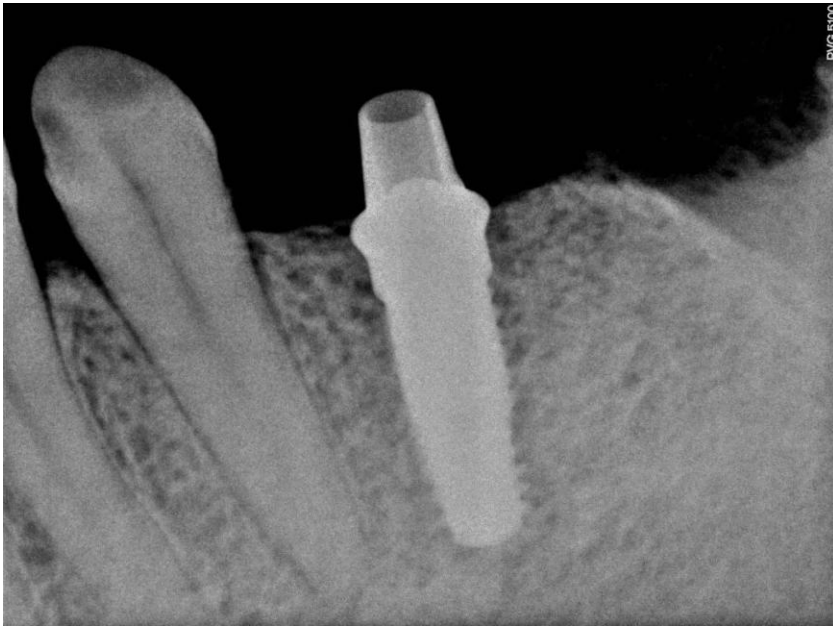
Insertional torque was 60 nmc



**Figure 18 DEPTH GAUGE IN PLACE**



**Figure 19 IMLANT IN PLACE**



**Figure 20 POST ABUTMENT FIXATION**

Loading was done at 3.5 months



**Figure 21 IMPLANT PROSTHESIS LOADED patient reported with no complaints at the 3 and 6 month follow up.**

## DISCUSSION

Immediate implant placement provides certain benefits in terms of better patient compliance with reduced treatment time. The results obtained with delayed and immediate implant placement are same with the added biological advantage of reduced postoperative bone resorption with the latter.