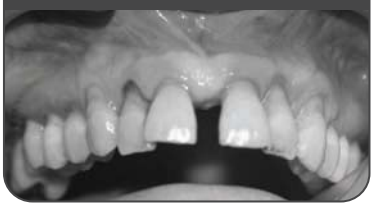
Sep. 2009

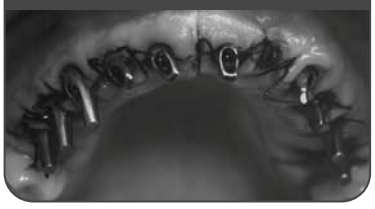
The Challenge in the Aesthetic Area from the Surgical Aspect

Dr. Schneider Gadi - D.M.D, Specialist in Periodontics

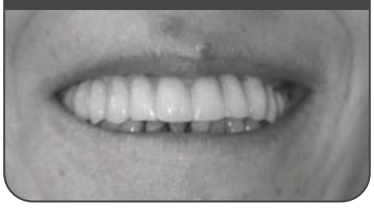
Before extractions



Primary closure around the abutments



Immediate loading with temporary bridge



English

The Challenge in the Aesthetic Area from the Surgical Aspect

Dr. Schneider Gadi - D.M.D, Specialist in Periodontics

The ideal placement of a single implant or of several implants in the aesthetic area

O-G
2 mm under the CEJ of the adjacent teeth.

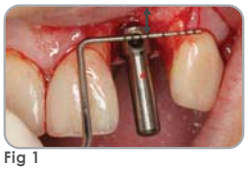


Fig 1

M-D
A minimum space of 1.5 mm should be left from the adjacent teeth.

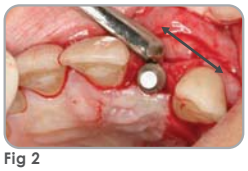


Fig 2

B-P
A minimum of 1 mm of bone should be left at the circumference of the implant.

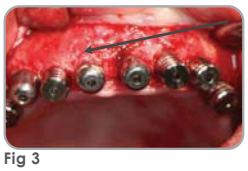


Fig 3

Angulation
The implant faces an imaginary line connecting the cingulum of the adjacent teeth. If the implant is placed buccally to this line, angulated abutments should be used in order to correct the angle.

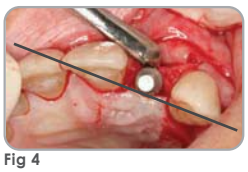


Fig 4

Space between implants
A minimum space of 3 mm should be left between the margins of adjacent implants in order to obtain a papilla.

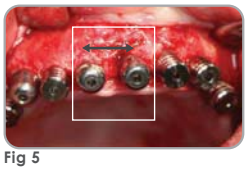


Fig 5

Space between the contact point and the proximal bone (Tarnow law)
A maximum space of 5 mm should be left between the peak of the proximal bone and the contact point of the crown with the adjacent teeth.
The distance between the two red points (in the photo) – the greater the distance, the smaller the chances of obtaining a papilla (Tarnow 05).

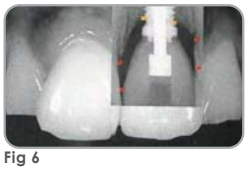


Fig 6

The main aesthetic problem arises from the amount of bone in the buccal region:

1. Crater formation around the tooth
According to the literature, the circumference of the alveolus is a minimum of 1.5 mm, which means that 2-4 mm of bone on the buccal surface of the implant are necessary in order to prevent a buccal-marginal loss of bone (Spray 00).

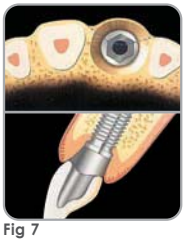


Fig 7

2. Rapid loss of bone in the premaxillary region

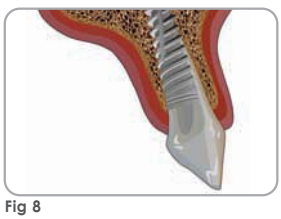


Fig 8

- Proclination of the front teeth
- Prominent roots
- A very thin buccal plate

These anatomic conditions cause rapid and extensive bone loss mainly in the anterior buccal region.

About one third of the buccal plate is resorbed in the first month following the extraction.

Bone resorption begins in the first week following the extraction and causes extensive thinning of the buccal plate during the first three weeks (Carlsson 67).

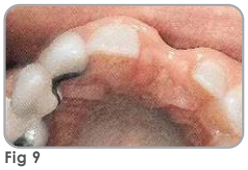


Fig 9

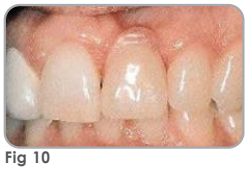


Fig 10

3. Implant insertion does not prevent buccal bone resorption

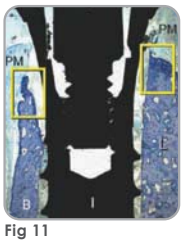


Fig 11

Immediate implantation in the PM region with a thin buccal plate

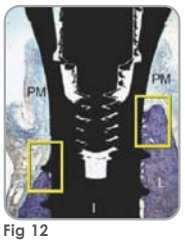


Fig 12

→ Significant buccal resorption after 3 months

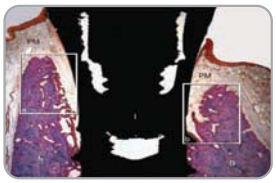


Fig 13

Immediate implantation in the molar region with a thick buccal plate

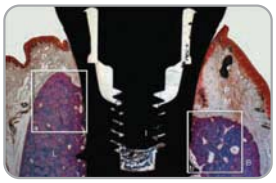


Fig 14

→ The buccal bone is maintained after 3 months

Buccal bone resorption is affected by ridge anatomy (bone thickness) and not by the placement of an implant (Araujo 06).

Conclusions:

- Critical bone mass (blood supply) is necessary in order to preserve the buccal plate and achieve an esthetic result.
- It is not sufficient to leave about 1 mm of bone on the buccal side of the implant, but rather a minimum of 2 mm of bone should be left.
- Even if the whole implant is within the bone coverage and the buccal plate is thin, bone augmentation should be performed in order to thicken and maintain the buccal plate.
- The bone preservation is dependent mainly upon the surgeon.

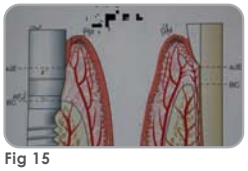


Fig 15

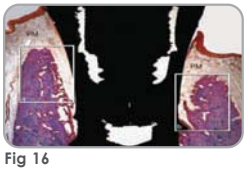


Fig 16

Data on file.

Case 1 – Immediate implantation in the region of tooth 11 – SPI

Dr. Schneider Gadi and Dr. Bruckmayer Yoram

Tooth 11 before extraction

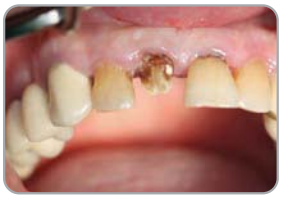


Fig 17

Extraction intact socket

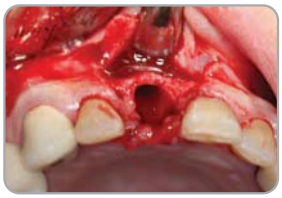


Fig 18

Ideal placement O-G

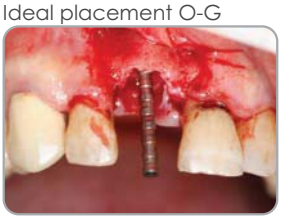


Fig 19

Ideal placement M-D and B-P

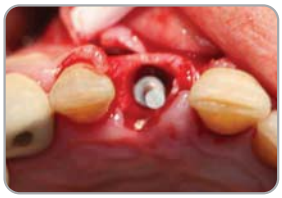


Fig 20

Ideal placement in the socket

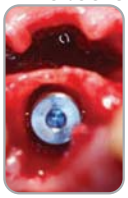


Fig 21

Buccal plate 1 mm

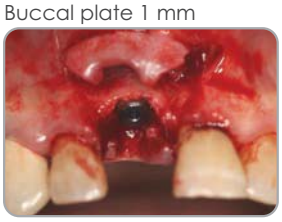


Fig 22

Application of 4 mm bone

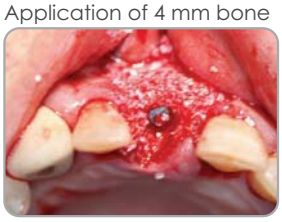


Fig 23

Application of membrane

Fig 24

Primary closure

Fig 25

Exposure after 6 month

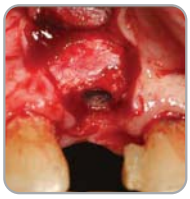


Fig 26

Case 2 – Complete upper jaw, immediate implantation and immediate loading - SPI implants

Dr. Schneider Gadi and Dr. Bruckmayer Yoram

Preoperative panoramic x-ray

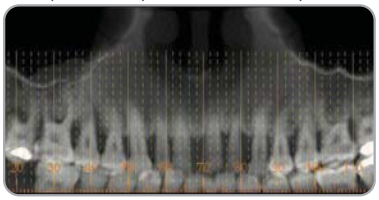


Fig 27

Before extractions

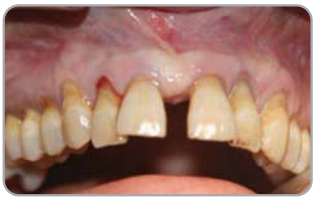


Fig 28

After extractions

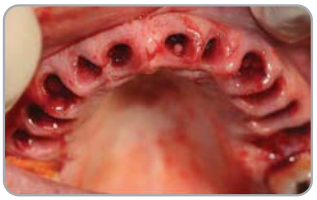


Fig 29

Ideal placement - buccal view

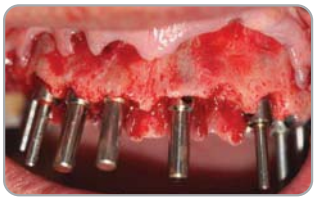


Fig 30

Ideal placement occlusal view

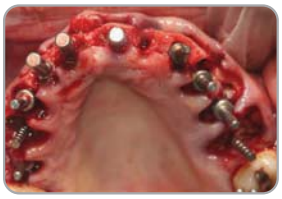


Fig 31

Insertion of SPI implants

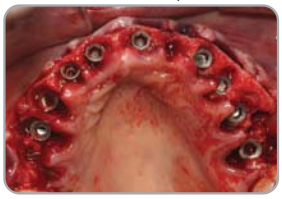


Fig 32

Very thin buccal plate in the anterior region

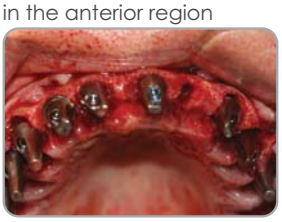


Fig 33

Placement of abutments occlusal view

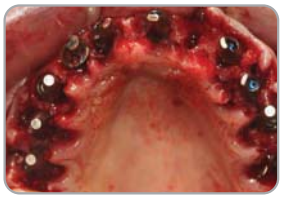


Fig 34

Application of 3-4 mm of bone on the buccal side

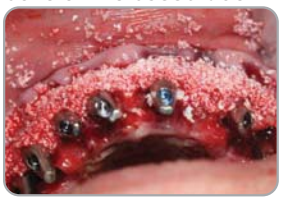


Fig 35

Application of membrane

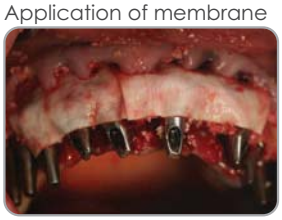


Fig 36

Primary closure around the abutments

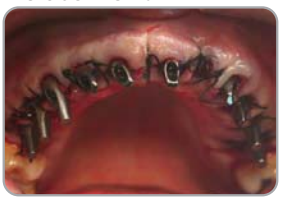


Fig 37

Panoramic x-ray after the implantation

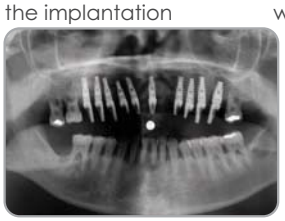


Fig 38

Immediate loading with temporary bridge

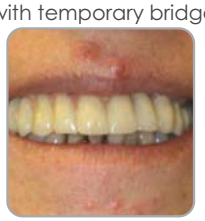


Fig 39

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