

Critical Factors for Soft Tissue Volume in Implant Dentistry

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I N T R O D U C T I O N

Replacing missing teeth with dental implants has become a viable solution for conventional fixed or removable prosthodontics. However, the application of the principles of osteointegration to single missing tooth and partial edentulism has increased patient esthetic demands. An important aspect of the success criteria for dental implants in esthetic zone involves the establishment of soft tissue contour with an intact interdental papilla and a gingival line

that is harmonious with the gingival silhouette of the adjacent healthy dentition. Although numerous methods have been proposed to regenerate papilla, due to compromised blood supply and scar tissue formation, these techniques were reported to be unpredictable. The purpose of this presentation is to demonstrate critical factors for soft tissue volume gaining in implant dentistry.

Critical Factors

3D Implant position

Implant design

Incision design

Connective Tissue Grafts (CTGs)

Scar tissue

Prosthetic design

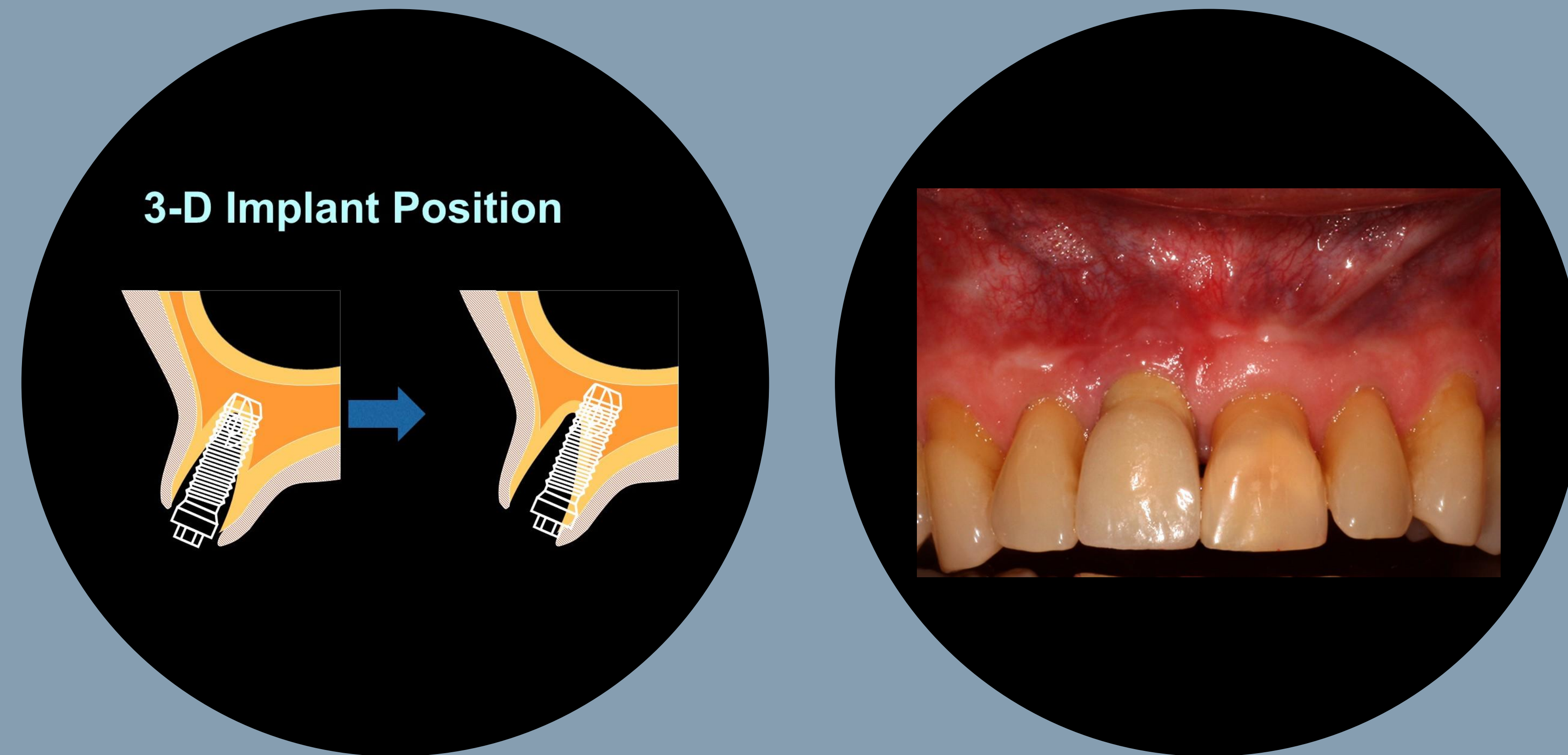
Prosthetic materials



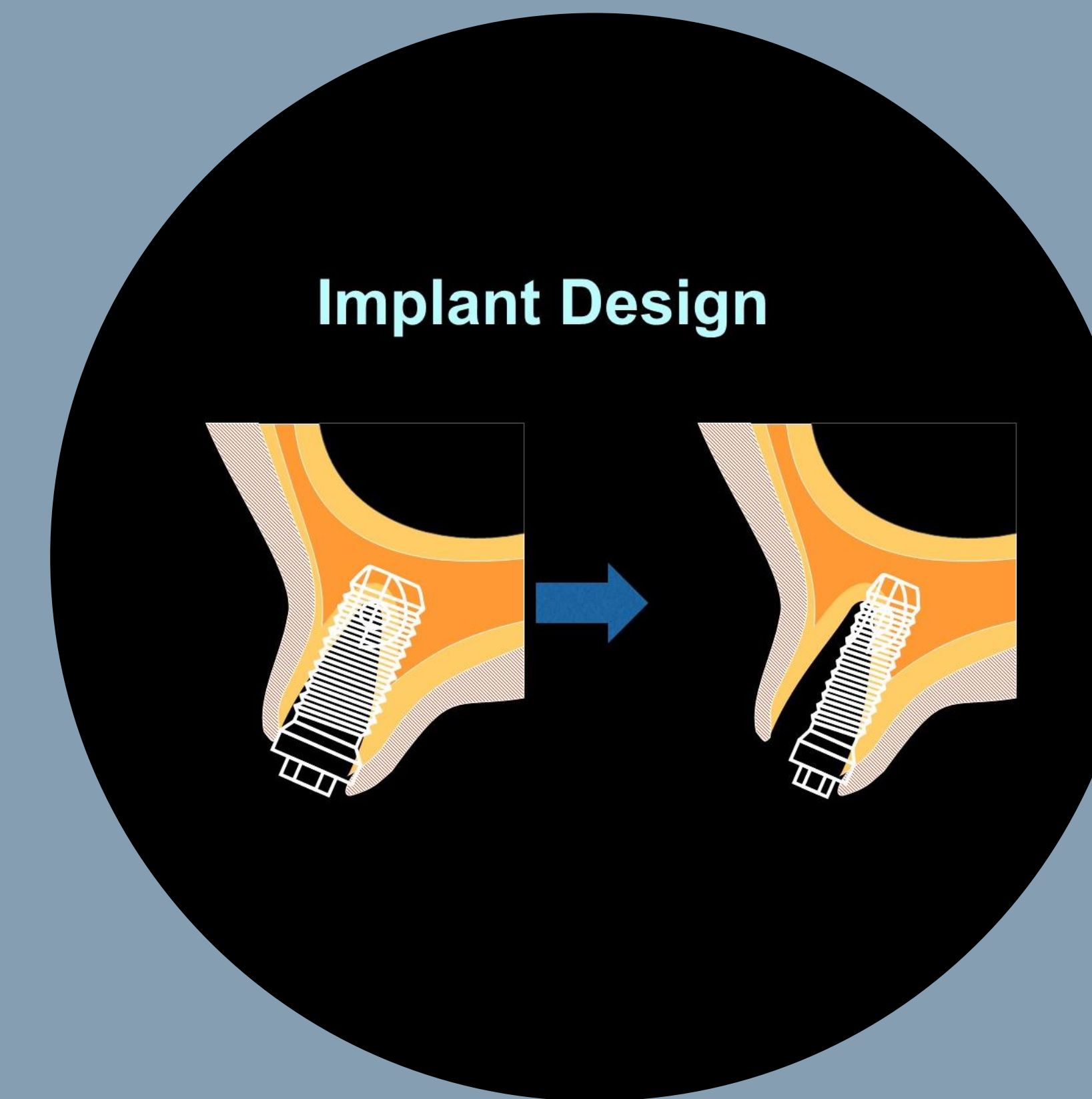
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DISCUSSION

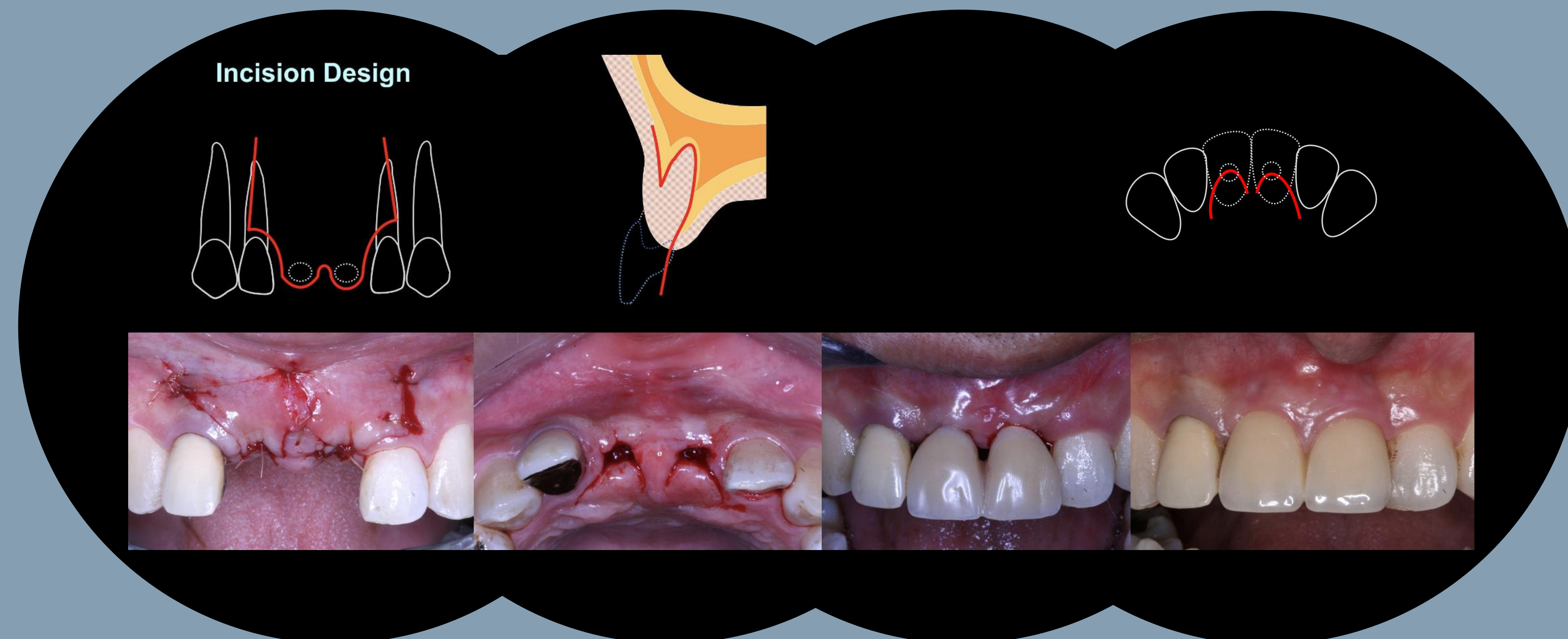
3D Implant position



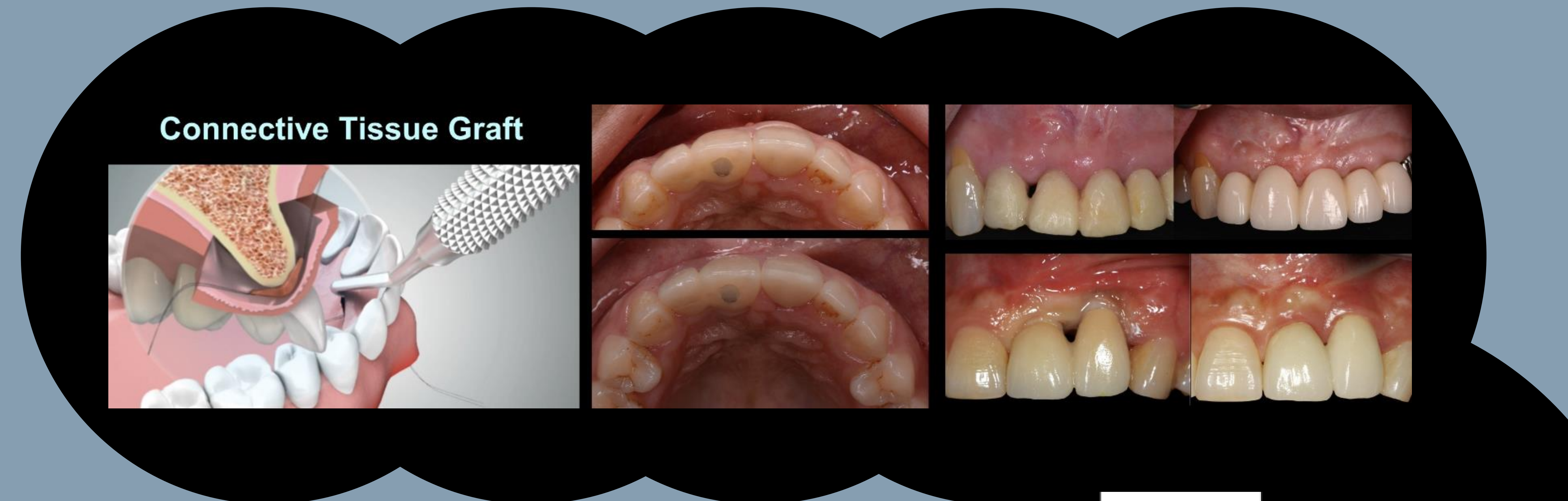
Implant design



Incision Design



Connective Tissue Grafting

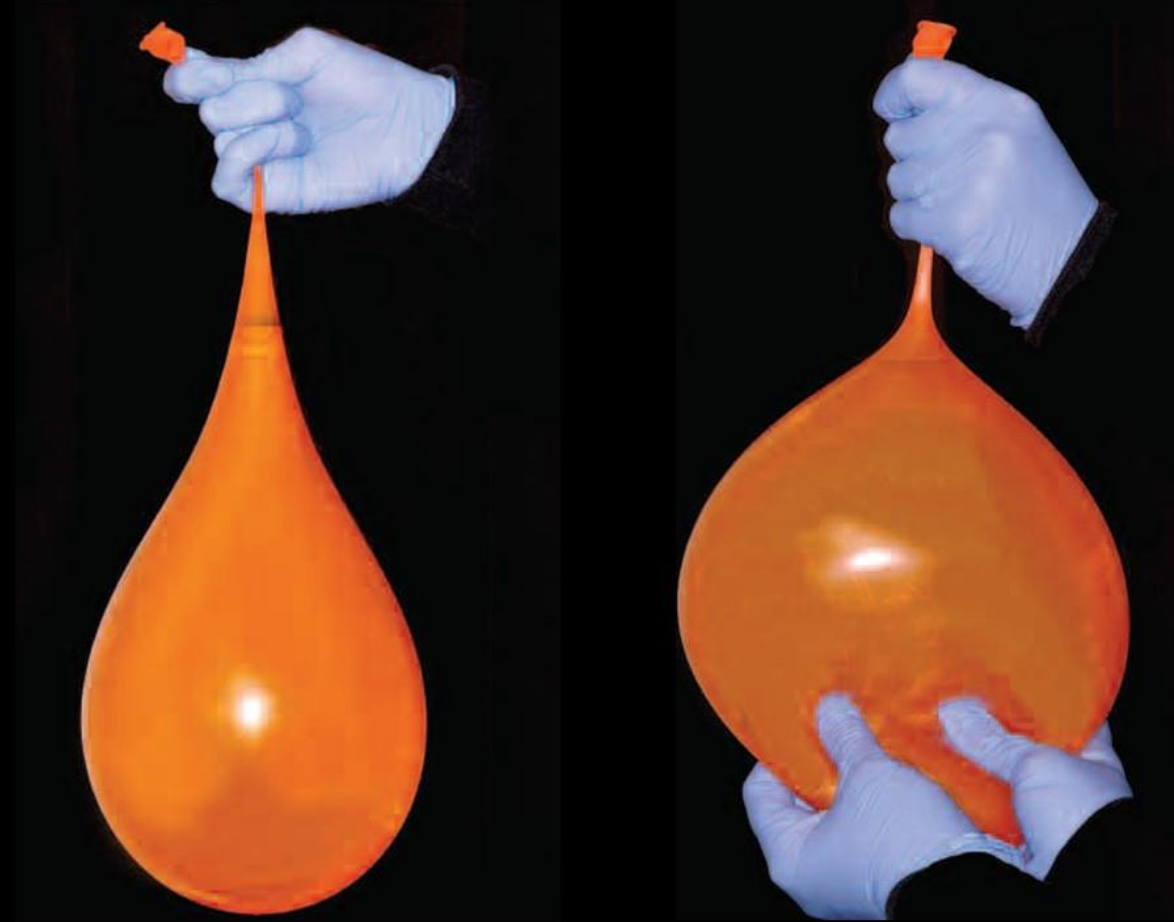


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DISCUSSION

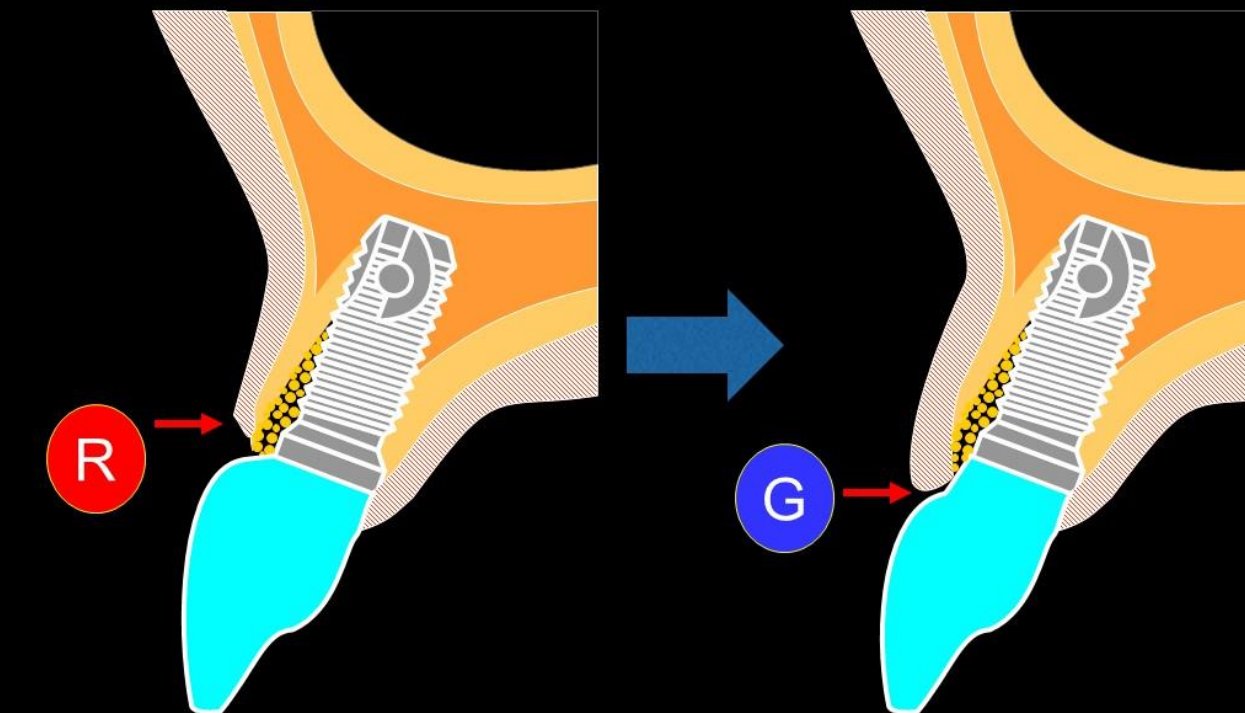
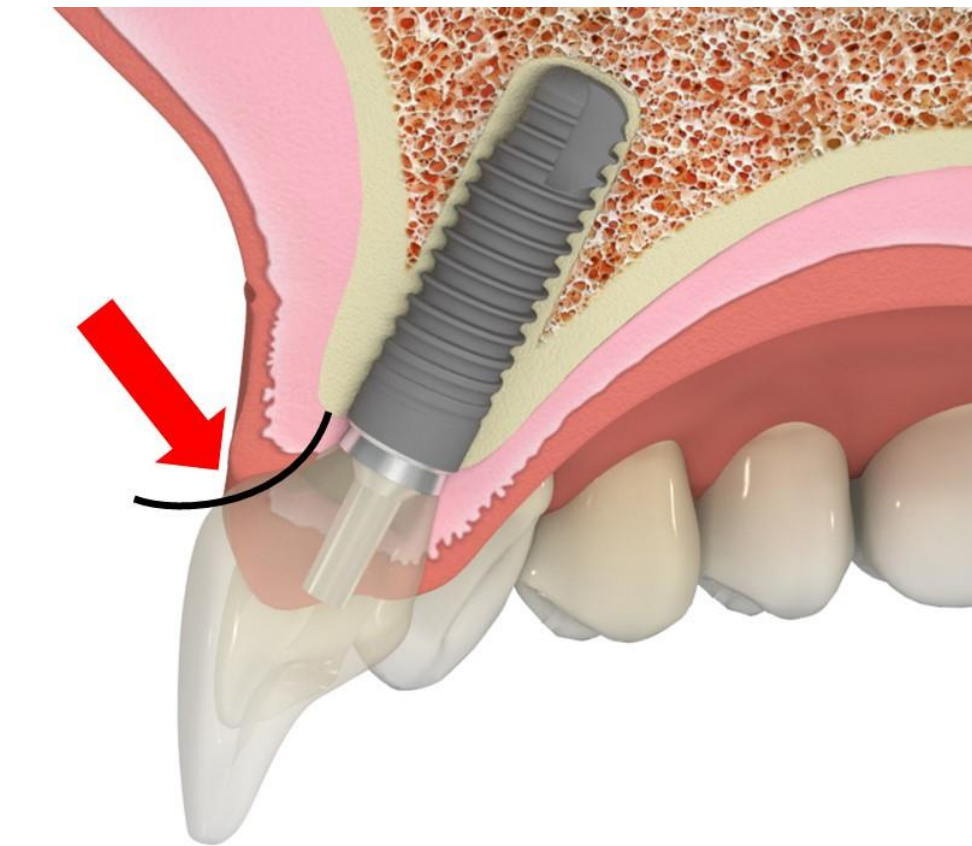
Scar tissue

Scar Tissue

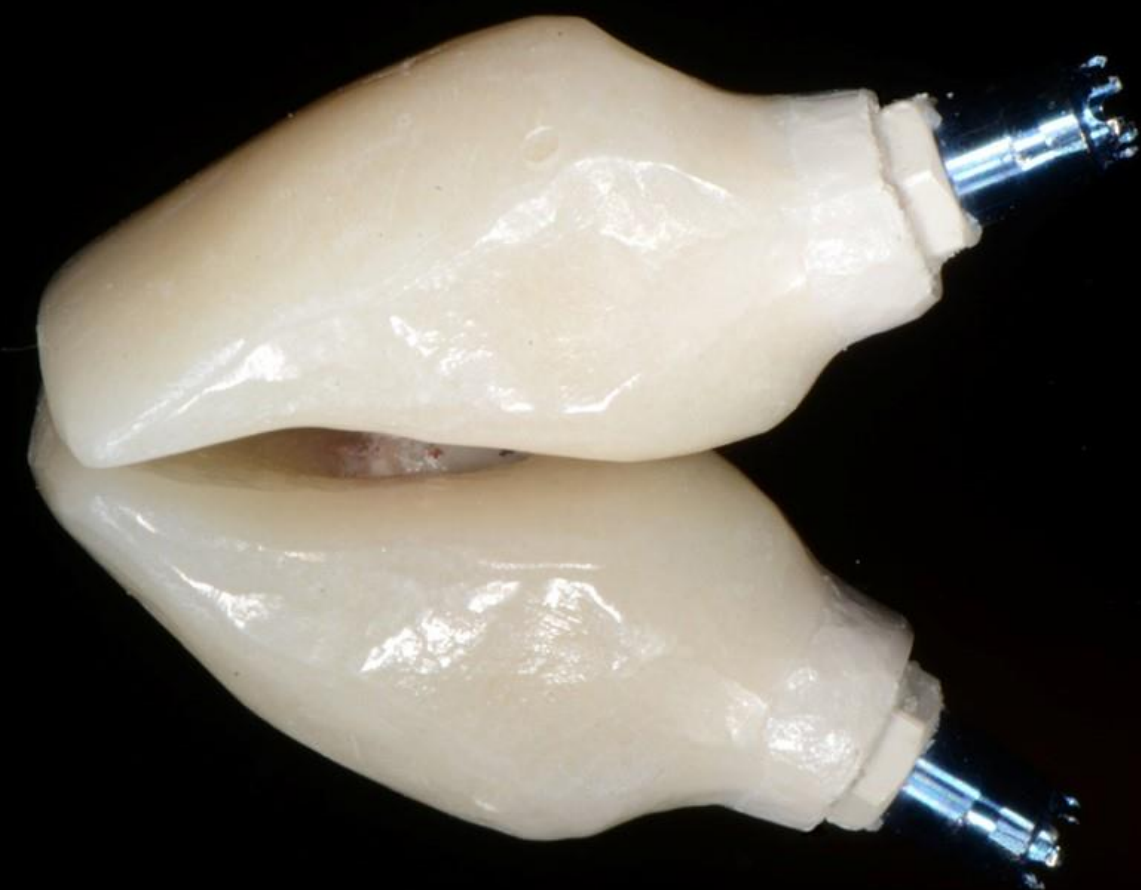


Prosthetic Design

Prosthetic Design/Materials



Prosthetic Materials



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DISCUSSION

Factors	Recommended procedure	Rationale
Implant Position	Palatal/Apical	Space for soft tissue
Implant Design	Not Wide/Not Too Narrow	Space for emergence profile
Incision Design	Papilla Saving	Minimal scar tissue
CTG	Soft tissue graft first, Translingual Graft	Less tension to tissue growth
Scar Tissue	Minimally Invasive	Malleable, resilient tissue
Prosthetic Design	Cervical Concavity	Space for soft tissue
Prosthetic Materials	Porcelain/Zirconia	Minimal inflammation

REFERENCES

1.The soft tissue follows the osseous contours (Hirschfeld I, 1923).

2.The presence of the interproximal papilla is dependent on the distance between the bone crest and the interdental contact point (Spear F 1999, Tarnow 1992, 2003).

3.Adequate interimplant distance (at least 3mm) can be effectively used to preserve the interimplant papilla (Kan J, 2003, Tarnow & Cho 2000).

4.Tissue preservation can enhance the final esthetic outcome only if the existing tissue condition of the filing tooth is favorable (Kan J, 2003).

5.This proof-of-concept study suggests that immediate loading with platform switching can provide peri-implant hard tissue stability with soft tissue and papilla preservation (Canullo L, 2007).

6.When the scalloped implant is correctly placed, excellent soft tissue contours are maintained or created as a result of its bone-preservation (Wohrle P, 2003).

7.Overbuilt site during the prosthetic phase is paramount in the final finishing of the ideal esthetic restoration (Mathew D, 2000).

8.Excised interdental papilla does regenerate completely to its original outline and height (Kohl J, 1961).

9.Controlling the abutment-crown contour appropriately with flat or even undercontour to maintain the soft tissues in a stable and healthy position long term (Chu S, 2013).

10.Concavities should be avoided, as they accumulate plaque and are difficult to clean thoroughly (Tarnow D, 1995).

11.Overcontouring of a crown will eventually cause midbuccal tissue recession, whereas undercontouring of the crown will cause a “rolled” or flattened appearance of the midbuccal tissue with incisal “creeping” (Weisgold A,1977).

