One piece zirconia implants for the replacement of single units: A case series

Almarghliani, Ammar
Moy, Peter; Aghaloo, Tara; Pi-Anfruns, Joan
Surgical Implant Center, UCLA School of Dentistry
Introduction

- titanium and its alloys are the most commonly used dental implant materials
- although very successful, certain disadvantages have been described
- extensive peri-implant infections Association with foreign bodies (titanium, dental cement)
- grey shimering of Ti
- corrosion, metal abrasion
- increased concentration of titanium in the direct environment of implants and in regional lymph nodes
- Ti allergy
Introduction

- Zirconia was introduced in the 1990’s
- orthopedics posts, frameworks, abutments for dental applications

Properties of Zirconia

- Less mucosa discoloration/ better color match to the soft tissue at natural teeth than with titanium
- Significantly lower bacterial adhesion than with titanium surfaces
- Less inflammatory infiltration in the peri-implant tissue than with gold and titanium
- Favorable for the formation of epithelial attachments and mucosal obturation
- Significantly increased micro-circulation in peri-implant soft tissue compared to titanium
Materials and Methods

- 13 healthy patients between 19 and 70 years old (mean 44.5), 6 females (46.15%) and 7 males (53.8%)

- A total of 18 Ceraroot © Zirconia implants were placed following the recommendations of the manufacturer

- Cement-retained ceramic fixed restorations were delivered 4 months after implant placement.

- 6 months recall intervals for the first 2 years, and yearly after that.

- Peri-apical radiographs were taken at each follow up and crestal bone level changes were calculated.

- Additional clinical parameters such as soft tissue health, including pocket-probing depth, bleeding on probing, plaque index, and gingival index were also calculated.
Results

- follow up time was 1-4 years (mean 2.6 ± 0.21)
- cumulative survival and success rates of 93.3% was found for one-piece zirconia dental implants
- one implant failed prior to receiving the final restoration due to trauma in molar area
- another implant presented with a 2mm recession on the buccal aspect due to the pressure exerted by a removable partial denture during the osseointegration phase
- no fracture of implants were reported during the follow up period

Conclusions

- One-piece zirconia dental implants showed similar survival and success rates compared to traditional titanium dental implants after an observation period of 4 years

References