

Implant-overdenture supported by a CAD/CAM zirconium dioxide bar: A case report

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Patient

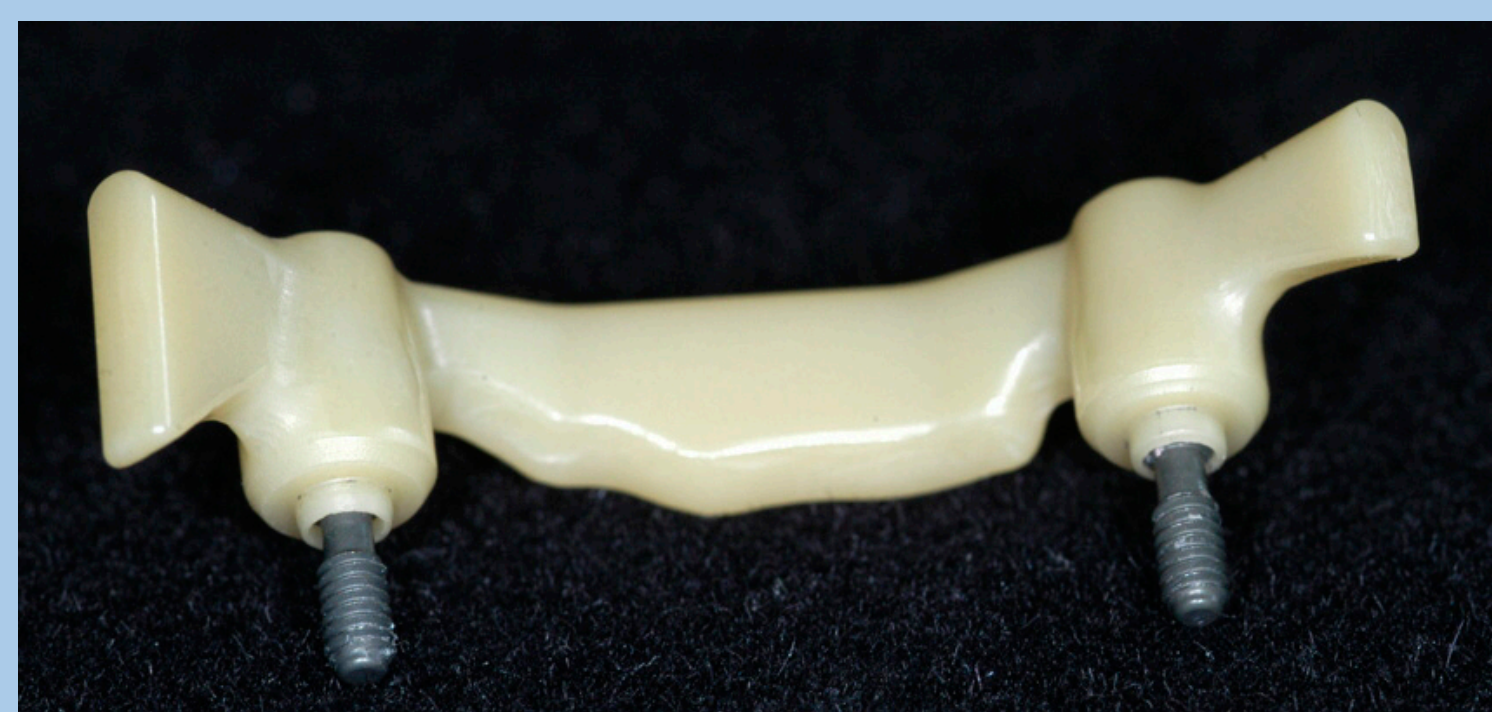
A 77-year old edentulous woman with insufficient prostheses was referred for complete rehabilitation. The treatment included a new



functionally and esthetically pleasing maxillary complete denture and a mandibular implant-overdenture supported by a CAD/CAM bar made from zirconium dioxide (ZrO).

CAD/CAM

Two tapered implants with a medium-rough surface and a flat platform were placed bilaterally in the lower canine area. After six weeks of osseointegration



impression was taken and a master cast was fabricated. A specialized milling center (allshape AG, Lengnau, Switzerland) performed digitization of the implants with a photogrammetric scanner (Imetric 3D GmbH, Courgenay, Switzerland). A rigid bar with parallel walls (height 3.0mm, width 2.2mm) and 6.0mm long bilateral extensions



was virtually designed (CAD) and milled from a presintered homogenous partially yttrium stabilized ZrO block (CAM). After milling procedure the bar was sintered to full density in a special

furnace. The software from the CNC-milling machine compensated for the 20% post-milling sintering shrinkage. The overdenture

attachments were Dolder system female parts (Cendres+Métaux SA, Biel/Bienne, Switzerland). The bar was screw-retained with 35Ncm directly to the implant using specific ceramic abutment-screws that had no sharp edges.

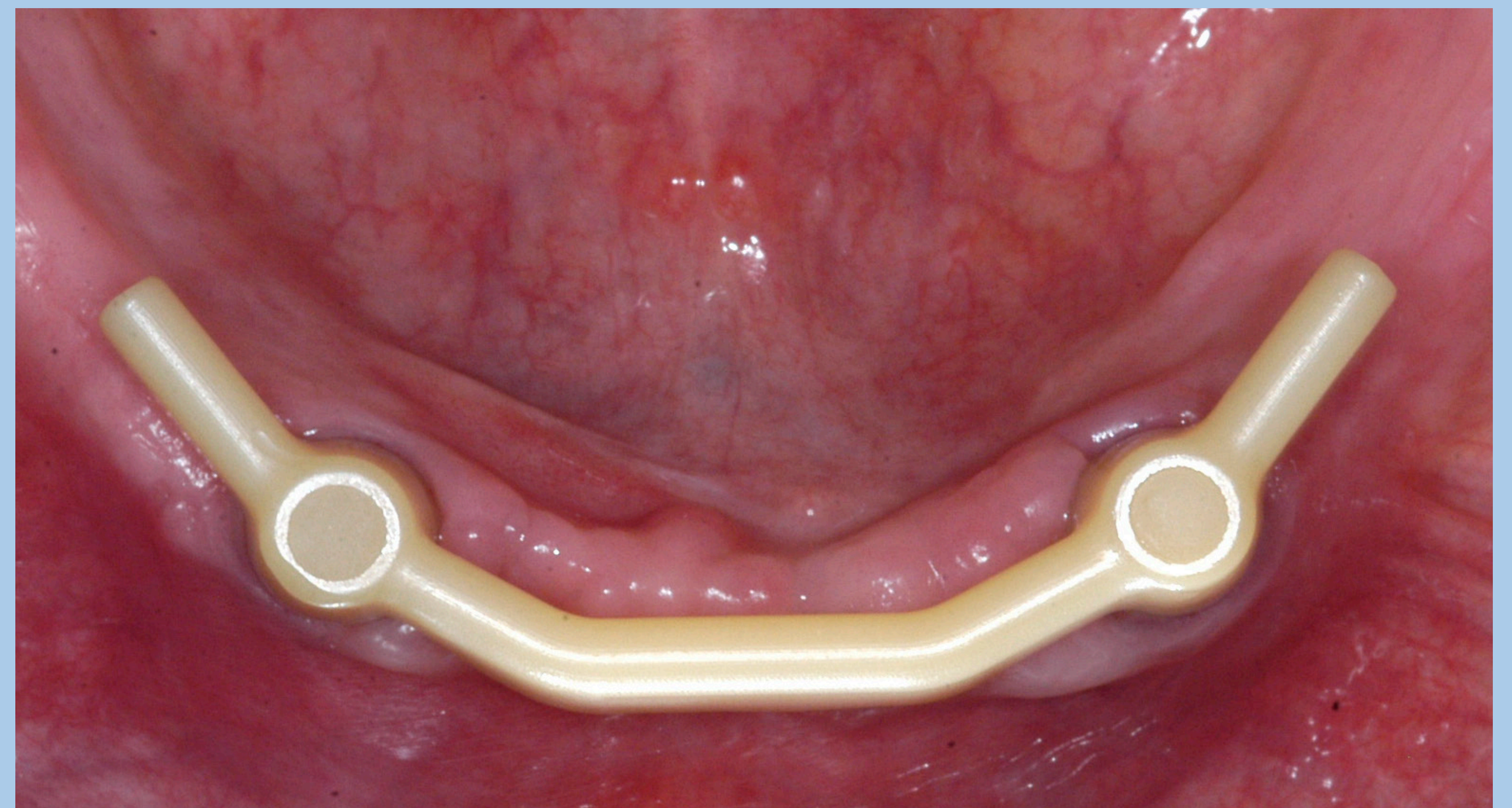
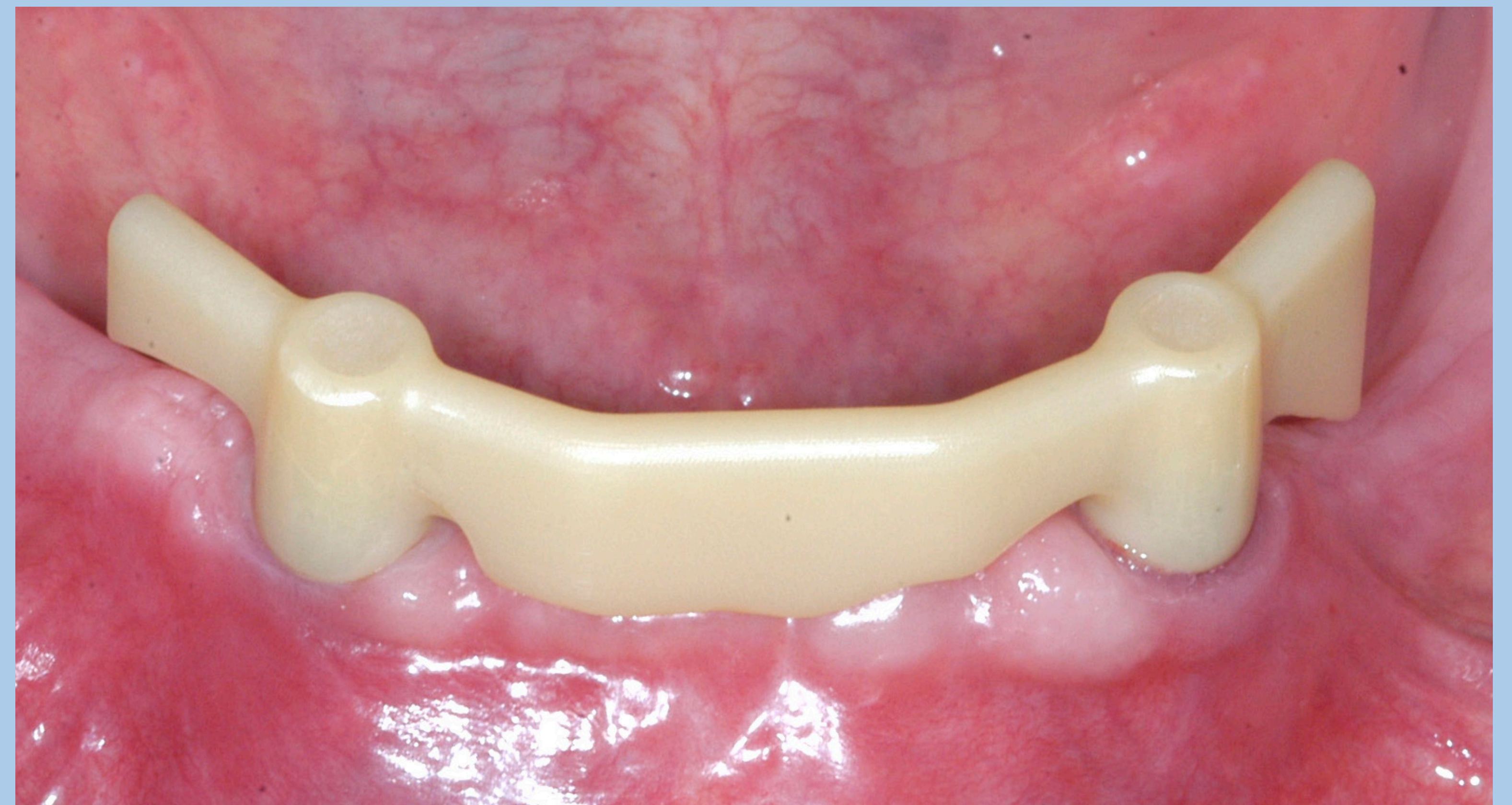


Materials

Implants: Replace Select Tapered NP (Nobel Biocare, Gothenburg, Sweden)

Bar: CAD/CAM zirconium dioxide (allshape AG, Lengnau, Switzerland)

Overdenture: Dolder system female parts (Cendres+Métaux SA, Biel, Switzerland)



Conclusions

After six months neither the CAD/CAM-ZrO bar nor the overdenture showed fractures or extensive surface wear. Matrices activation was not required while the maintenance service was comparably low to conventional implant-overdentures supported by similarly shaped CAD/CAM-bars made from titanium.