

TRANSFER FROM A NATURAL TOOTH TO AN IMPLANT SUPPORTED RESTORATION SUPPORTING AN OVER-DENTURE.

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SUMMARY :

A patient had a failing tooth which was critical to retaining a sophisticated over-denture restoration.

This tooth was removed and replaced with a Conelog® implant. A special transfer system was then used to generate a relationship with the existing over-denture crown. This could be scanned and by digital means reproduced on a Ti-Base CAD CAM component in Zirconia. The new component fit perfectly and restored full function to the old reconstruction.

After finishing studying dentistry in 2006 in Frankfurt, Germany the author worked further two years in a private dental practice in Frankfurt followed by three years in the private dental practice of his parents in Flöha, Germany. He opened his own practice with his wife Dr. Janine Müller in 2011 in Wiesbaden, Germany. He finished his Master of Science in Oral Implantology in 2014. He is specialized in periodontology, implantology and endodontology and has published several scientific articles and contributed to several scientific congresses.



INTRODUCTION

A 55-year old female presented with a fractured maxillary left canine. She did not have the financial resources to undertake a new reconstruction and desired to maintain the existing reconstruction and over-denture. When the canine was extracted, a 3.8 x 13mm Conelog implant was immediately placed in the socket. It was positioned to emerge right under the secondary telescope inside the over-denture.

After three months of healing, the implant was exposed and a wide-body gingivaformer placed. The challenge of this case was to capture the position of the implant and the position of the over-lying secondary telescope in a single impression procedure.

It would have been impossible to achieve this with a conventional Impression Post as this would have hit the inside of the secondary crown. Instead the original Conelog® Insertion Post was used. This has a screw which juts out of a relatively small component. If the screw is too long, it can easily be cut down and given a slot into which a regular screwdriver can fit.



Conelog®
Insertion Post

Once the Insertion Post was secured in the implant, the screw head was protected with a small ball of wax. Then Dual-Core-Build-Up (Kuraray) was placed inside the secondary crown and at the same time around the top of the Insertion post. The over denture was then seated in the mouth and taken to occlusion until the core material set. The over denture was then removed and re-inserted to make sure it would release from the core. An over-impression with alginate was taken which meant a master model could be fabricated.

This technique captured the inner morphology of the secondary telescope while relating this to the implant position.

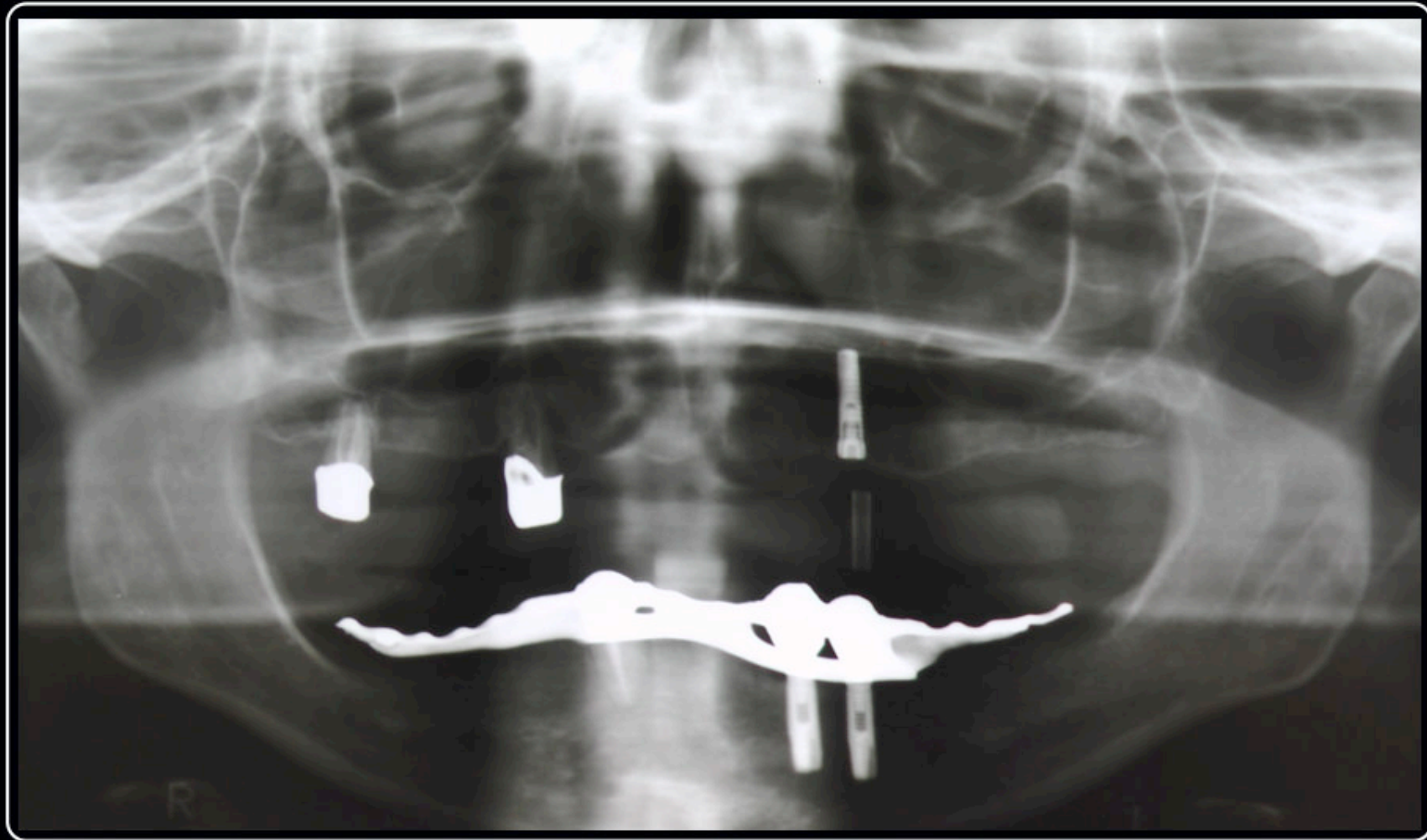


Fig. 1

The patient has lost a great number of her natural teeth. In the maxilla, she recently lost the maxillary left canine tooth and this has been replaced with a 3.8 x 13mm Conelog® implant.



Fig. 2
Having lost the sole support on the left side, the maxillary over-denture reconstruction is now quite unstable.

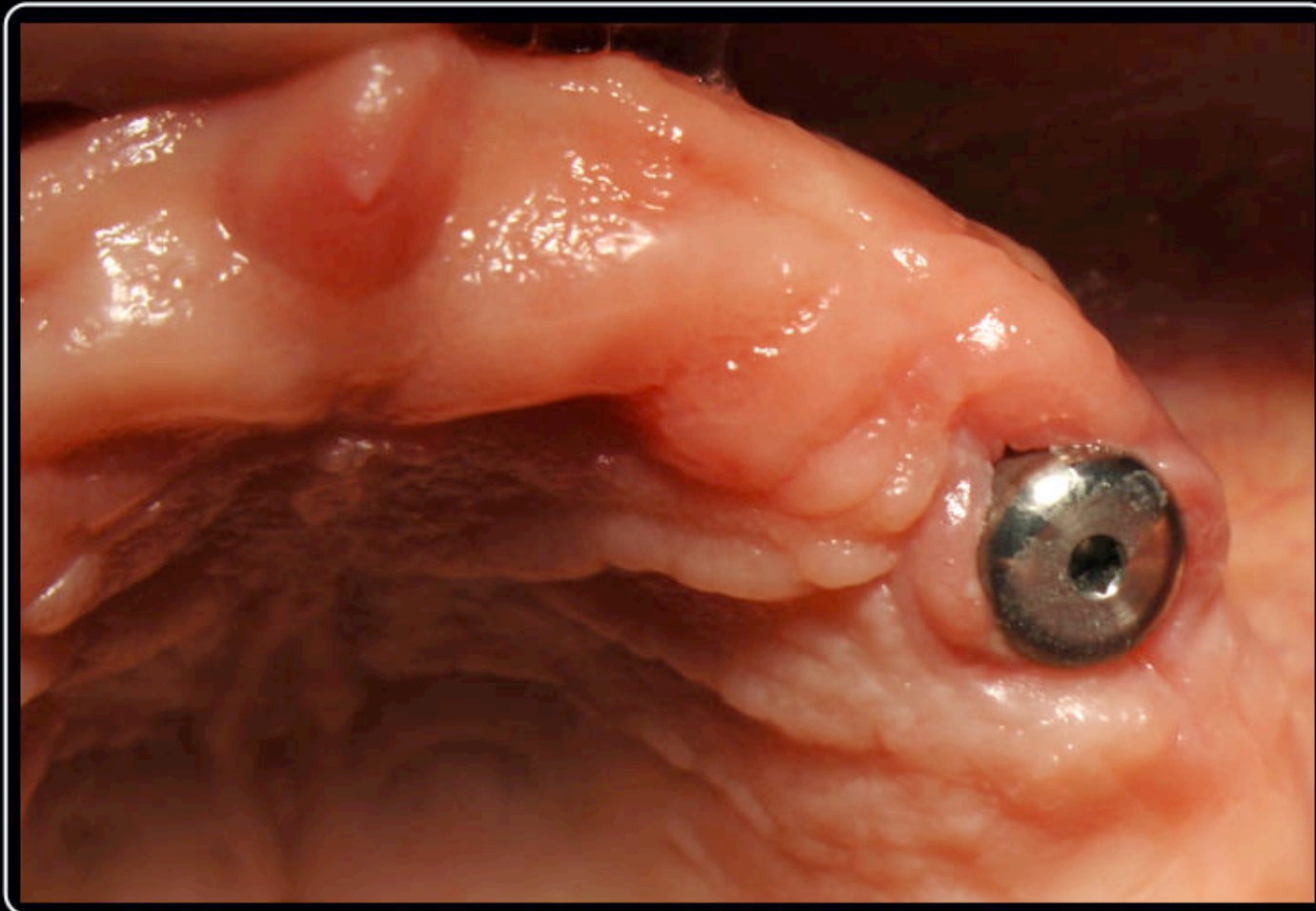


Fig. 3
The implant has a wide-body gingivaformer in place.

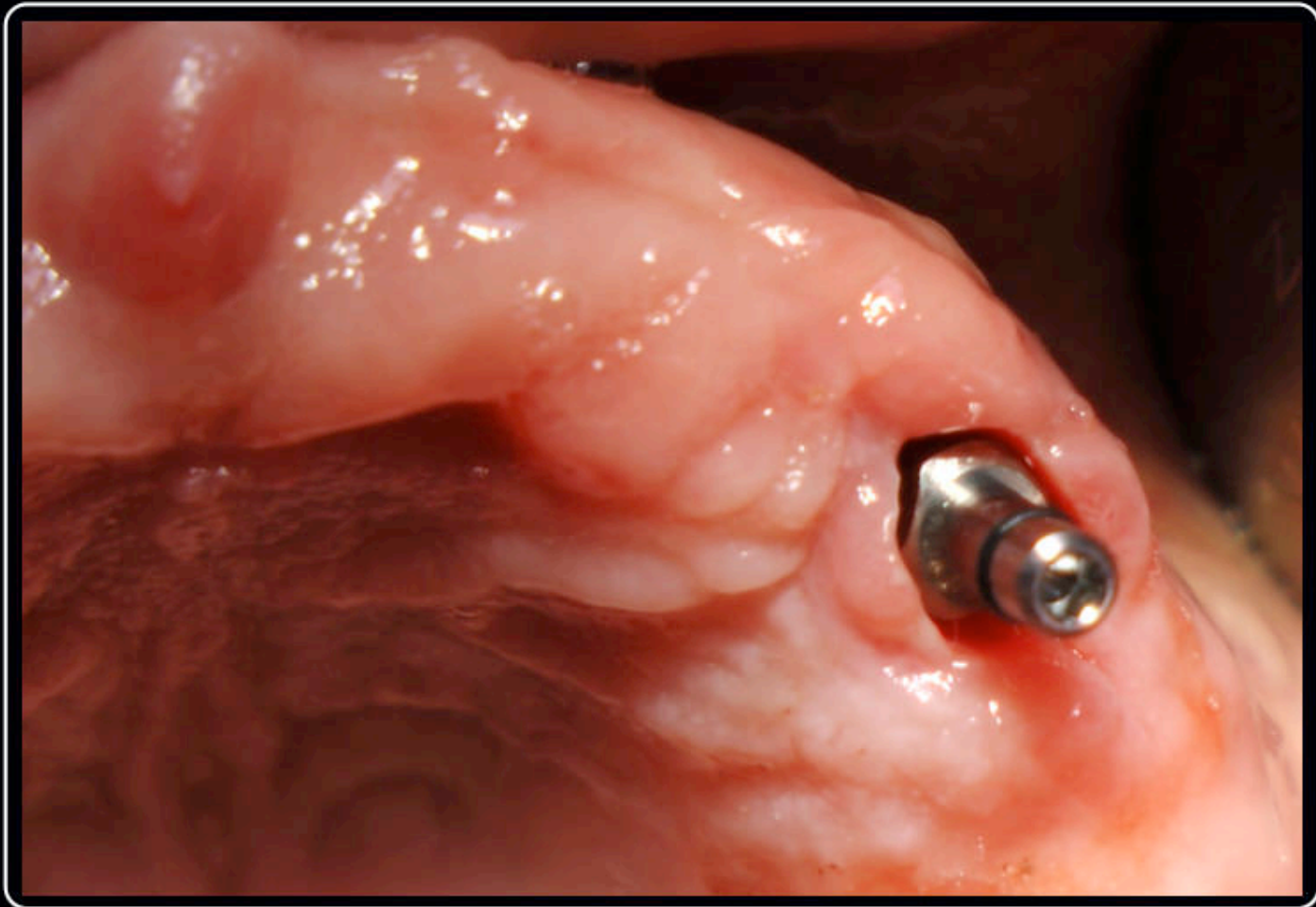


Fig. 4
The Insertion Post of the implant is now repositioned.

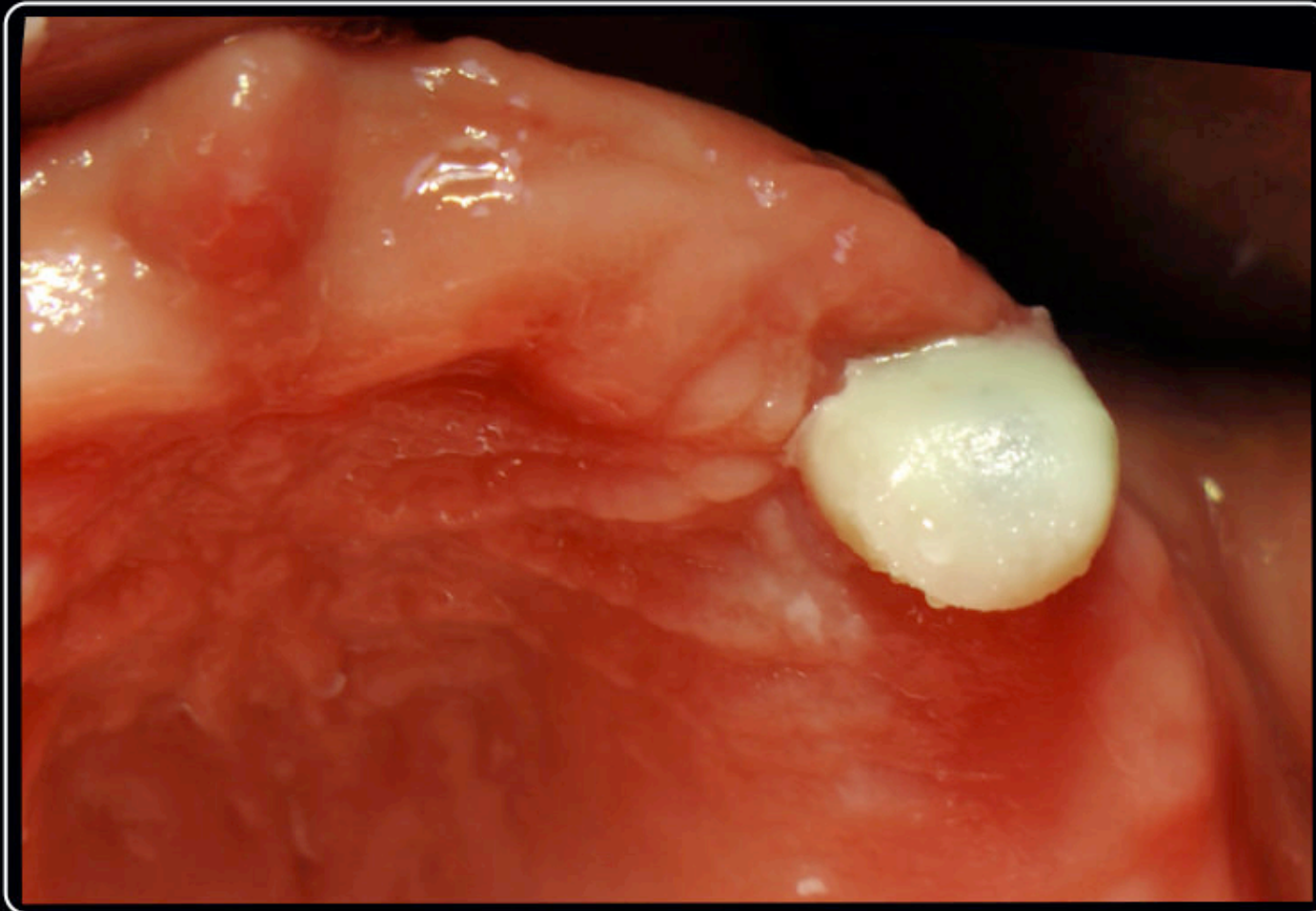


Fig. 5
Dual-Core-Build-Up (Kuraray) was placed inside the crown in the over denture and then the denture was seated in the mouth. When the core was hard, the denture was removed.



Fig. 6

Access was made through the core to release the screw. The assemblage was then removed from the mouth and seated on an analog.



Fig. 7

A closer view of the core portion. The section underneath the core will be added to and refined later in the procedure.

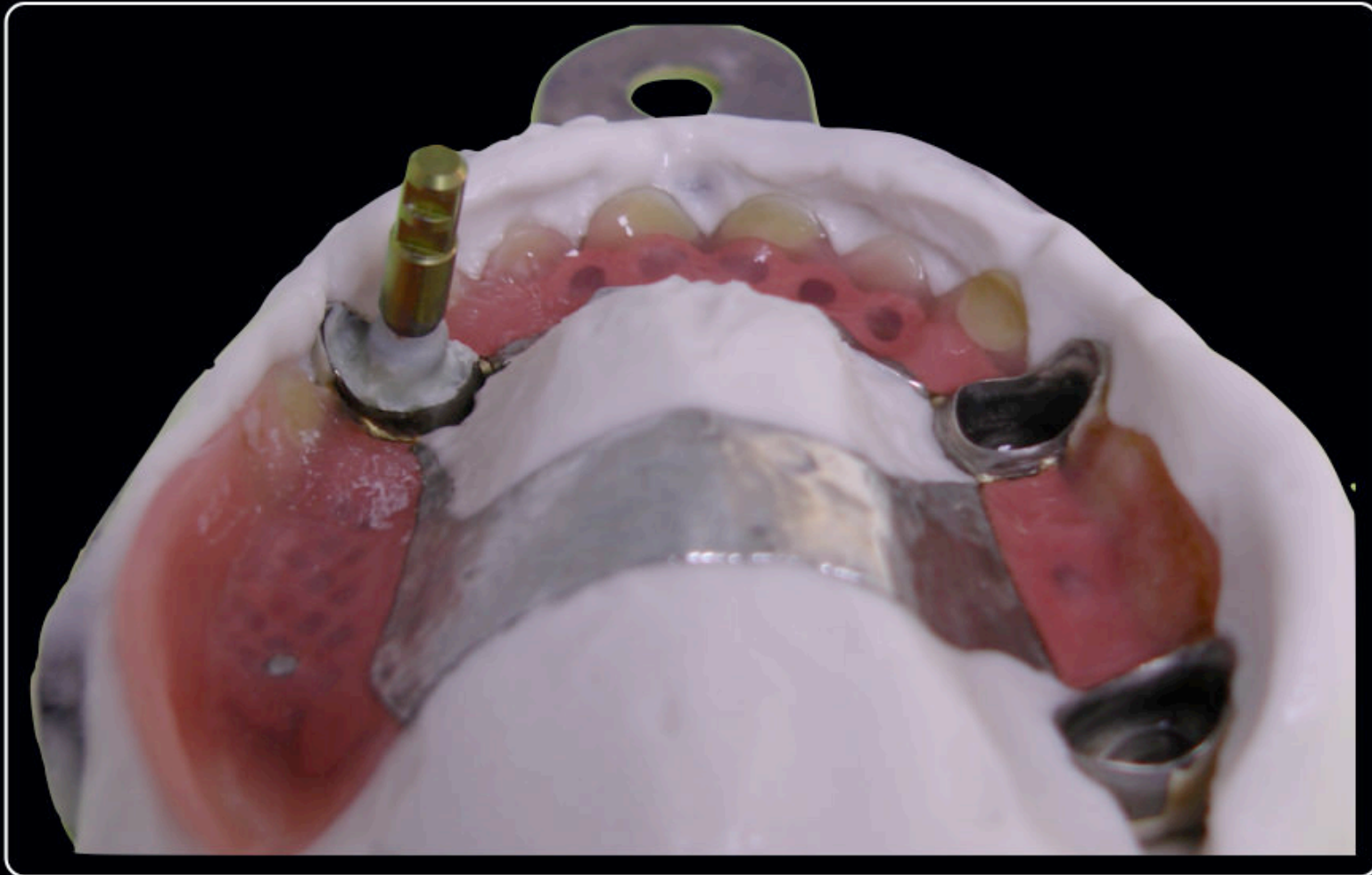


Fig. 8
The core / post /analog assemblage is re-seated in the over denture, which has been “picked up” in an alginate impression.

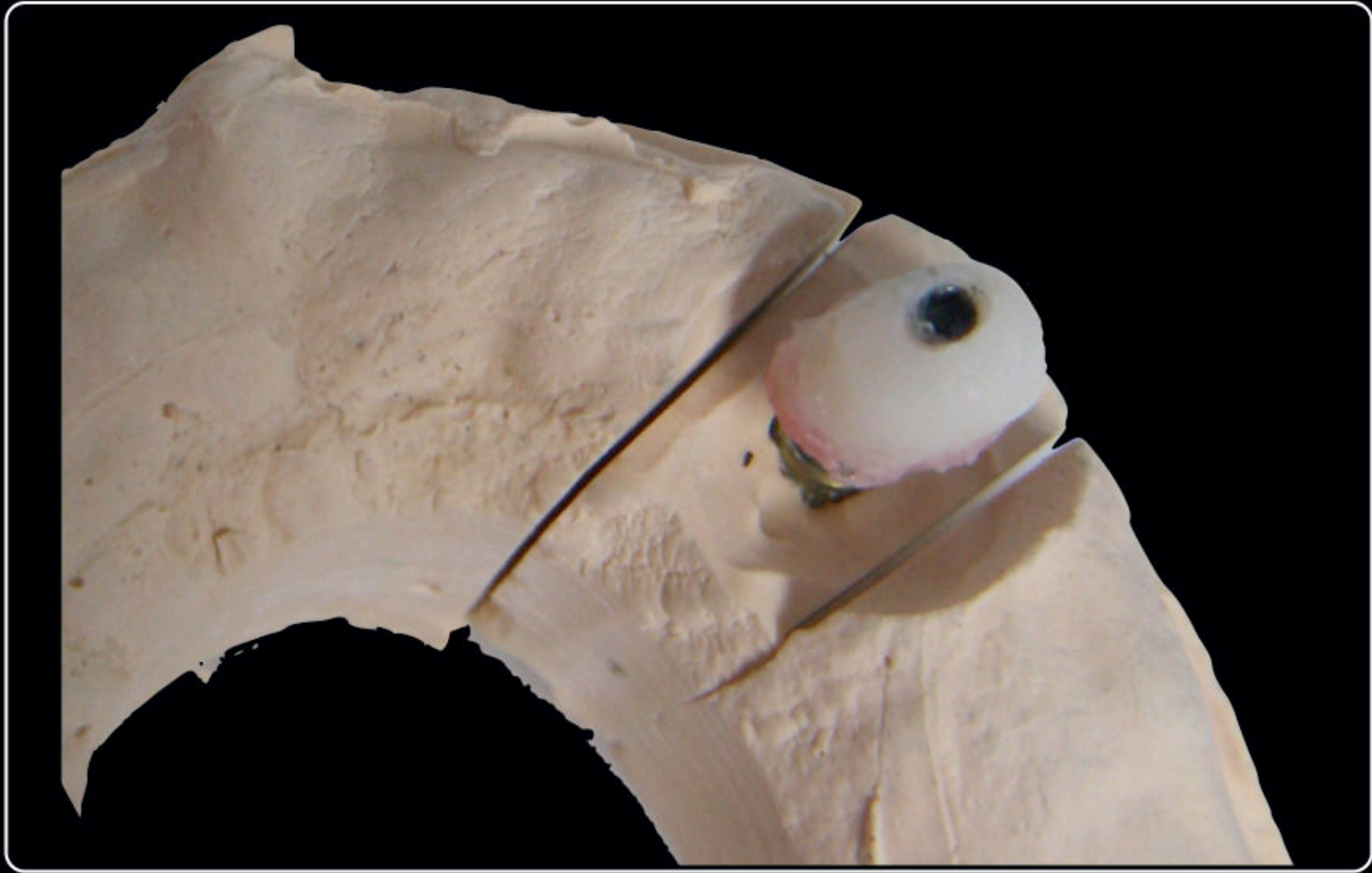


Fig. 9

The master model has the Insertion Post / Impression Device / Composite Core in position.

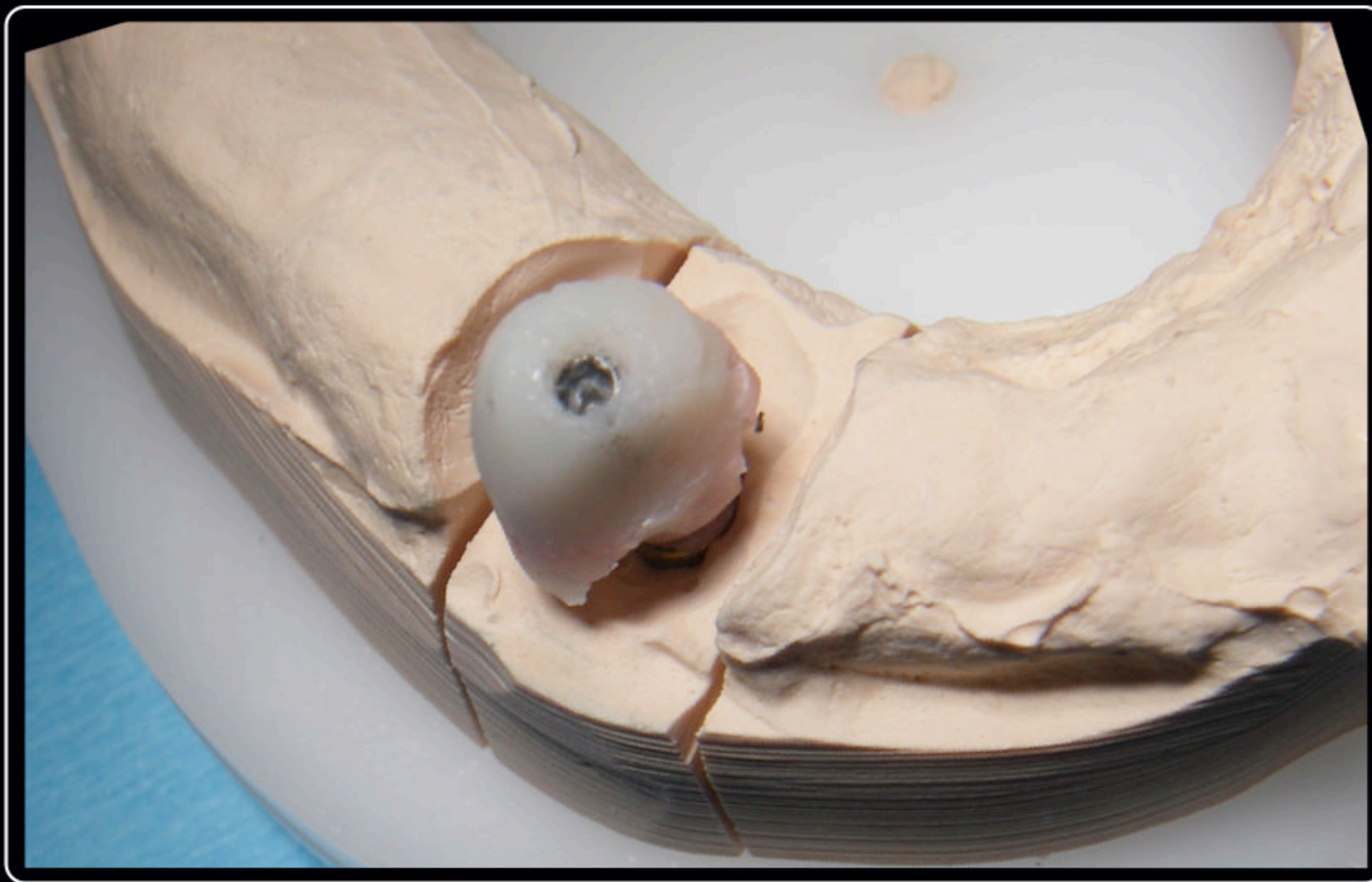


Fig. 10

Now this device can be scanned, retaining the exact shape and location of the core portion. This can be re-produced on a permanent abutment using digital technology.

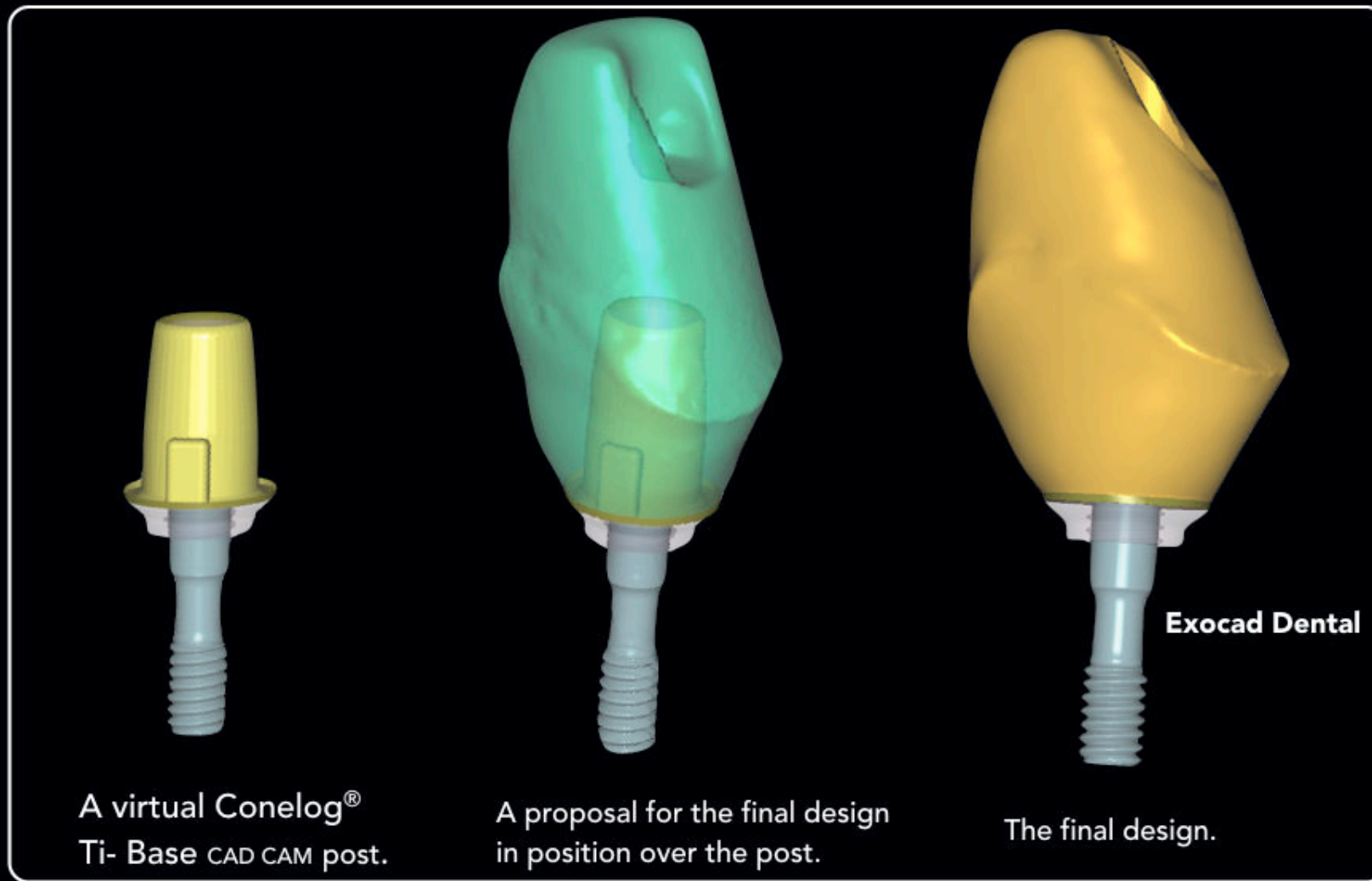


Fig. 11
Development of the final form using Exocad Dental software technology.



Fig. 12

Here is the final post with the finished Zirconia portion in the Master Model. When placed in the mouth, the over-denture fit precisely and this gave immediate stability to the existing reconstruction.

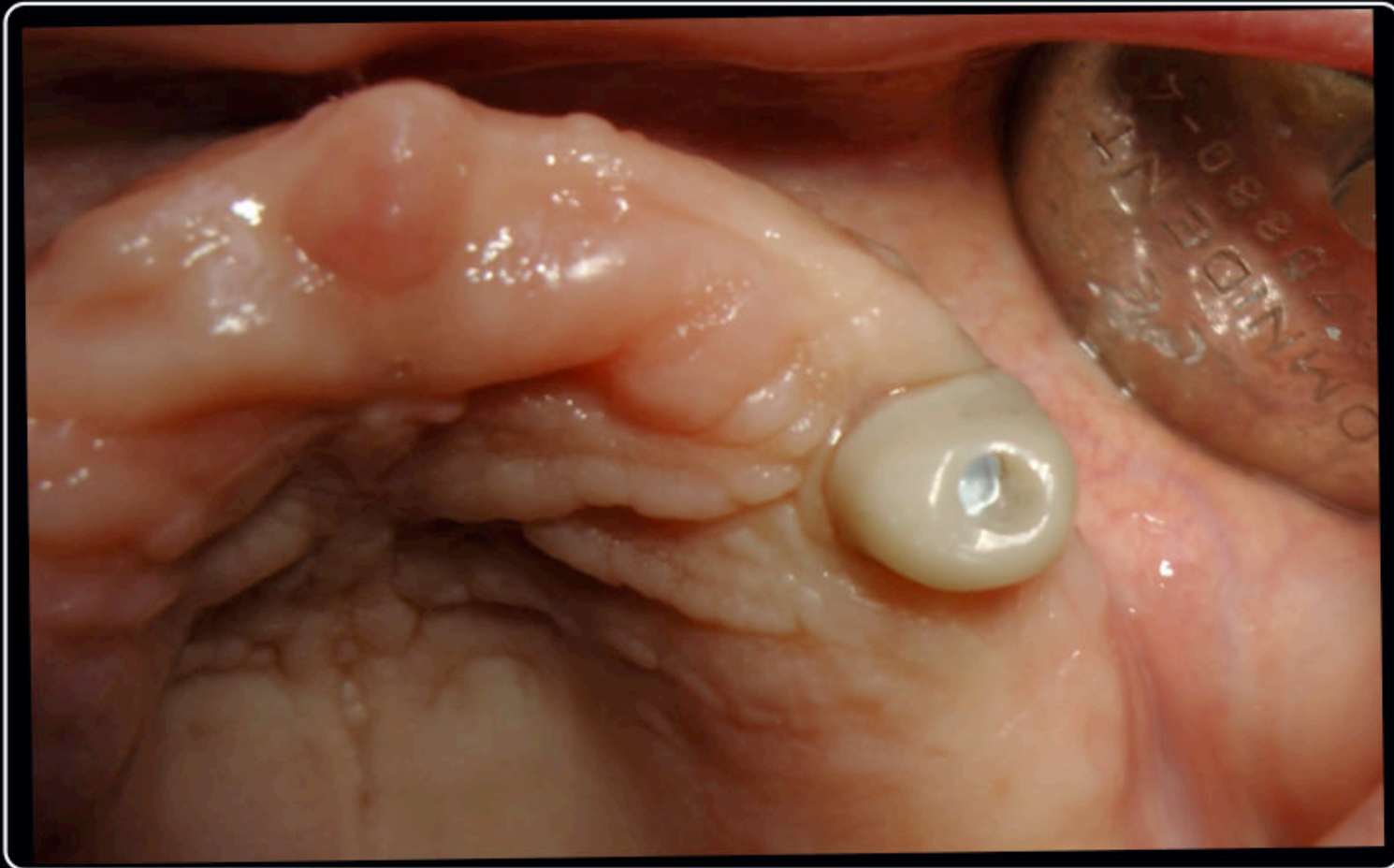


Fig. 13

The assemblage is now seated back into the implant in the mouth where it is able to function well to stabilize the denture.

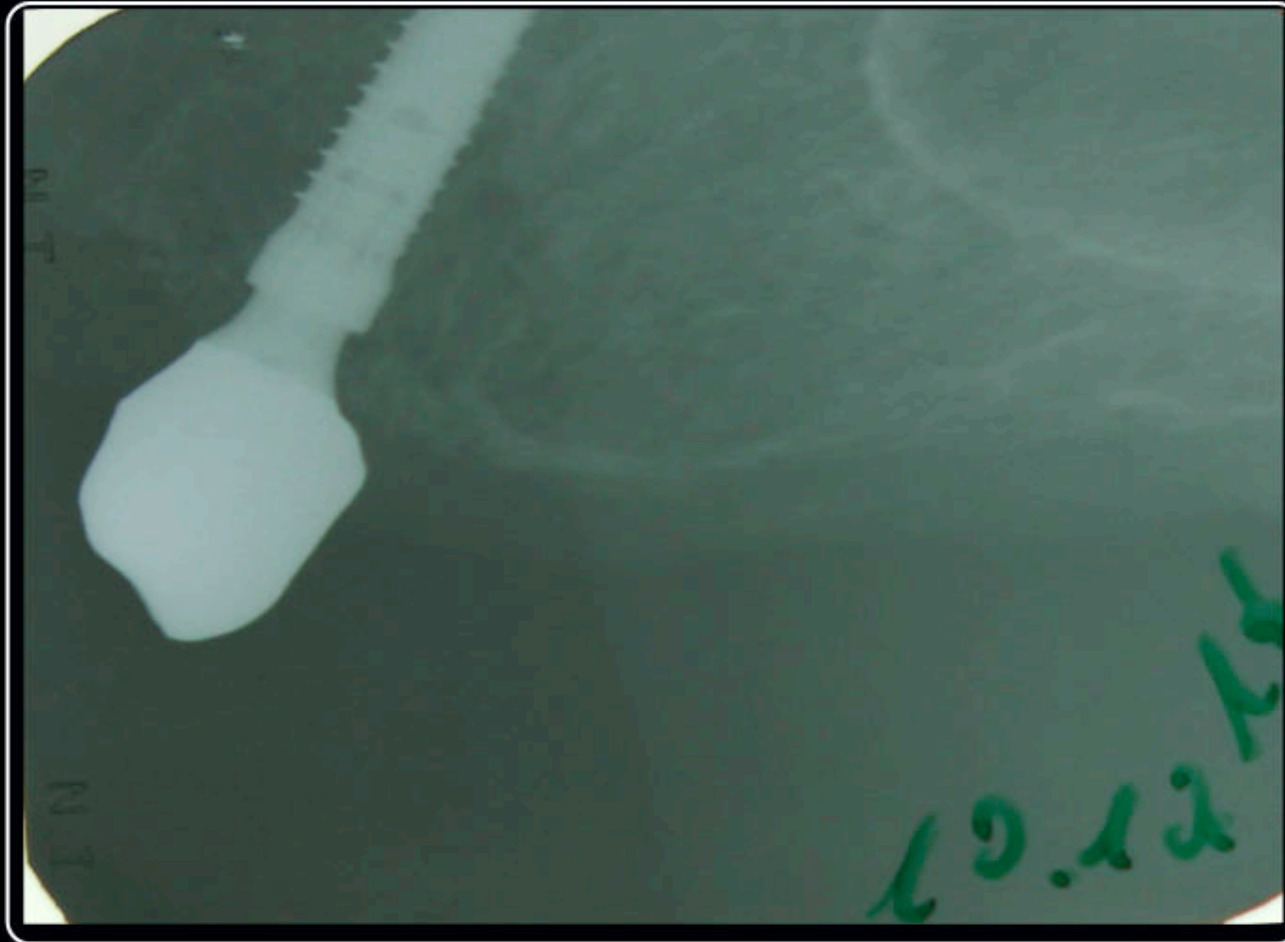


Fig. 14
This view shows a radiograph with the final abutment in place.

DISCUSSION

Anyone who has done a lot of Camlog® or Conelog® implants will have a ready supply of discarded Insertion Posts. They are useful to keep around just in case they are needed. Traditionally, the sole and rather rare use is for removing implants by de-rotation. Finding another use for them is difficult. It would be nice if they could be used for Provisional Restorations, but the Screw is not removable which makes this difficult.

Using them as an Impression Device as shown in this presentation is quite simple, fast, precise and effective. It depends on being able to reproduce the core in the right relationship to the implant. With conventional dental technology this is quite complex and prone to complications, but with the modern digital scan / design / mill technological processes becoming more and more common it is relatively simple.

CONCLUSION

A failing tooth jeopardized a complex and expensive reconstruction. A key support was lost and this made the precision telescopic over-denture unstable. By placing an implant in the extraction socket with an emergence right up under where the telescope lay, when the implant was integrated, it was possible to build an abutment which fit right into the telescope. Function was restored immediately.

This technique has many potential applications in situations where a crowned tooth is failing. Using this protocol there is reason to believe that it would be possible to remove the failing tooth, to retrieve the pre-existing crown, to place an implant and then to retrofit an abutment into the crown to support the original crown.

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