

Computer-assisted implant planning: a review of data registration techniques for the creation of a virtual patient

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BACKGROUND

A comprehensive virtual implant planning approach combines radiographic, clinical, restorative, surgical, and laboratory data to create a virtual patient dataset. It enables a comprehensive diagnosis, facilitates precise treatment planning and supports the computer-aided clinical execution of the treatment¹⁻⁶.

AIM

To provide an overview of the available **techniques to integrate the different data** containing the **clinical situation**, the **intended iFDP** design and the **radiological information** for **comprehensive virtual implant planning**.

References

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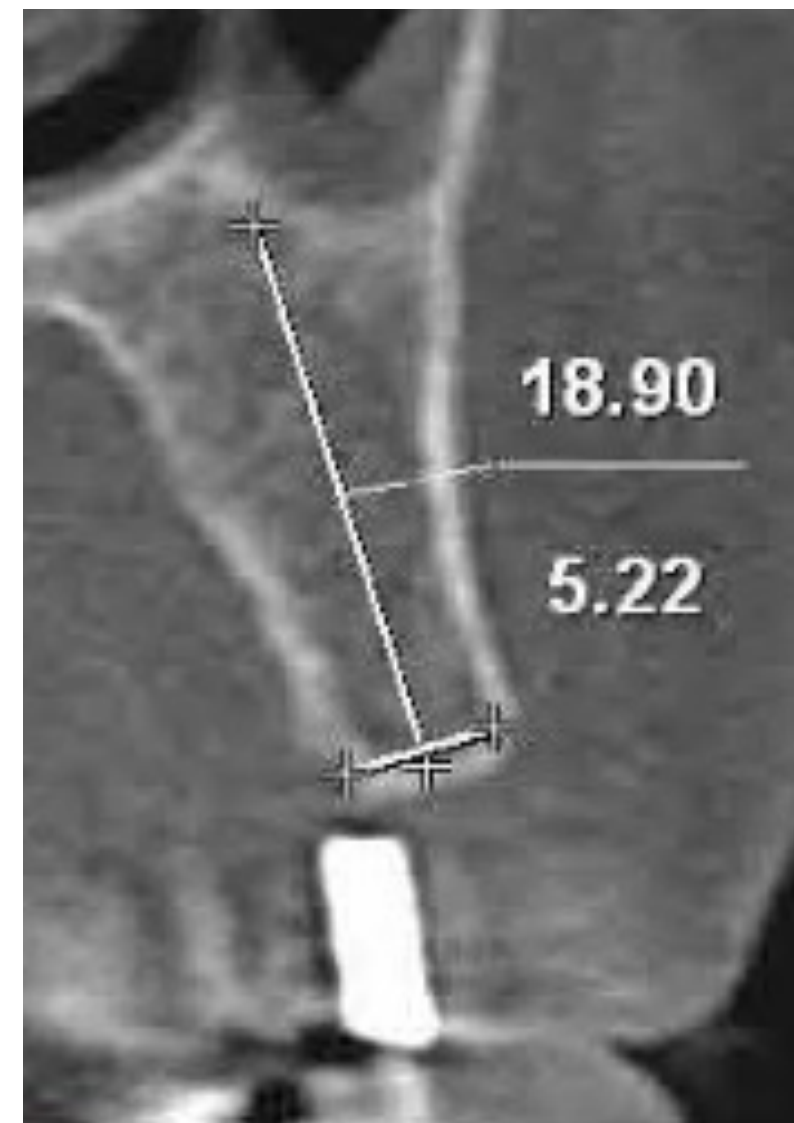
TECHNIQUES FOR DATA REGISTRATION

A) Removable radiographic templates

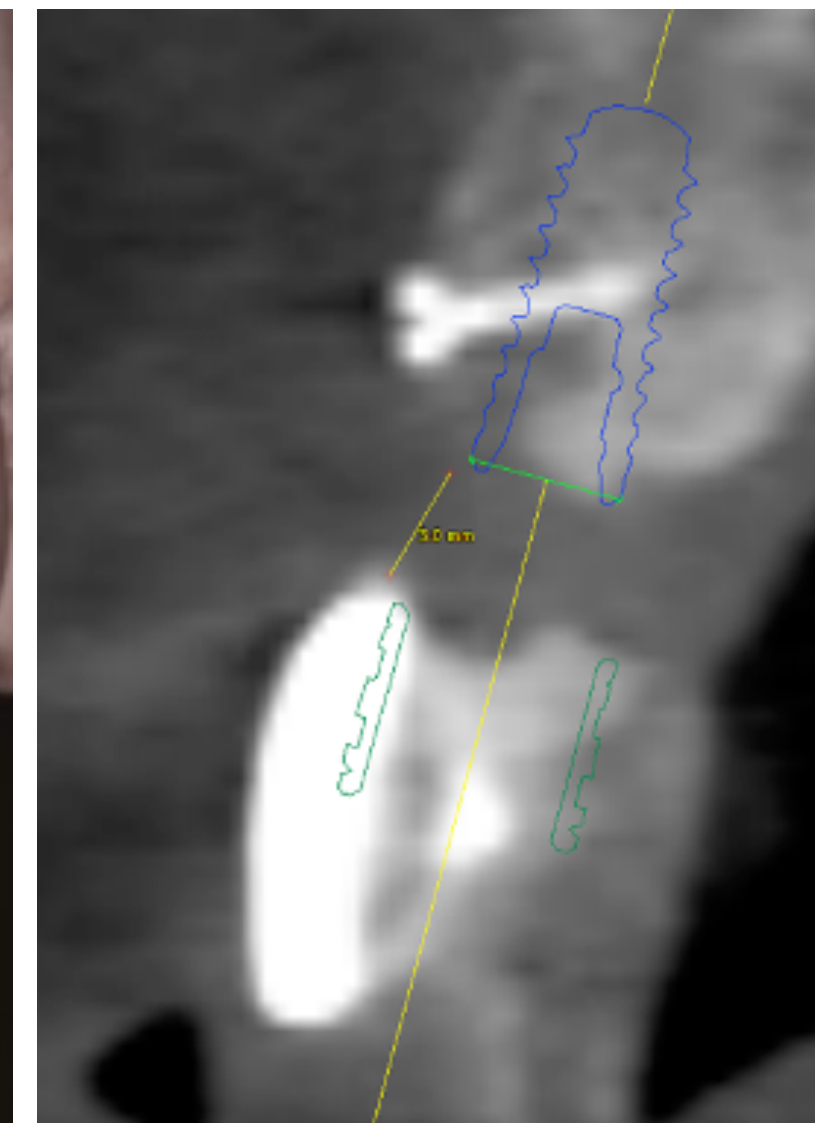
Indication

For fully or partially edentulous patients
who lack sufficient tooth references for intraoral surface scan registration

With radiographic markers



With radiopaque teeth



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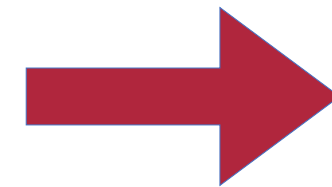
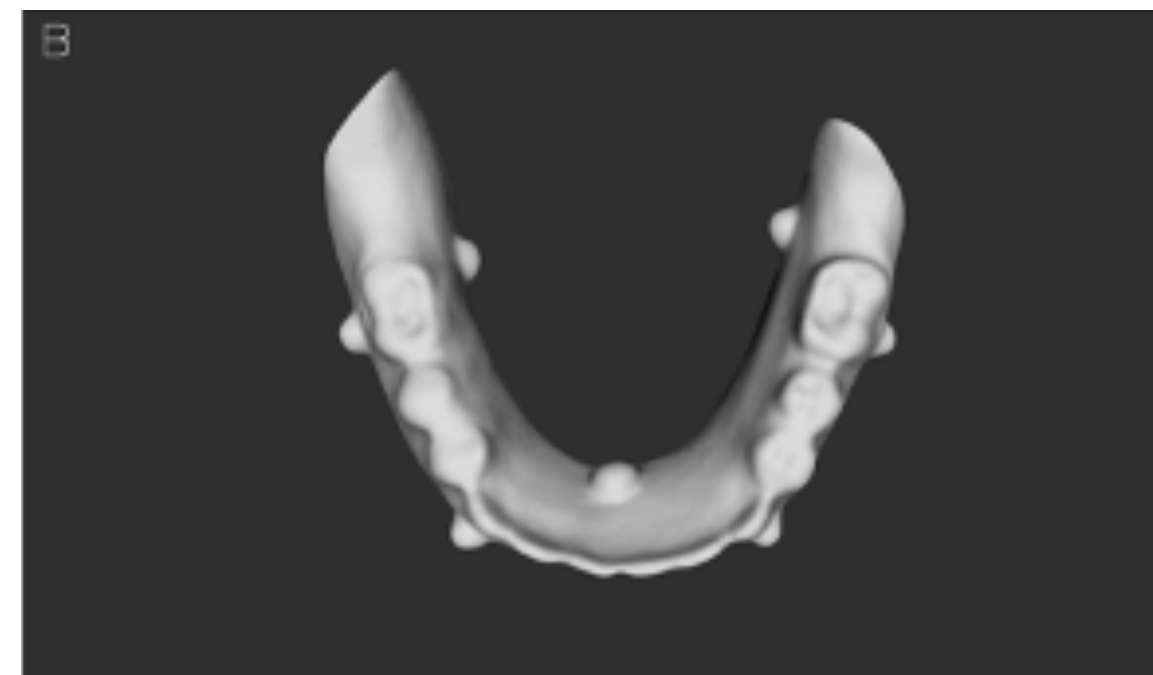
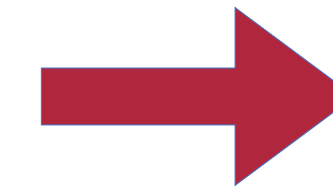
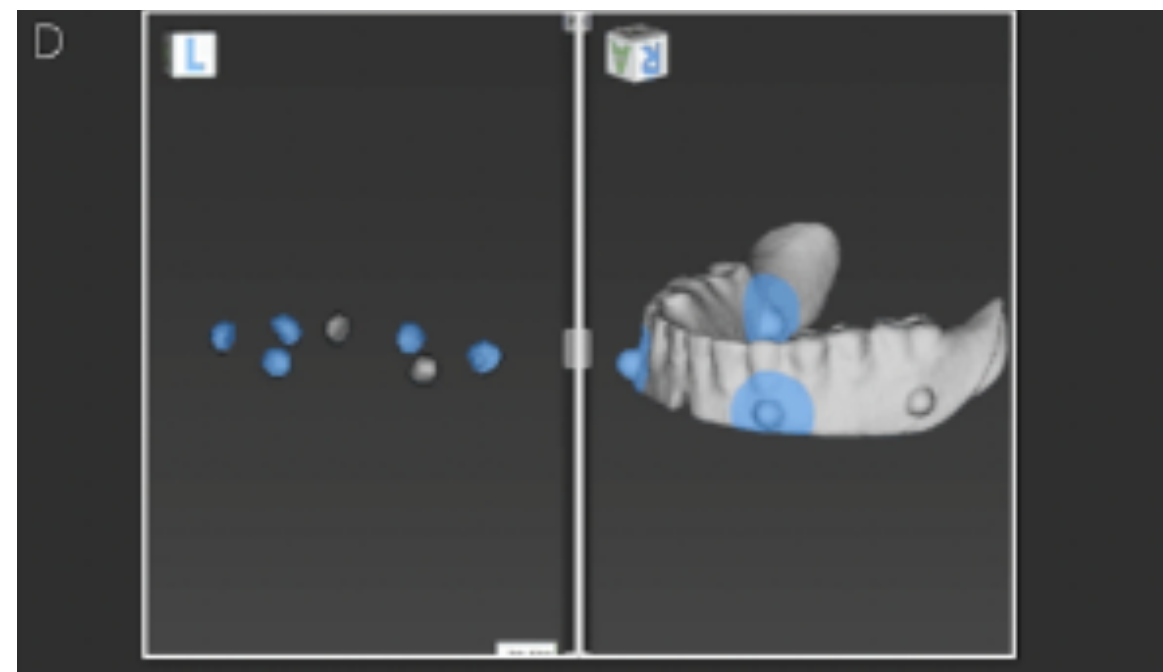
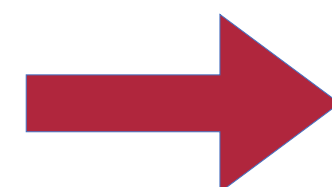
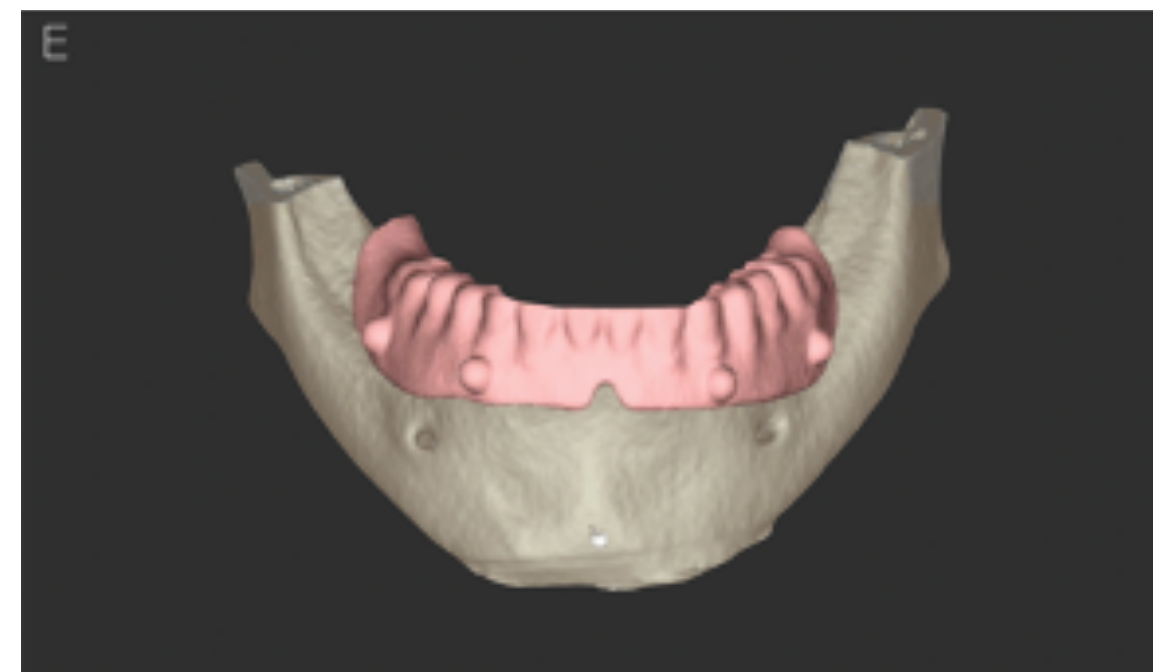
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Dual scan technique



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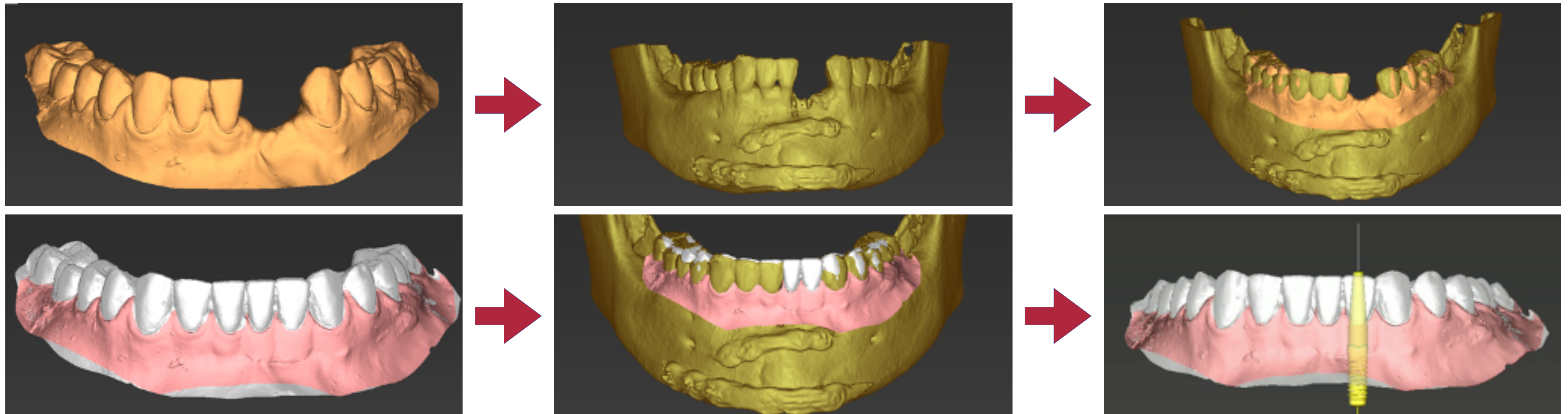
TECHNIQUES FOR DATA REGISTRATION

B) Without removable appliances

Indication

For partially edentulous patients
with well-distributed identifiable tooth references

Registration using anatomical reference points



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TECHNIQUES FOR DATA REGISTRATION

B) Without removable appliances

Indication

For partially edentulous patients lacking sufficient tooth references
or where scatter may hinder isolation of tooth references in the CBCT

Registration using intraoral fiduciary markers

