

HYBRID-HYRAX BASED SARME, WORKFLOW AND TREATMENT OUTCOME - CLINICAL CASES -

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D. Paddenberg, C. Fode

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Aim:

The aim was to establish a reliable, effective and minimally invasive method for surgically assisted rapid maxillary expansion (SARME) beside TPD and band based appliances.

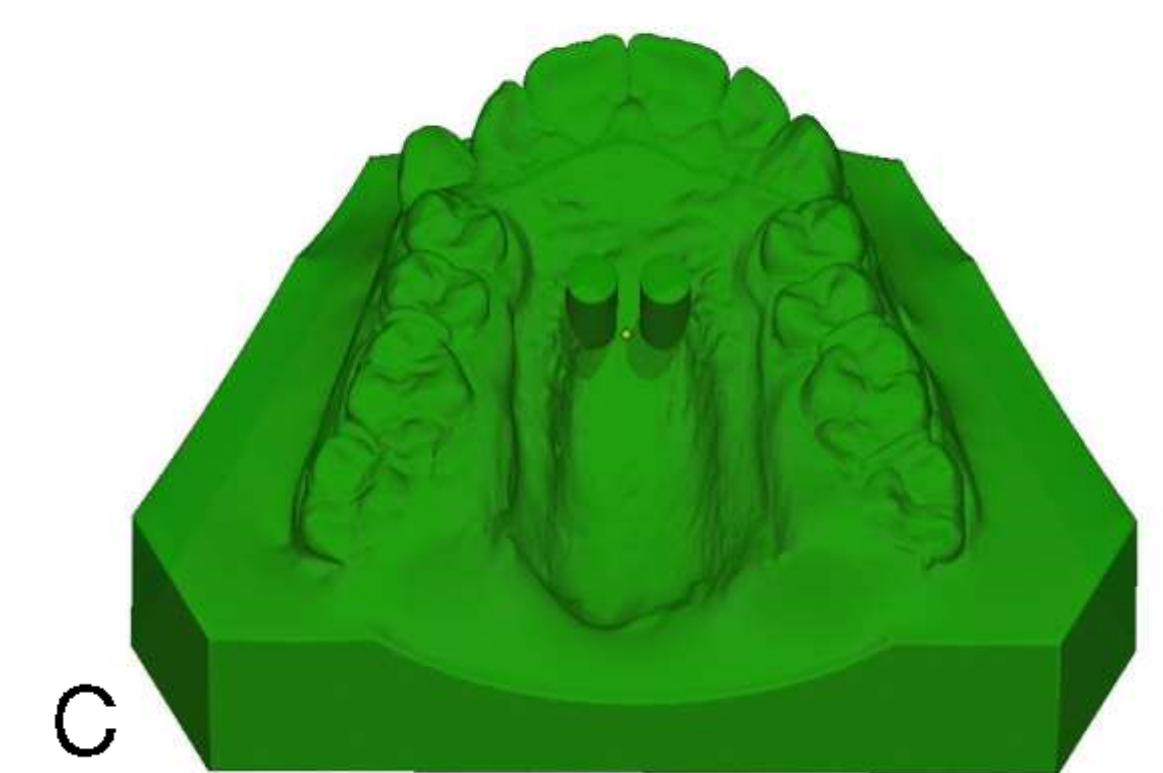
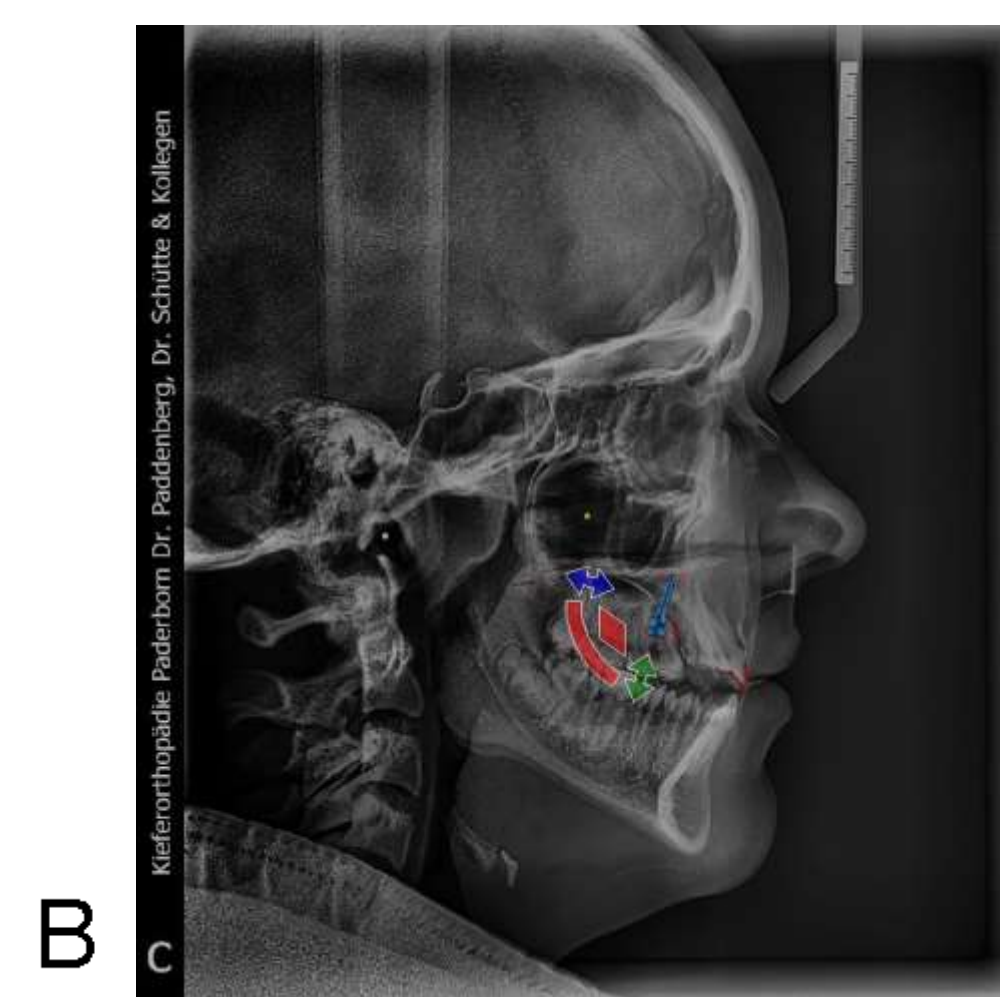
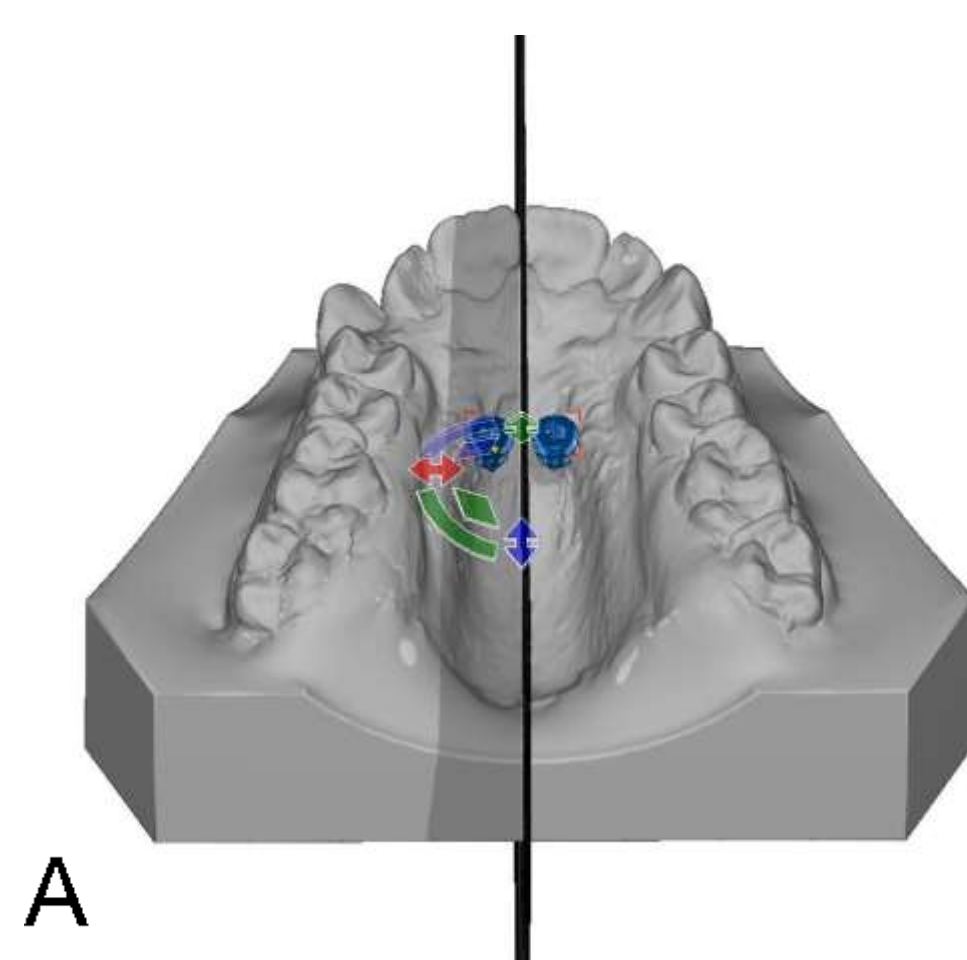


Material & Methods:

A hybrid hyrax was incorporated to elaborate surgically assisted RME: description of workflow, monitoring of treatment progress, evaluation of patients' acceptance based on several documented treatment - cases.

Digital workflow

- Intraoral scanned maxilla and lateral cephalogramm superimposed to determine the size and position of the mini-implants (A,B)
- Positioning model (C)



Laboratory workflow

- 3D printed model with drilling jig (D)
- Laser welding of the hybrid hyrax parts (E)
- Completed appliance (F)



Clinical workflow

- Insertion of the mini-implants and the hybrid hyrax (G)
- Status after SARME (H)
- Tooth-bone-borne stabilisation (I)



Results

A precise and symmetric insertion of TADs is guaranteed by using a matching procedure. The primary surgical complexity is minimal, the appliance is smaller and intraoral restrictions are reduced. The surgeon doesn't face any restrictions when disconnecting the maxilla in the Le Fort I - level.

We did not find any loosening or loss of TADs, even if the region of insertion was very close to the palatal suture. The expansion was effective at good acceptance among patients. After dismantling of the SARME- appliance the TADs can easily be used for further transverse stabilisation.

Conclusion

The hybrid hyrax proves to be an effective appliance in surgically assisted RME treatment. The well-known disadvantages of band based SARME and TPD can partially be eliminated.