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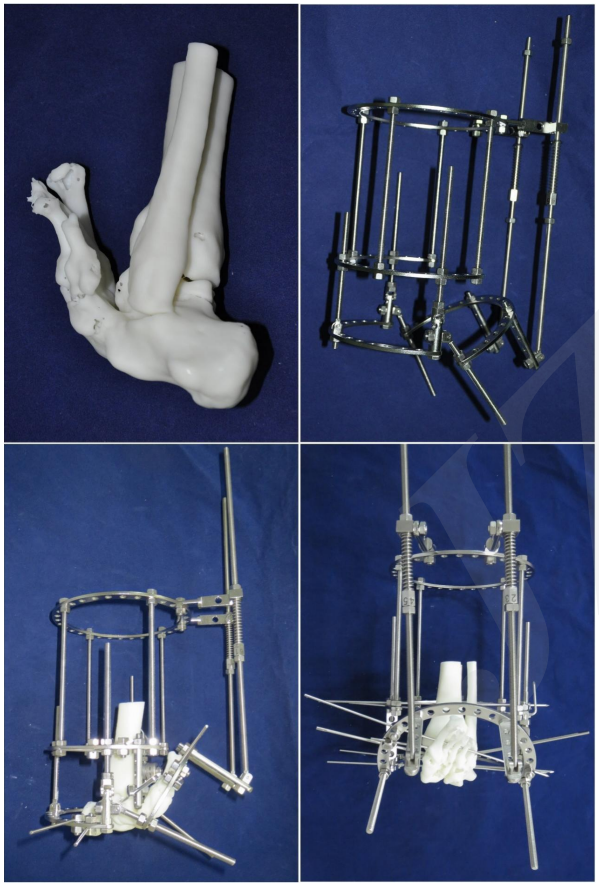
3D-printed models improve surgical planning for correction of severe postburn ankle contracture with an external fixator

Key words: Ankle contracture; Ilizarov; Postburn contracture; 3D printing; Surgical planning

Research Summary

The purpose of this study was to evaluate the surgical planning process for this procedure with patient-specific 3D-printed models (3DPMs):



Surgical planning based on the 3DPMs

(a): Lateral view of a 3DPM;

(b). Preconstructed Ilizarov frame;

(c): Lateral view and

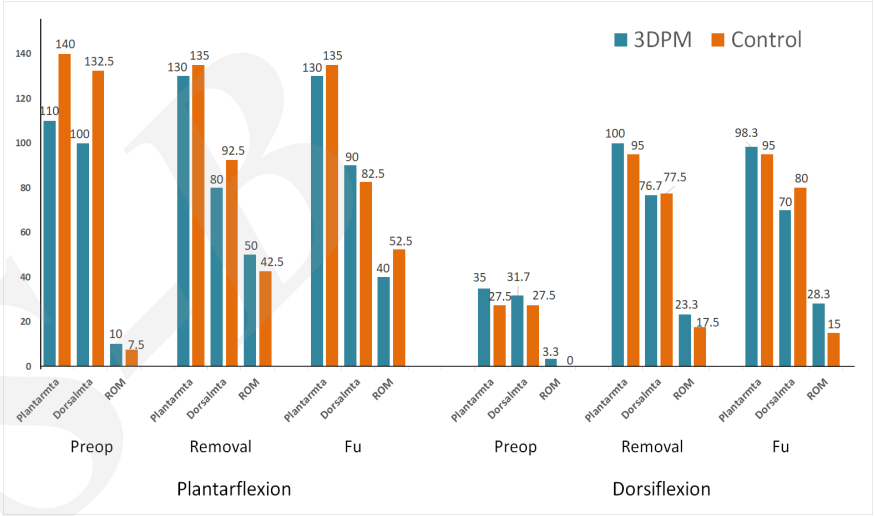
(d): Anterior view after the frame was applied on the 3DPM in surgery rehearsal.

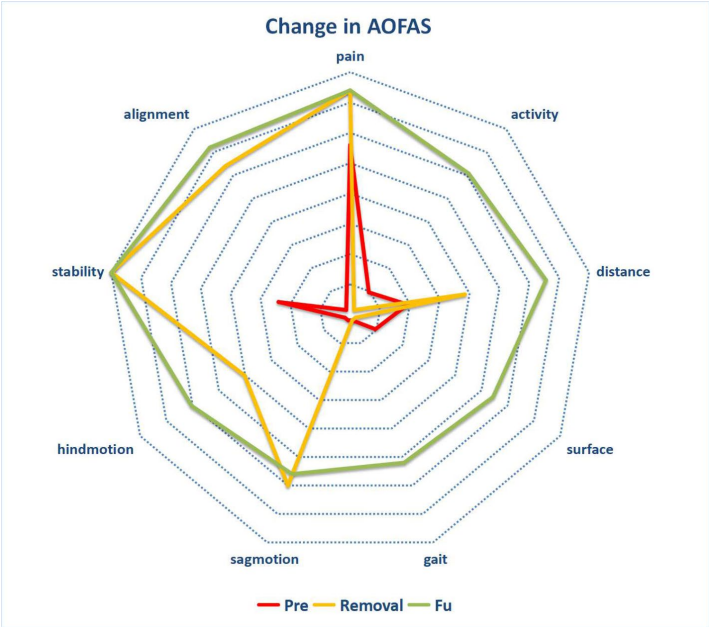
Innovation points

- **Introduce** 3DPM-assisted surgical planning into the treatment of Severe Postburn Ankle Contracture.

- **Compare** operation duration, ROM, and AOFAS scores between 3DPM-assisted and traditional surgical planning

- **Provide** a novel method for surgical planning.





Innovation points

Several advantages have been found in 3DPM-assisted surgical planning group.

- **Reduced operation duration**
- **Increased patient satisfaction**

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