



**AMANDEEP**  
**HOSPITALS**



IN PARTNERSHIP WITH  
**Ujala Cygnus**  
— HOSPITALS —  
Excellence Made Affordable

## Tibial Corrective Osteotomy



Tibial Deformity Correction Guide

## About case



Anterior View



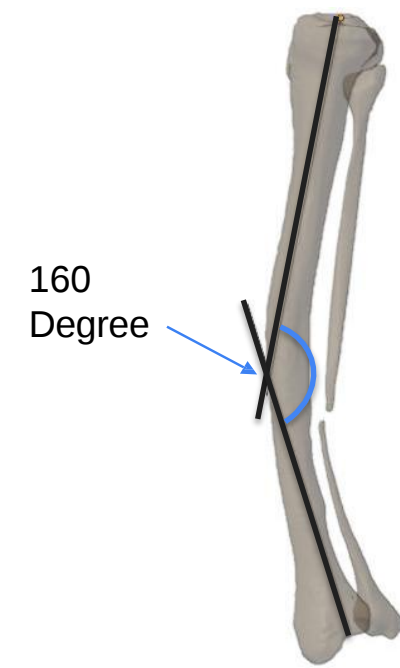
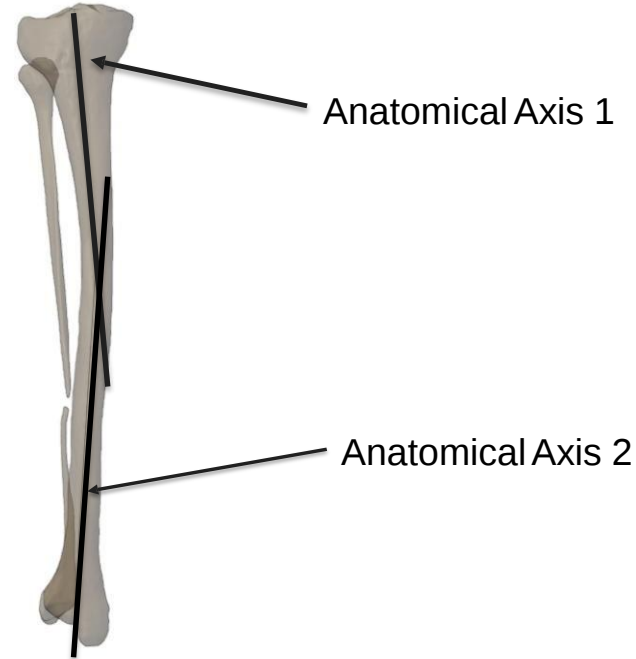
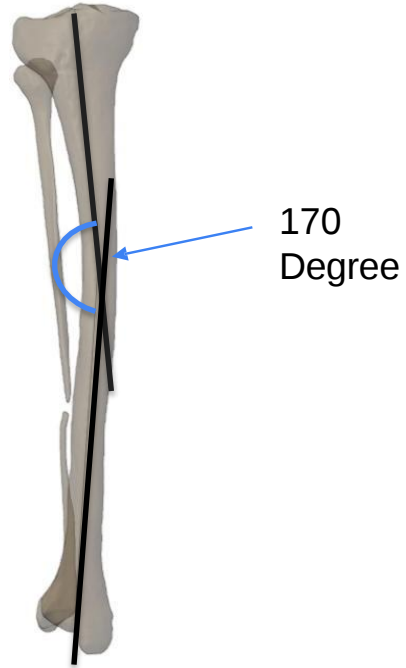
Lateral View



Medial View

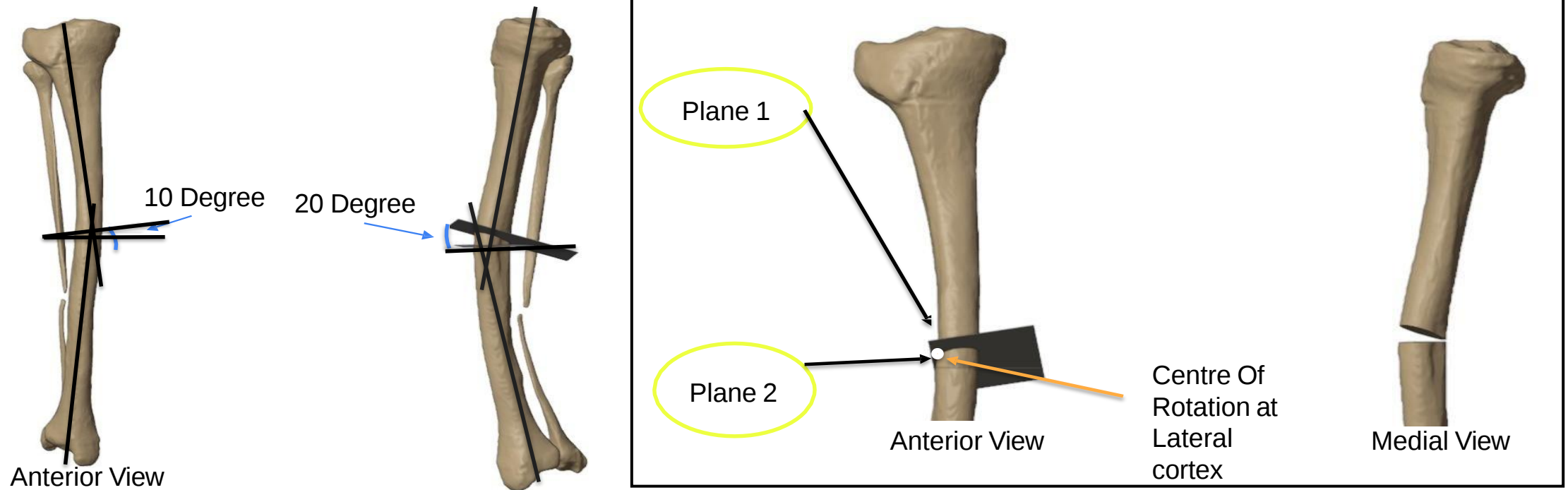
- A 17-year-old male patient presented with difficulty bearing weight on the right leg and progressive anterior bowing of the right leg. Clinical assessment confirmed right tibial anteromedial bowing deformity, for which a corrective osteotomy was planned.
- After detailed evaluation, 3D imaging and a patient-specific 3D model were used to assess the deformity and plan the corrective osteotomy, confirming a custom cutting jig as the most suitable solution.

## Clinical challenges



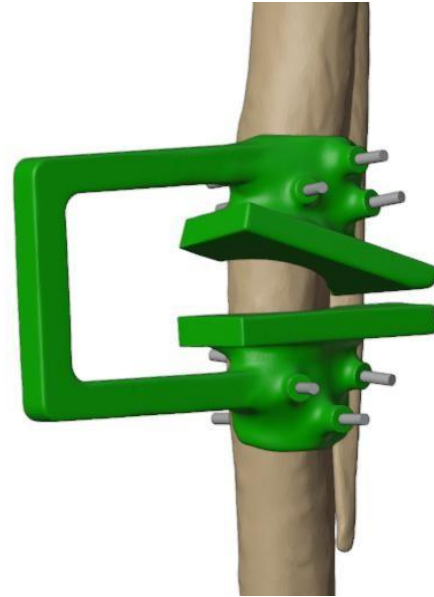
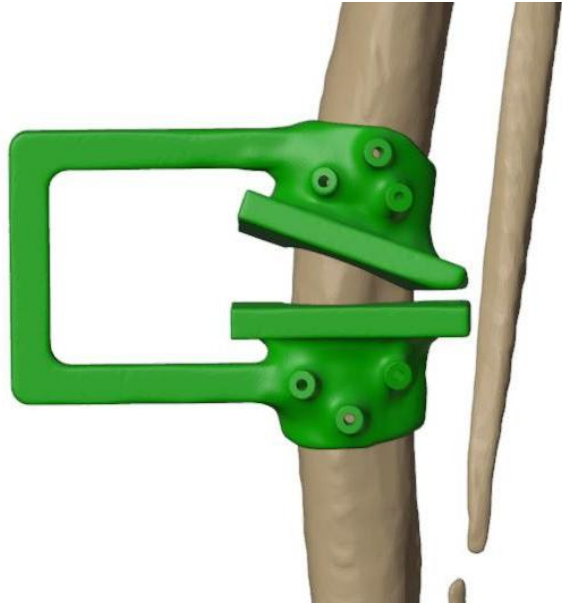
- Previous fracture and surgical intervention resulted in progressive anteromedial bowing of the right tibia, leading to abnormal limb alignment and altered biomechanics.
- The deformity caused uneven load distribution across the lower limb, resulting in pain, difficulty bearing weight.
- Careful planning was required to identify the exact site and angle of correction, ensuring proper alignment of the leg and improving the patient's walking ability.

## Strategic planning beyond standard solutions

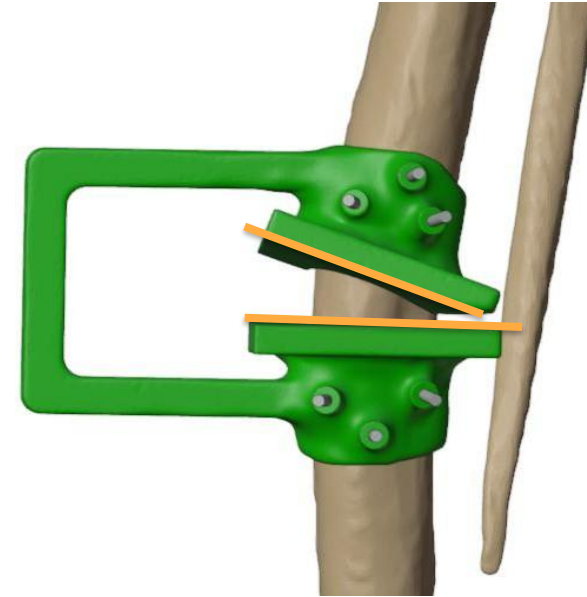


- CT-based 3D reconstruction provided a detailed evaluation of the tibial bowing deformity, Cora- accurately defining its location, degree of severity, and anatomical characteristics.
- The digital plan enabled preoperative simulation of the deformity correction, allowing precise evaluation of the osteotomy and anticipated alignment outcome. This ensured accurate restoration of the tibial mechanical axis, minimized intraoperative uncertainty, and facilitated precise surgical execution.

## Precision Through Case Planning – Cutting jig



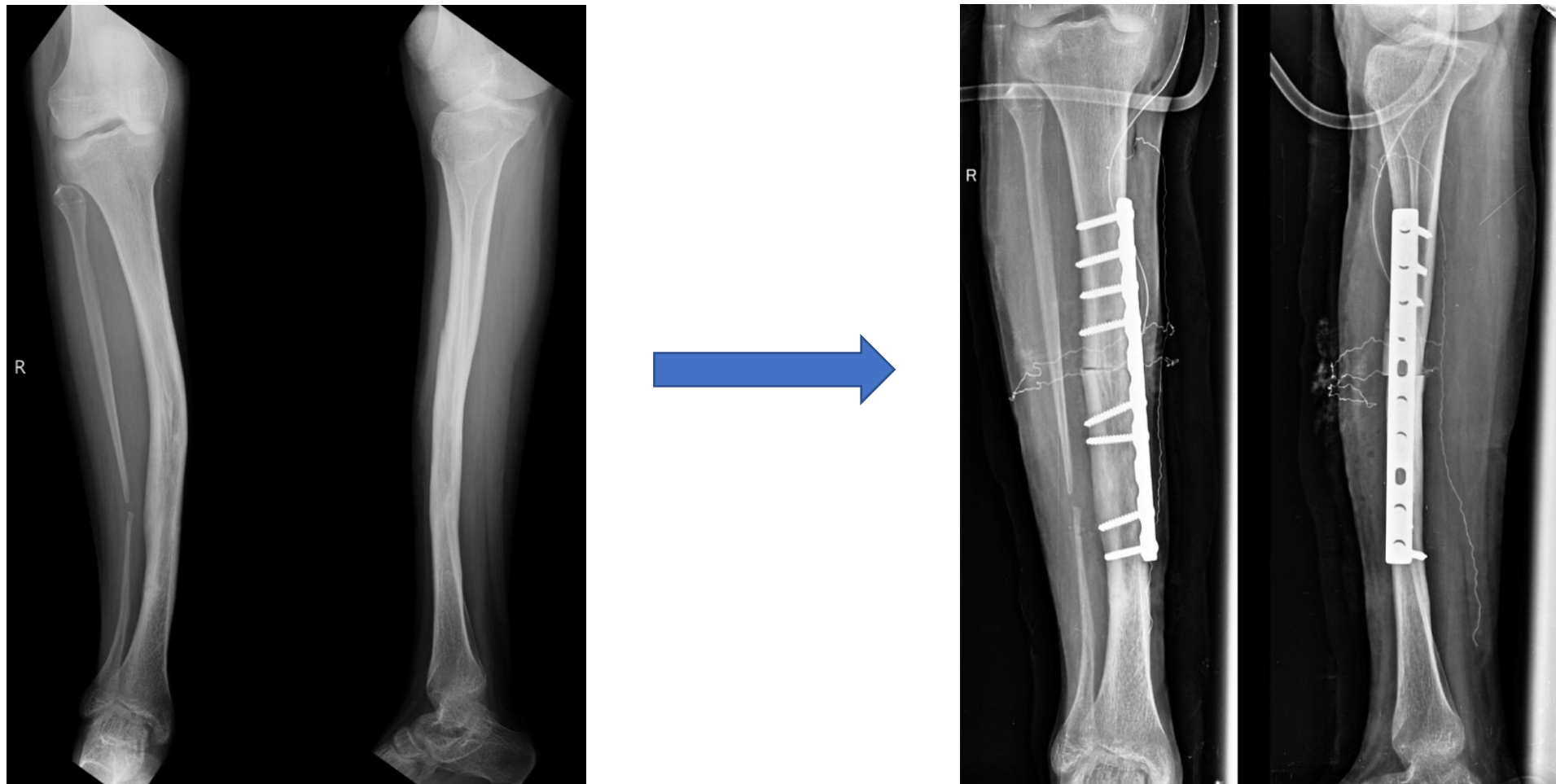
K-Wire Placement



Cutting Plane

- A patient-specific cutting jig was carefully designed and 3D printed using BioMed Amber, a biocompatible material, to enable precise deformity correction and ensure accurate execution of the preoperative surgical plan during the procedure.
- This patient-specific cutting jig was meticulously designed to facilitate accurate deformity correction, while guiding precise bone cuts intraoperatively for attaining proper alignment of the lower limb

## Clinical outcomes



- This innovative approach effectively addressed the complex anatomical challenge and resulted in notable radiological and clinical improvement. The use of 3D-printed patient-specific cutting jig was instrumental in enhancing surgical precision and contributing to a successful patient outcome.