AMANDEEP HOSPITALS

IN PARTNERSHIP WITH Ujala Cygnus HOSPITALS
Excellence Made Affordable

Corrective Osteotomy

Femur Limb Correction cutting jig

About case

Anterior View

Lateral View

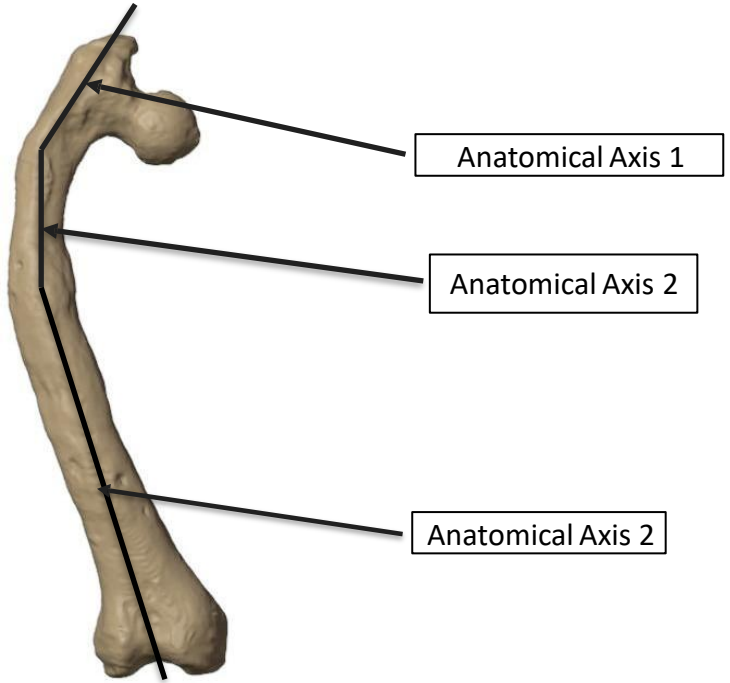
Posterior View

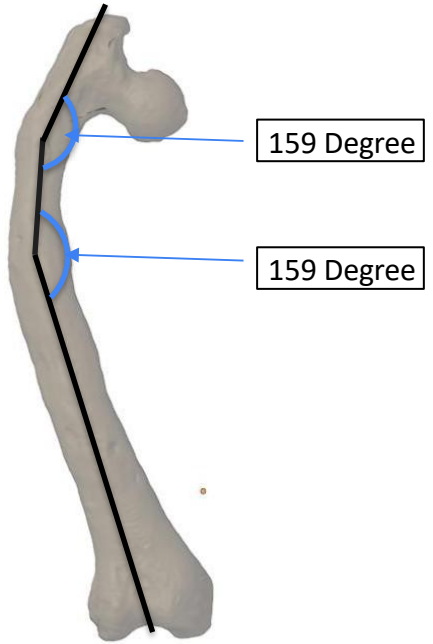
- A 35-year-old female presented with chronic right hip pain worsening over the past 7–8 years, especially during walking and running. Clinical evaluation revealed Shepherd’s deformity due to Fibrous Dysplasia, causing a complex proximal femoral deformity.

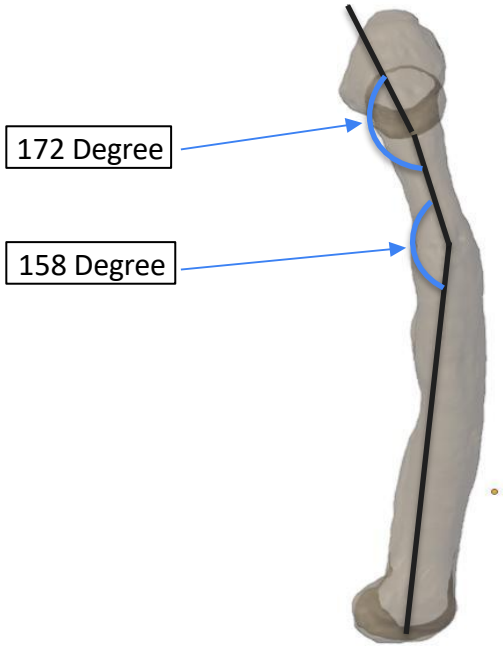
- After detailed evaluation, 3D imaging and a patient-specific 3D model were used to assess the deformity and plan the corrective osteotomy, confirming a custom cutting jig as the most suitable solution.

Clinical challenges

Pre – op condition



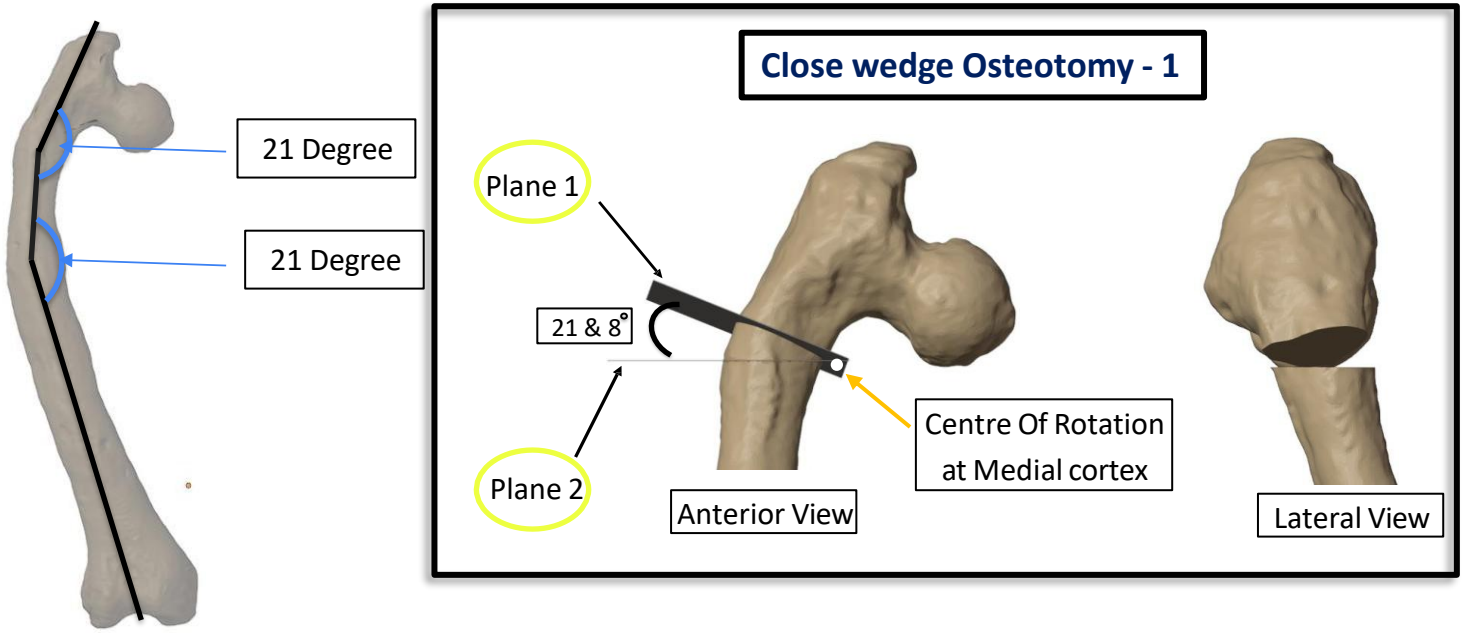




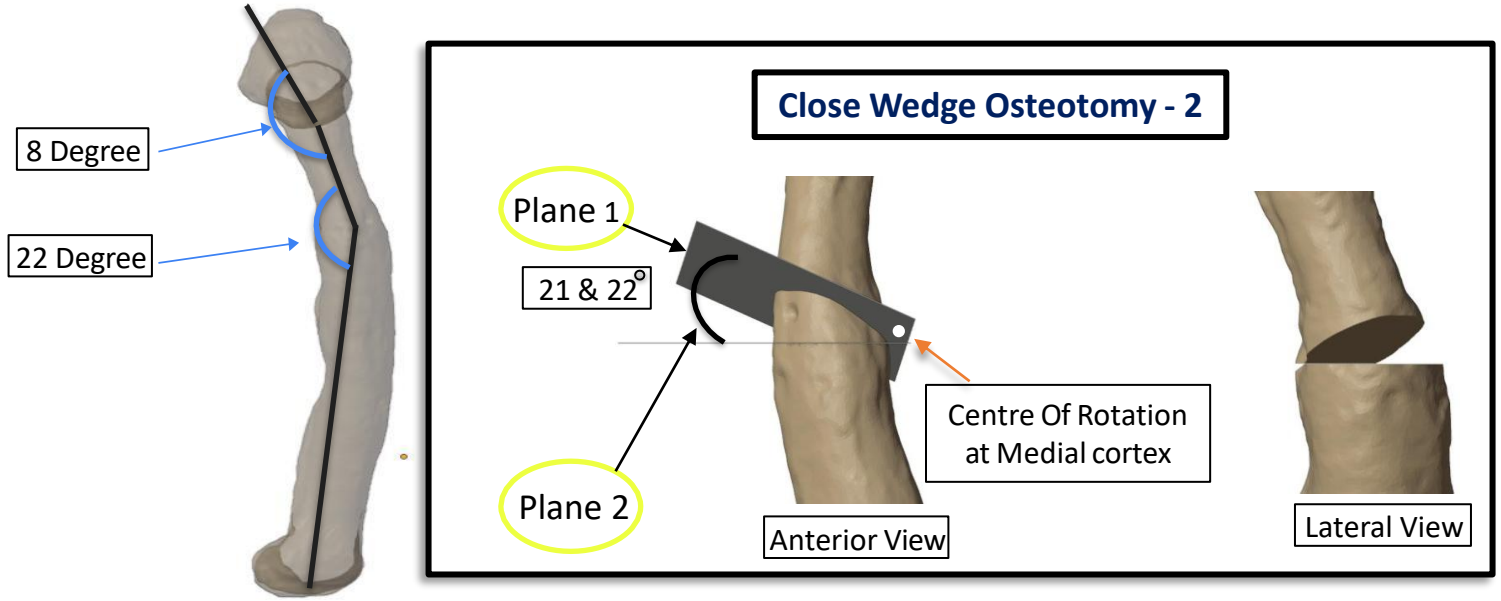
- The primary challenge was the replacement of normal medullary bone with soft fibrous tissue, significantly compromising bone quality and making stable fixation with conventional orthopedic implants difficult.

- Correcting the deformity while achieving and maintaining a stable, long-term fixation is particularly challenging due to the complex three-dimensional bowing of the bone.

Strategic planning beyond standard solutions

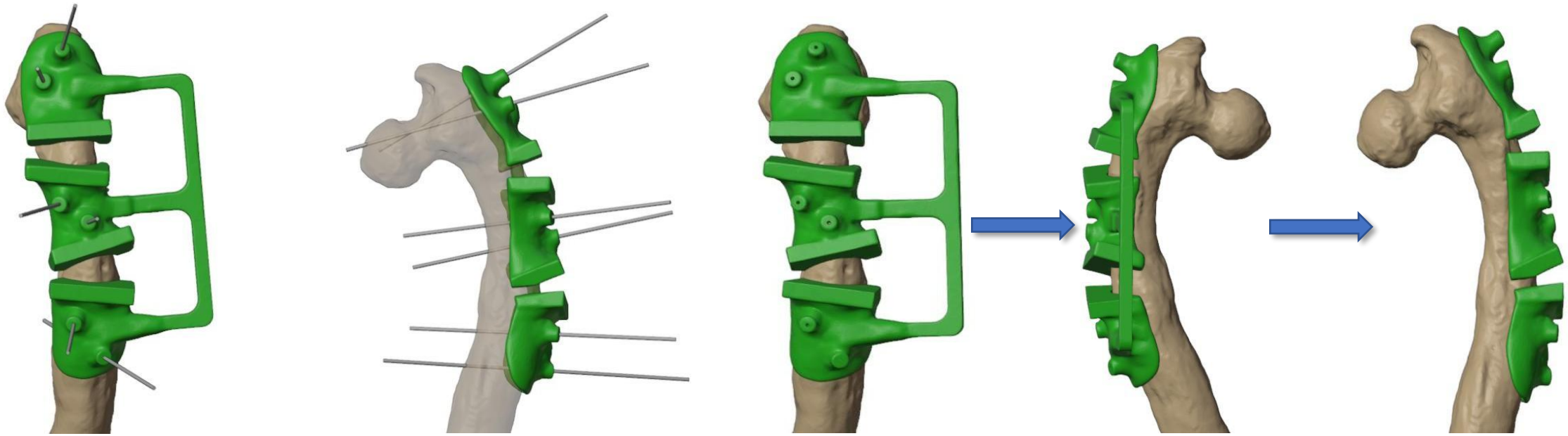


- To address this clinical challenge, a CT-derived, patient-specific 3D surgical planning was executed by the engineer's team.



- This facilitated a high-resolution assessment of the patient's native bone anatomy and enabled accurate digital reconstruction of the left femoral structure, thereby guiding the development of an optimal patient-specific cutting jig strategy.

Precision Through Case Planning - Cutting jig

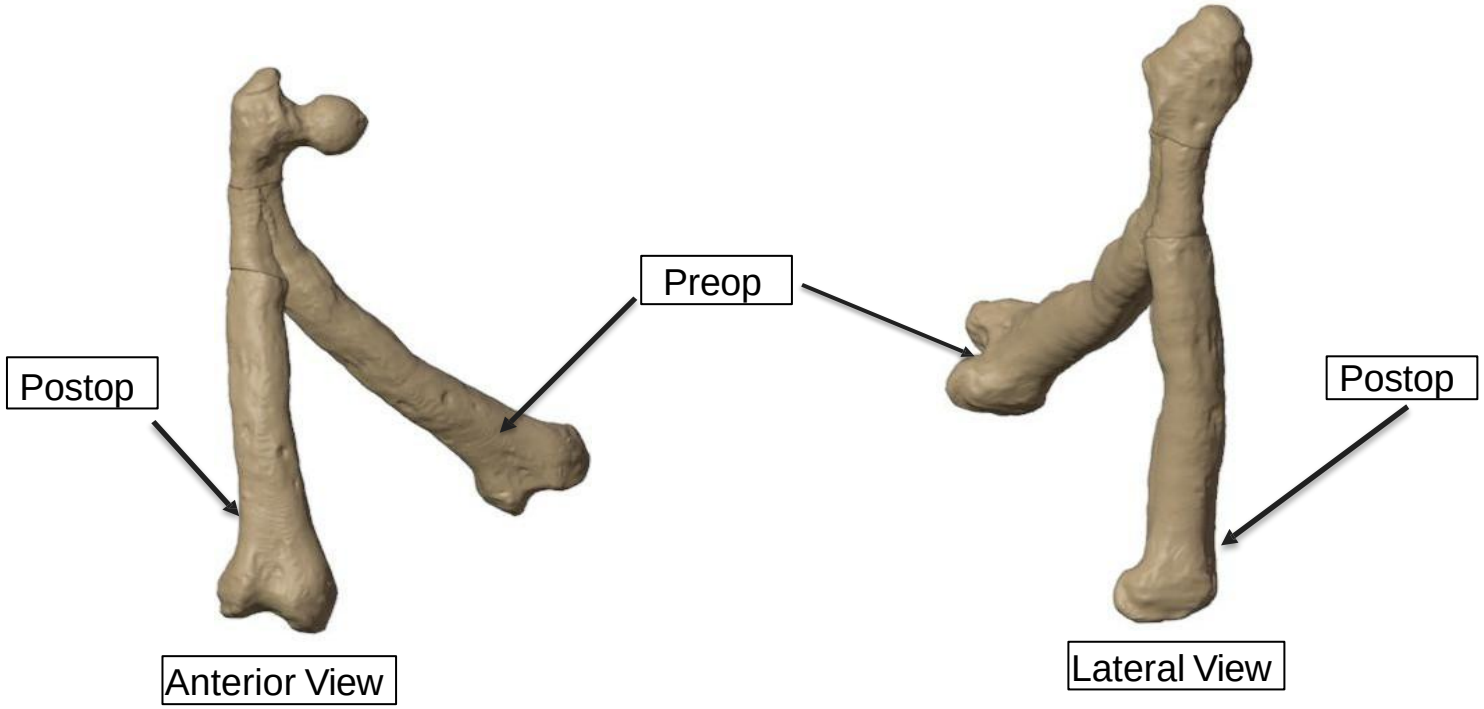


K-Wire Placement

Guide Placement

- A patient-specific cutting jig was strategically designed and 3D printed using BioMed Amber, a biocompatible material, to facilitate accurate deformity correction and seamless translation of the preoperative plan into surgery.
- This patient-specific cutting jig were meticulously designed to enable accurate hip cage implant positioning, while ensuring precise screw placement and optimal trajectory alignment during surgery.

Clinical outcomes



- This innovative procedure successfully addressed the complex anatomical challenges, resulting in a significant clinical improvement. The integration of 3D-printed patient-specific solutions played a crucial role in achieving a precise and successful surgical outcome.