

## ANKLE DISTRACTION ARTHROPLASTY (ADA): OUR FIRST EXPERIENCE

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### INTRODUCTION:

Ankle distraction arthroplasty (ADA) is a well described and technically simple procedure based on the concept that mechanical unloading of an arthritic joint will initiate a healing response in the subchondral bone and articular cartilage. It is a great option for patients with osteoarthritis who are not ready for prosthetic arthroplasty or fusion as ADA utilizes the patient's own healing response and preserves joint motion.

### REPORT:

A 28-year-old lady who works as a supervisor presented to us with 2 years post traumatic left ankle severe OA. She had history of left tibiotalar closed dislocation back in 2020 after falling from her superbike. During presentation, she complained of persistent pain on ambulating after at least 20 meters associated with swelling. She was still able to tolerate and ambulate, but she required regular analgesic. She is an active lady before the injury and enjoyed riding superbike with her friends and wishes that she can still do that in the future.

Examinations revealed slightly swollen left ankle joint. The range of motion (ROM) of the ankle was limited at only 10° plantarflexion (PF) with 0° dorsiflexion (DF) both active and passive. All toes ROM were normal, and pulses were normal. Weight bearing x-ray shows severe left ankle osteoarthritis with at least Stage 3 classified by Takakura-Tanaka classification of ankle OA.

During surgery, anterior and posterior osteophyte were excised, arthrofibrosis were debrided and gastrocnemius recession was performed before application of ilizarov ankle frame with foot plate. Ankle was distracted 5 mm acutely and platelet rich plasma (PRP) was injected inside the joint after the wound closed. Additional distraction of 2mm per day were done twice at day 7 and day 14 post operation. Patient was allowed full weight bearing beginning at 1-month post-surgery and ilizarov was removed after 3 months. ROM of ankle post removal were



Figure 1: Ilizarov ankle frame with foot plate applied.



Figure 2: Pre and post-operative x-rays of left ankle

20° PF and 5° DF. Patient was advice for at least 1 year of recovery before return to normal active lifestyle.

### CONCLUSION:

Ankle distraction arthroplasty is a great option for patients with osteoarthritis with minor complications, and more serious adverse events are avoidable. It is a safe option for all ages.

### REFERENCES:

1. Austin T. Fragomen, Ankle distraction arthroplasty (ADA): A brief review and technical pearls, *Journal of Clinical Orthopaedics and Trauma* (2022), 101708.
2. V.B. Kraus et. al, Atlas of radiographic features of osteoarthritis of the ankle and hindfoot, *Osteoarthritis and Cartilage* (2015), page 2059-2085.