

Anterior Intraosseous Dislocation of the Posterior Tibial Tendon – A Case Report

R. A. Mazzucchelli, T. Lamdark, C. Meier, E. A. Brøns

Division of Orthopaedics and Traumatology, Cantonal Hospital Winterthur, Switzerland

INTRODUCTION

A 69-year old female patient sustained a twisting low-energy injury to her right ankle while dismounting from a bicycle. She presented with pain, swelling and tenderness to her medial malleolus. Conventional radiographs showed a cortical irregularity proximal to the medial malleolus without any typical fracture signs (Fig. 1A). CT scan demonstrated an osseous avulsion involving the flexor retinaculum with displacement of the posterior tibial tendon (PTT) underneath the fragment (Fig. 1B-C).

METHODS

The patient underwent surgical exploration of the PTT 4 days after the injury. The tendon was exposed proximal to the medial malleolus and followed distally along its course. It was running anteriorly of the groove and disappeared underneath the periosteum into the cortical bone (Fig. 2A). After elevation of the osseous fragment the PTT could be reduced back into its anatomical position in the retromalleolar groove (Fig. 2B-C). Examination revealed an intact tendon with only mild fraying. The osseous fragment was anatomically reduced and fixation was performed using two 2.0 mm screws and transosseous sutures (2-0 FiberWire Arthrex®) (Fig. 2D). The flexor retinaculum showed no signs of injury and was therefore not addressed surgically.

RESULTS

The postoperative course was uneventful. Full weight bearing in a walking boot with 15° of plantar flexion for 6 weeks was allowed. X-Ray examination 6 weeks postoperatively showed complete consolidation of the avulsed fragment (Fig. 3). 12 weeks postoperatively the patient was ambulating without pain. Range of motion of the ankle joint was symmetric. No clinical sign for PTT insufficiency could be detected.

CONCLUSIONS

Dislocation of the PTT in absence of an ankle fracture is a rare injury with only a few case reports found in the literature. So far two different types of dislocation were described: a subcutaneous dislocation where the PTT dislocates anteriorly after rupture of the flexor retinaculum (Type I), and a subperiosteal dislocation where the retinaculum is avulsed with a periosteal sleeve and the tendon is trapped underneath it (Type II). Both findings are usually consistent with recreational injuries and do not involve fractures of the ankle joint. We report the case of a novel type of PTT injury: the anterior intraosseous dislocation (Type III). In this case the tendon dislocates anteriorly elevating an osseous fragment and leaving the retinaculum and the medial malleolus intact (Fig. 4). Dislocations of the PTT need to be recognized and addressed surgically since they do not qualify for conservative treatment.

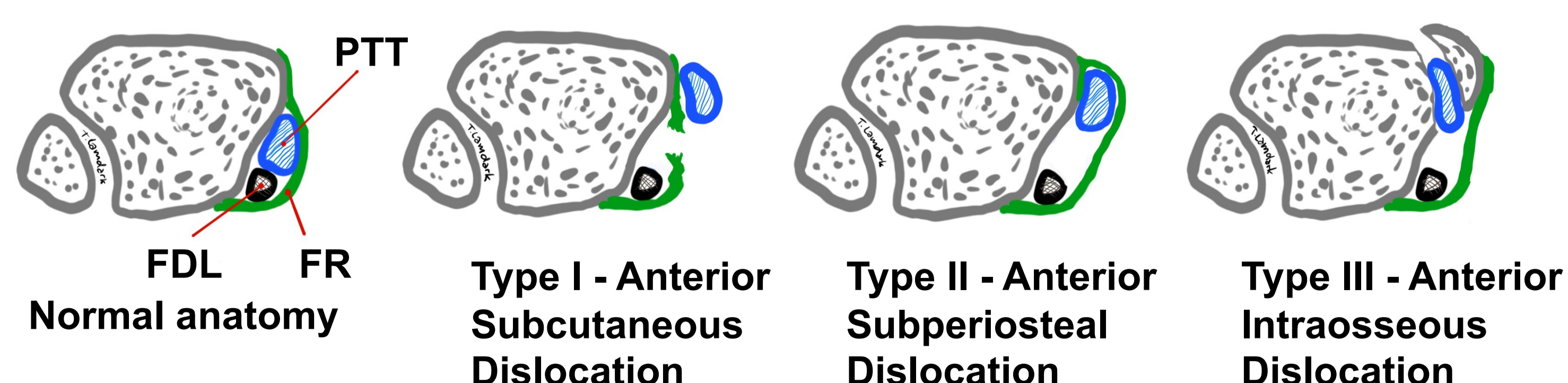


Fig. 4 – Posterior tibial tendon (PTT); Flexor retinaculum (FR); Flexor digitorum longus (FDL). Normal anatomy and different dislocation patterns (Type I-III).

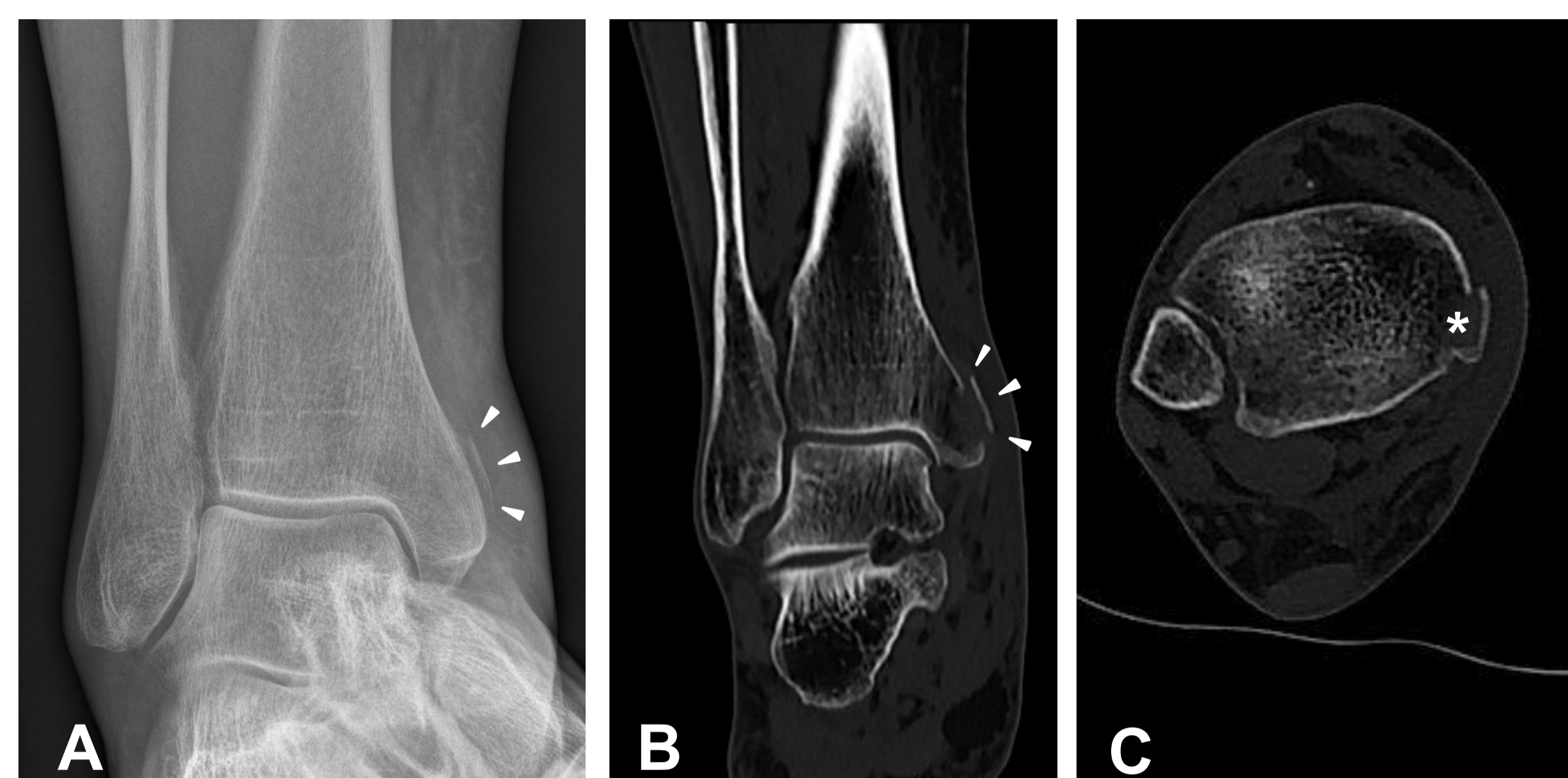


Fig. 1 – Anteroposterior radiograph of the right ankle showing an elevated cortical fragment proximal to the medial malleolus (1A). CT scan confirms the osseous avulsion (1B). On the axial plane the PTT can be identified underneath the fragment (1C *).

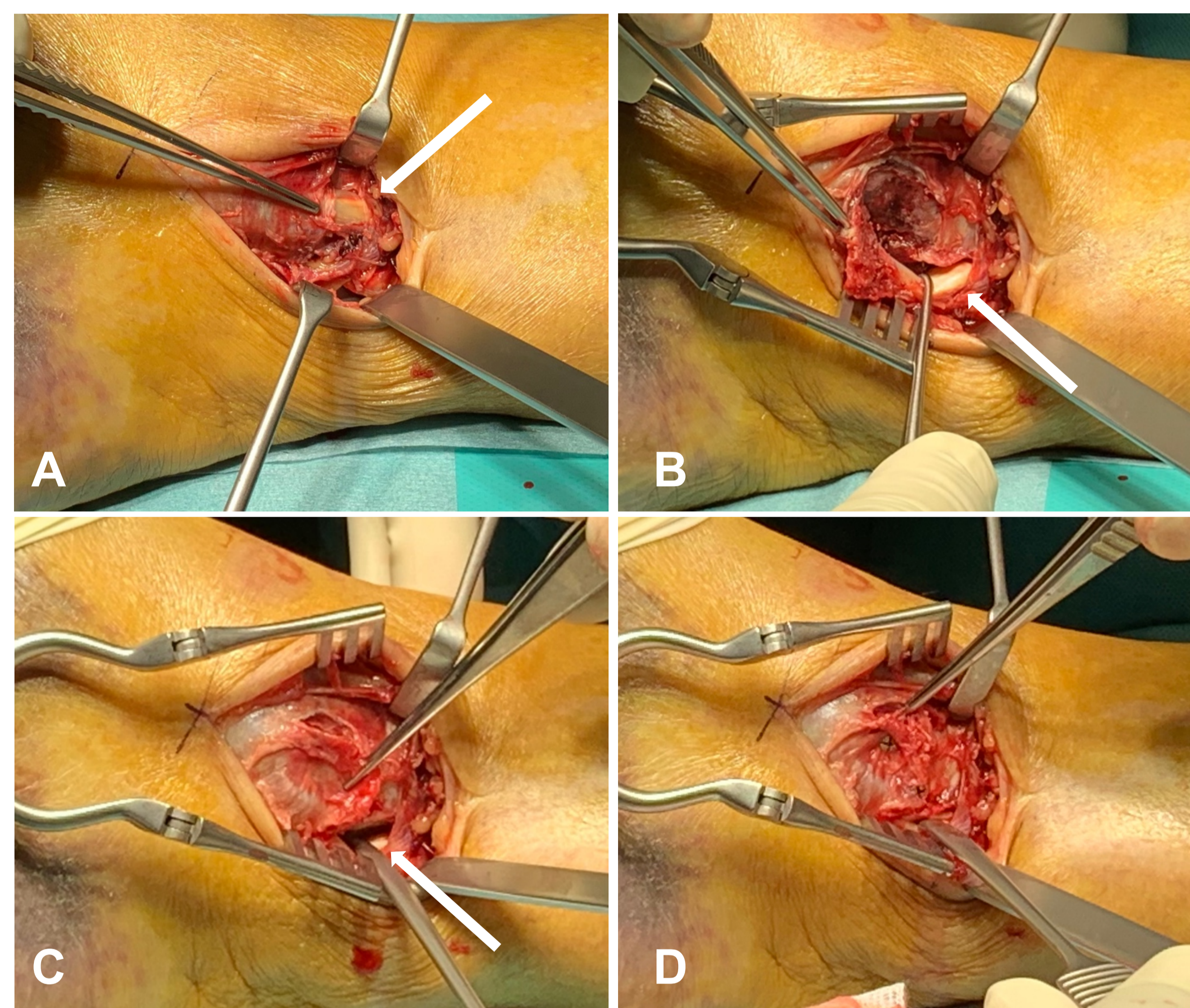


Fig. 2 – Surgical exploration of the PTT (white arrow) shows anterior dislocation with entrapment of the tendon inside the bone (2A). After elevation of the cortical fragment the PTT is reduced back into the retromalleolar groove (2B). Anatomical reduction of the cortical fragment (2C). Fixation with two 2.0 screws and transosseous sutures (2D).

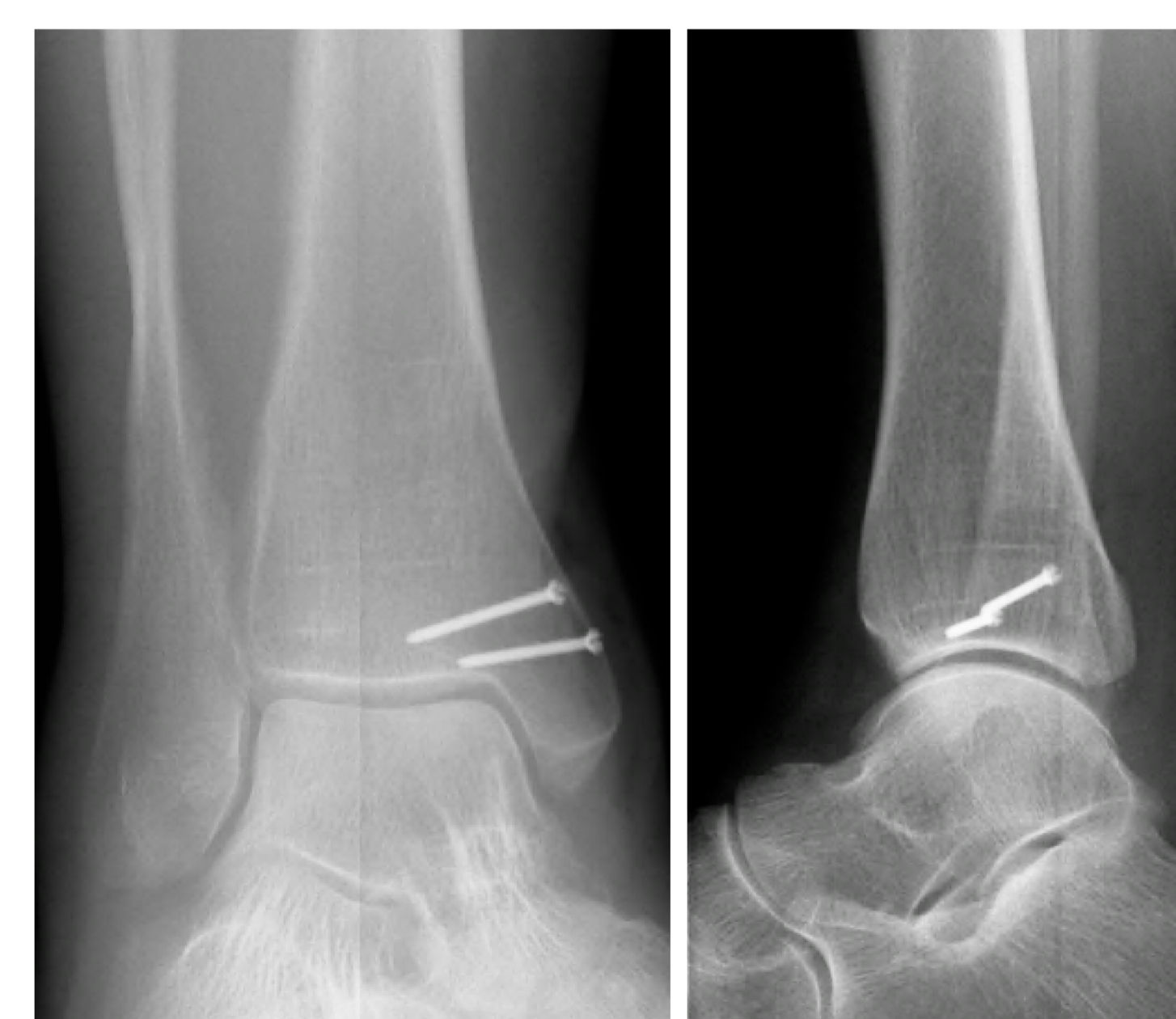


Fig. 3 – X-Ray examination 6 weeks postop shows complete consolidation of the avulsed fragment

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CONTACT

ruben.mazzucchelli@gmail.com

KANTONSPITAL WINTERTHUR

