


An unusual case of thoracic outlet syndrome (TOS)

Impending arterial occlusion following compression of the subclavian artery stent by clavicular pseudarthrosis after multiple fractures in childhood

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Objective

A 60-year-old patient suffered multiple left-sided clavicular fractures as a child, treatment was conservatively.

50 years later he developed a critical ischemia of the left arm with paresis. The cause of ischemia was an occlusion of the subclavian-brachial artery. Initial treatment was thrombectomy of the subclavian-brachial artery followed by stent implantation (subclavian artery).



Fig. 1: X-ray of clavicular defect (A) and stent compression (B)

CT Angiogram at 3 month follow up revealed a compression of the stent. We think the recurring thromboembolic events of the left arm are caused by this chronic mechanical compression of the subclavian artery. The finding on CT scan of an extensive clavicular defect corresponds in MRI to a fibrous callus formation. At the time of presentation in our hospital the patient was asymptomatic. However, due to an impending arterial occlusion surgical treatment was required in this unusual case of TOS.

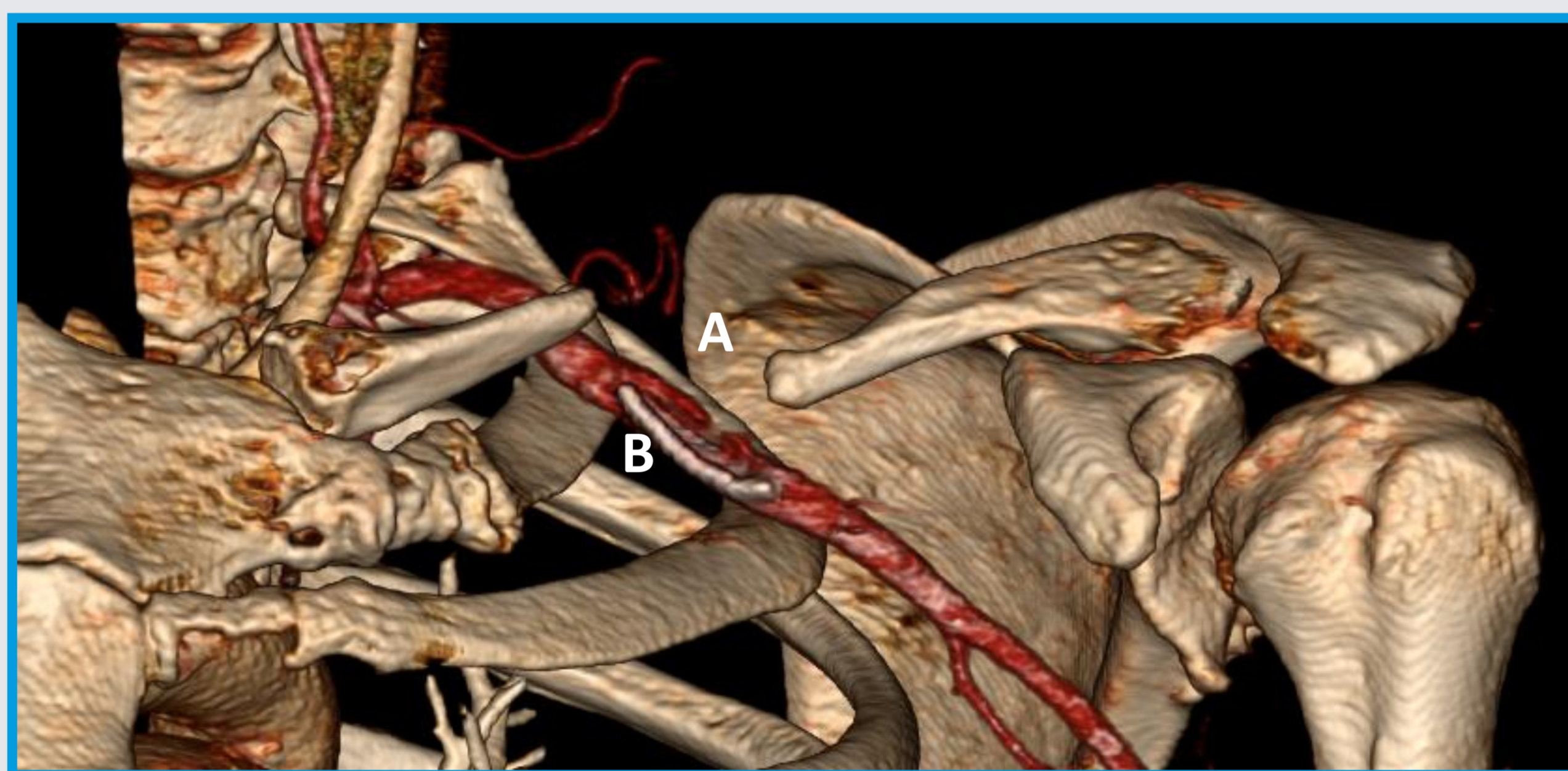


Fig. 2: CT-scan of clavicular defect (A) and stent compression (B)

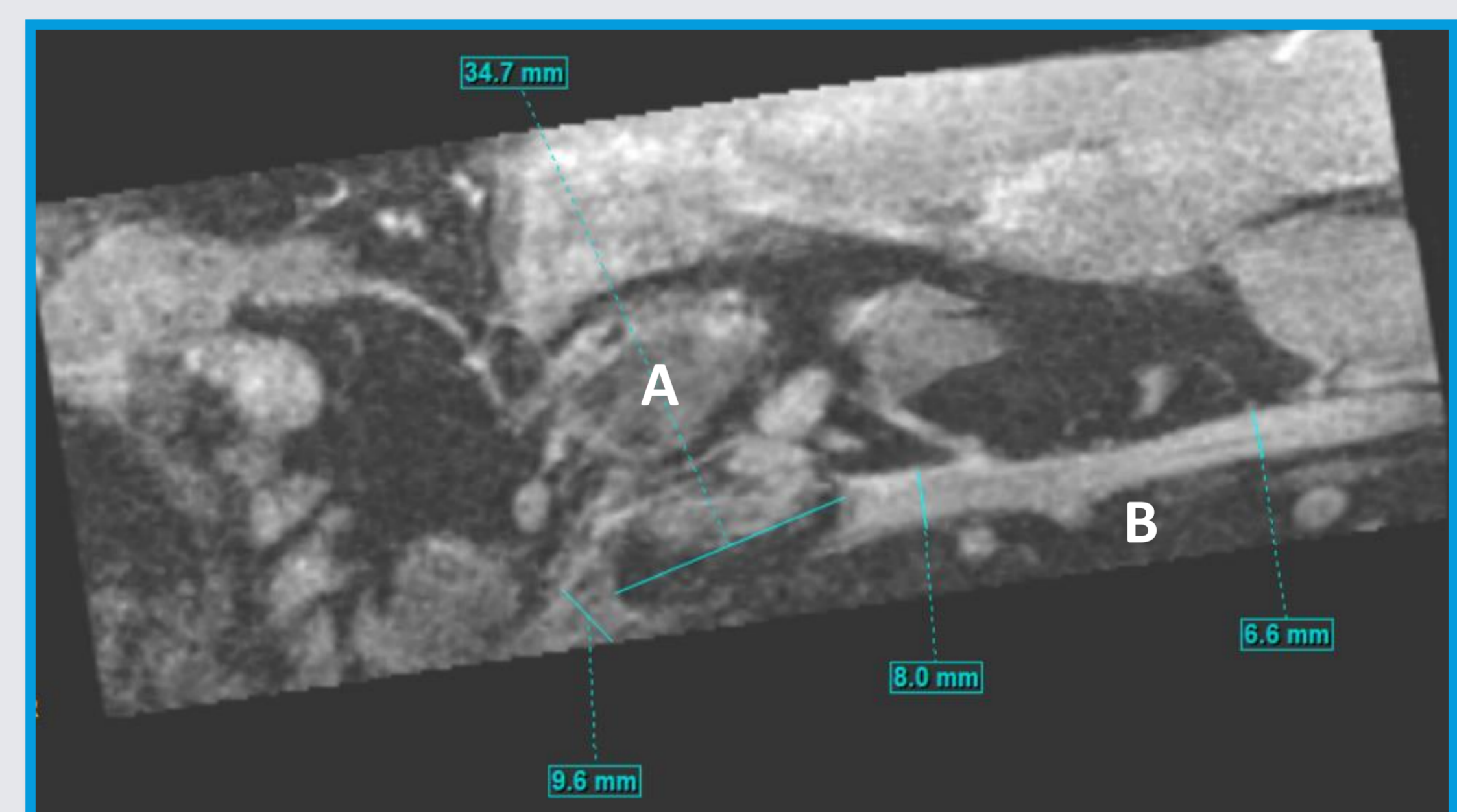


Fig. 3: Corresponding MRI with fibrous callus (A); subclavian artery (B)

Methods

We considered two therapy options.

Repairing the clavicle pseudoarthrosis using plate and pelvis bone, however, the defect is very large and the anchoring of the plate in medial and lateral clavicular fragment would be critical.

Resection of the largely fibrous callus and of the clavicular end (mainly lateral) in order to prevent new callus formation through instability of the bone fragments.

We decided to go with option two and we resected the pseudoarthrosis (including lateral clavicular fragment up to the coracoclavicular ligament and the underlying bursa). The stent bearing part of the subclavian artery was replaced with a venous interposition graft.

Results

Postoperatively mechanical obstruction of the subclavian artery was gone and we found an improved oscillography of all fingers of the left hand.

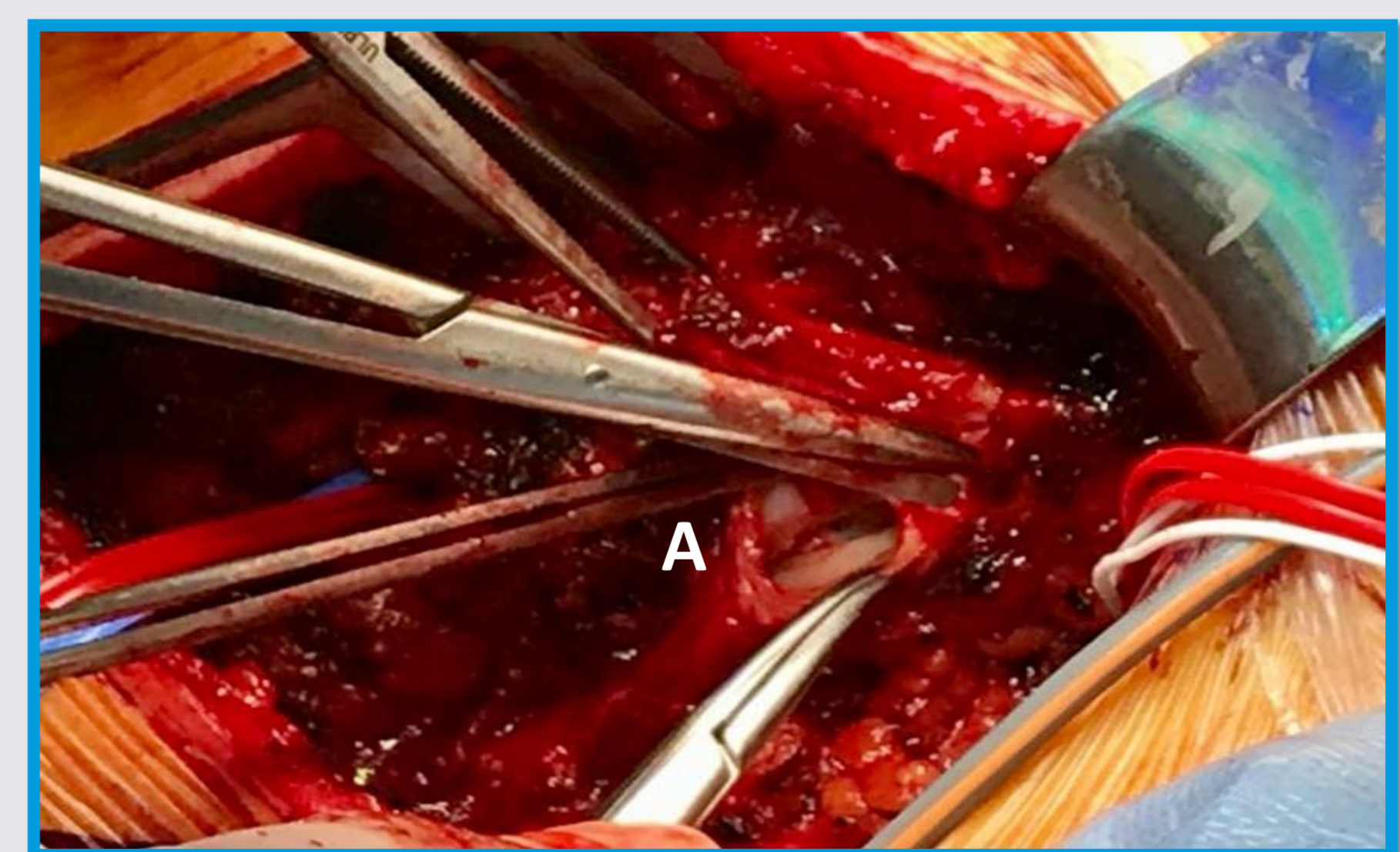


Fig. 4: Neobursa (A) under the callus