

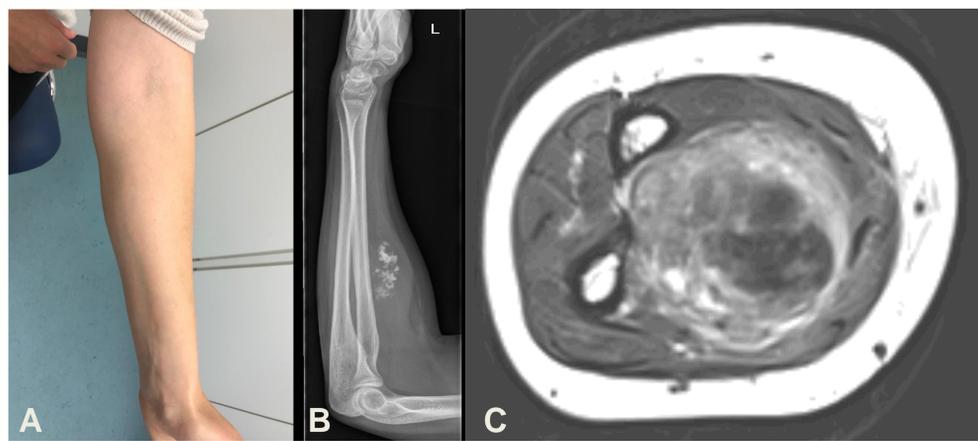
RECONSTRUCTION OF THE FLEXOR COMPARTMENT AFTER SOFT TISSUE SARCOMA RESECTION OF THE PROXIMAL FOREARM

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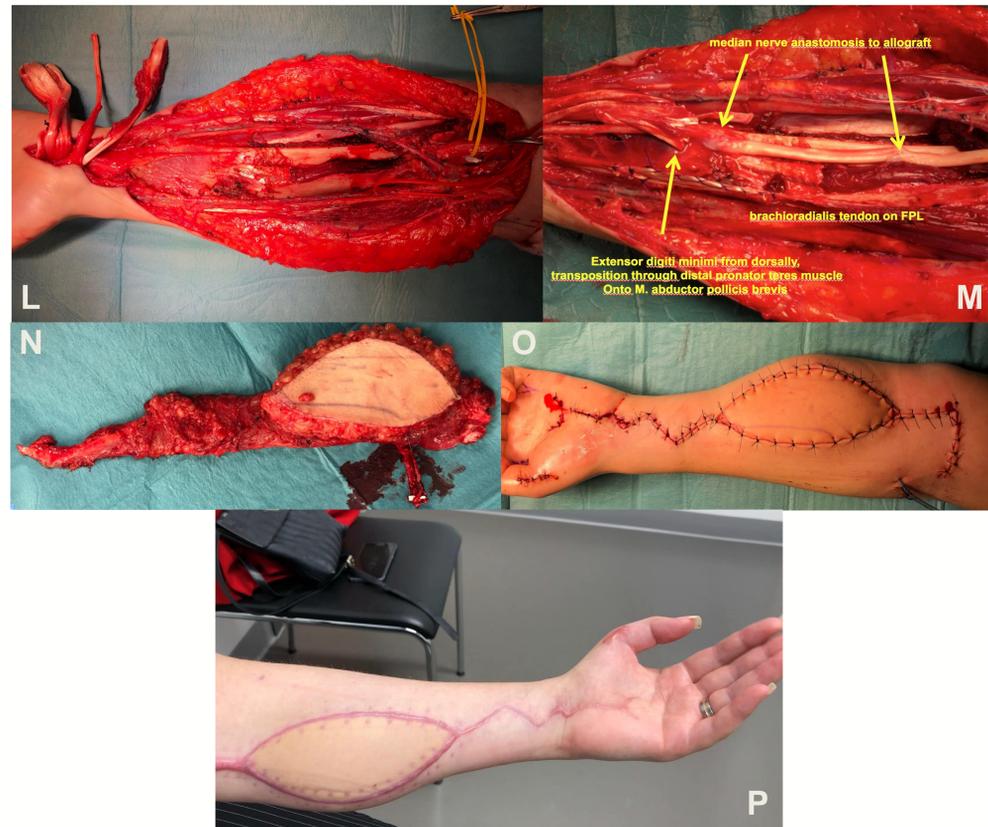
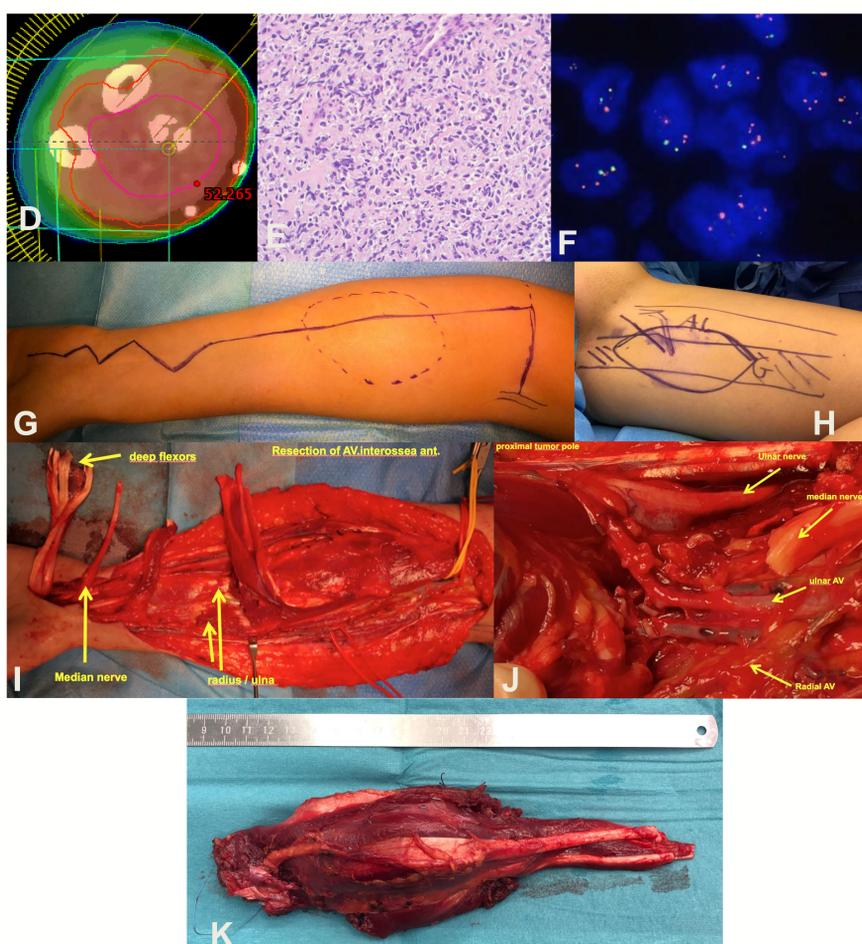
INTRODUCTION

Soft tissue sarcomas of the proximal forearm represent great challenges mainly because of the complex local anatomy and its associated potential functional loss after resection. It is often difficult to decide between oncological safety and preservation of function, and the situation has to be thoroughly discussed with the patient. If it is decided on limb-salvage surgery, then the main focus is directed towards the best possible reconstruction options.



PATIENT & METHODS

A 31 year old patient presented with a 70x38x34mm, partly calcified mass in the proximal flexor compartment of the forearm. Biopsy revealed a sclerosing epithelioid fibrosarcoma, and staging studies showed small indeterminate lung nodules (A-F). Induction chemotherapy was followed by preoperative radiation. Together with the patient, we opted for limb-salvage surgery and reconstruction of the flexor function using a free gracilis flap.



RESULTS

The entire forearm was exposed from anteriorly and the ulnar as well as radial neurovascular bundle saved (G-O). The flexor muscles and the median nerve were transected to expose the interosseous membrane, which was transected and together with the periosteum freed from ulna and radius to keep on the tumor. In parallel, the gracilis muscle was harvested. Distally, we performed a transfer of the common palmar nerve Dig.IV-V to Dig I-II, then used two cable grafts for the reconstruction of the median nerve, transfer of the brachioradialis tendon onto the FPL, as well as a transposition of the extensor digiti minimi to abductor pollicis brevis to restore opponens function. Finally, the free gracilis muscle flap was transferred and anastomosed end-to-side to the radial artery. The postoperative course was uneventful. At 3 months follow-up, the patient starts using her flexion, but still continues intense ergotherapy training (P).

CONCLUSION

Soft tissue sarcoma resections in the forearm need to be carefully balanced between oncological safety and functional reasonability, and need to be carefully individualized together with the patient preoperatively to meet the expectations on both sides. A functional free gracilis muscle transfer is well suited to restore flexor function in the forearm.

HIGHLIGHTS:

A free gracilis muscle flap is well suited to reconstruct the flexor function of the forearm after sarcoma resection.