diaphyseal leg; complete; allograft

CC: 13 yo with lump on anterior L tibia with increasing pain.

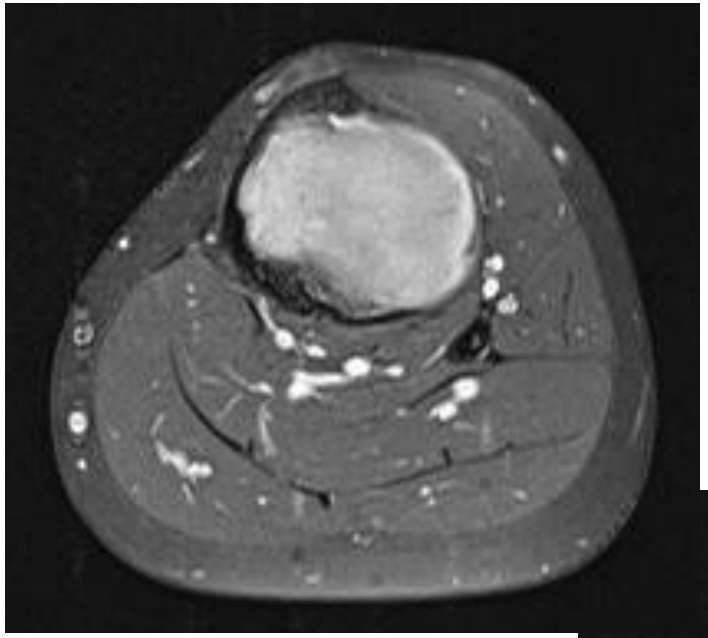
PMH: biopsy outside

diaphyseal leg; complete; allograft

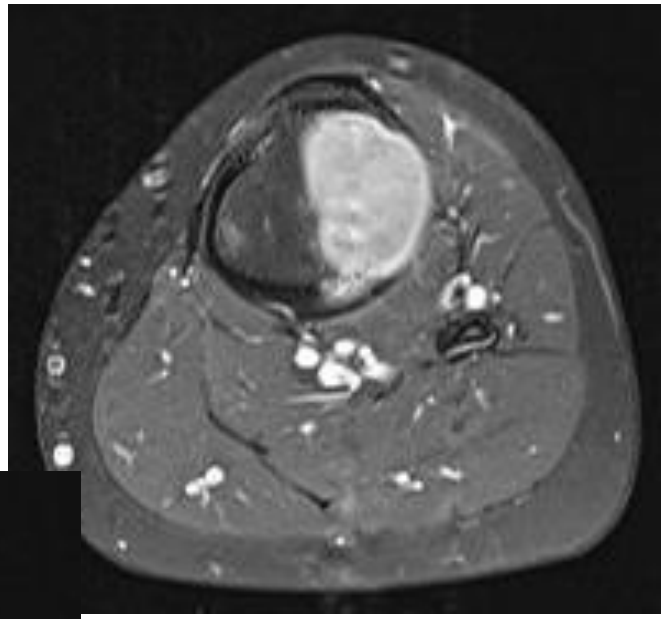
Dec 19, 2016

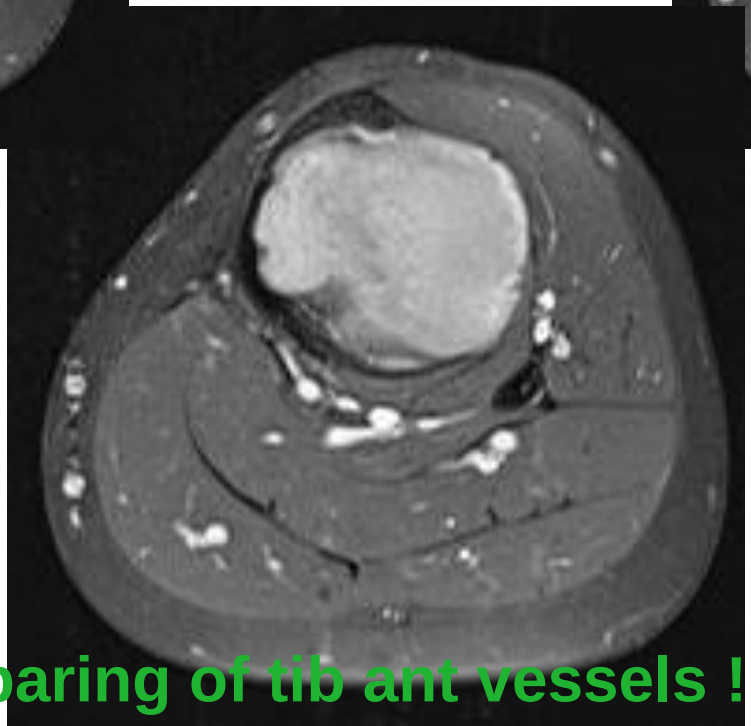
SarcomaSurgery

diaphyseal leg; complete; allograft



Dec 19, 2016



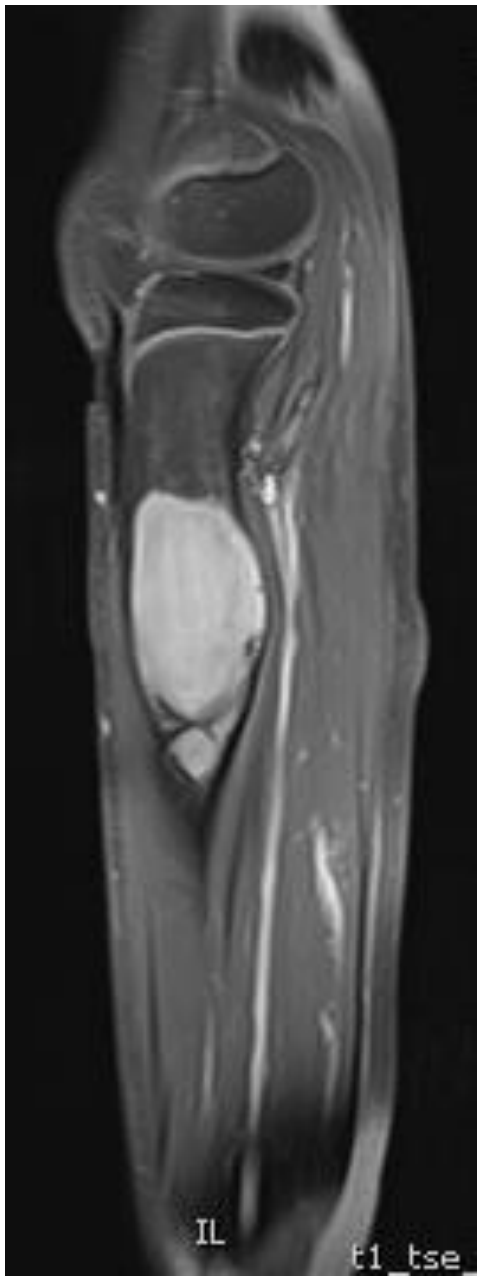


sparing of tib ant vessels !

SarcOmaSurgery

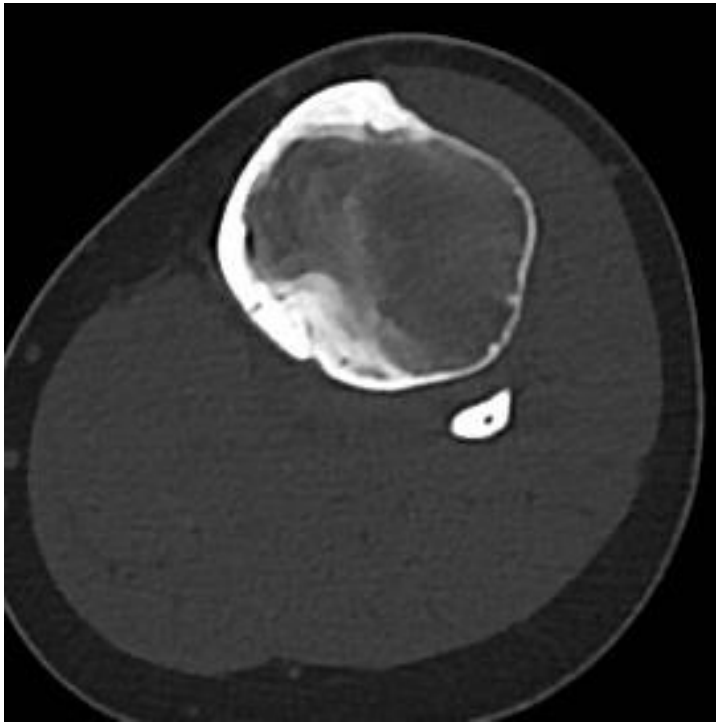
diaphyseal leg; complete; allograft

Dec 19, 2016



diaphyseal leg; complete; allograft

March 14, 2017



3D planning to preserve patellar tendon and growth plate

diaphyseal leg; complete; allograft

3D-SIDE

PATIENT SPECIFIC SURGICAL TECHNOLOGY

Advantage: directly affiliated with several bone banks to select optimal allograft (digital exchange)

diaphyseal leg; complete; allograft

1. Initial Situation

Figure 1.1 : CT

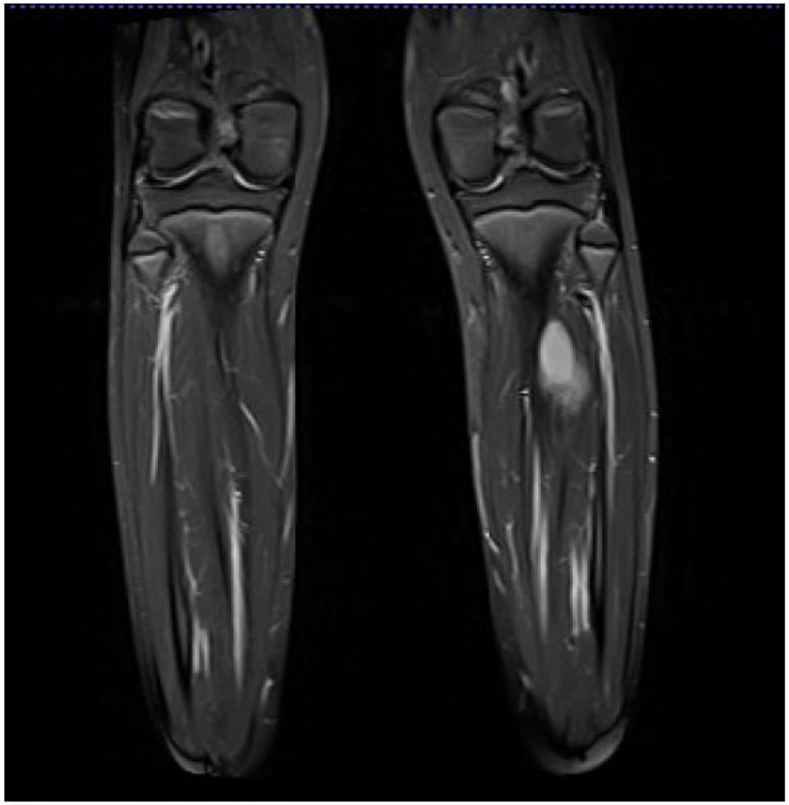


Figure 1.2 : MRI

SarcOmaSurgery

diaphyseal leg; complete; allograft

2. Tumor localization

Tumor of left tibia. Coregistration of MRI and CT are OK in the tumoral zone.

CT

Figure 2.7 :

CT + MRI

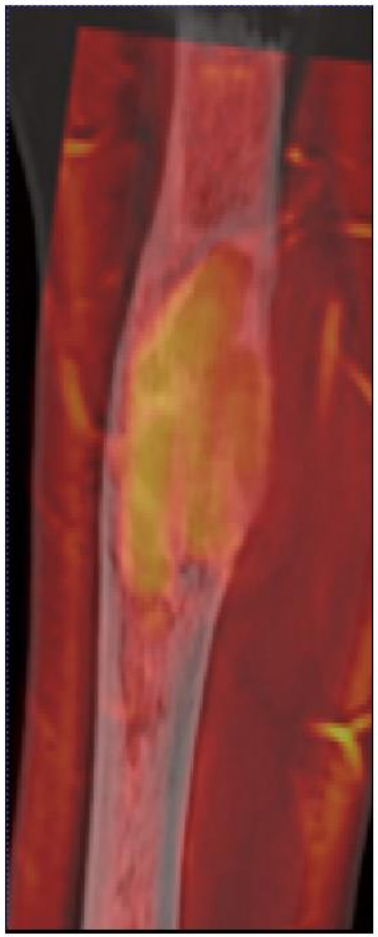


Figure 2.8 :

CT + MRI + Tumor

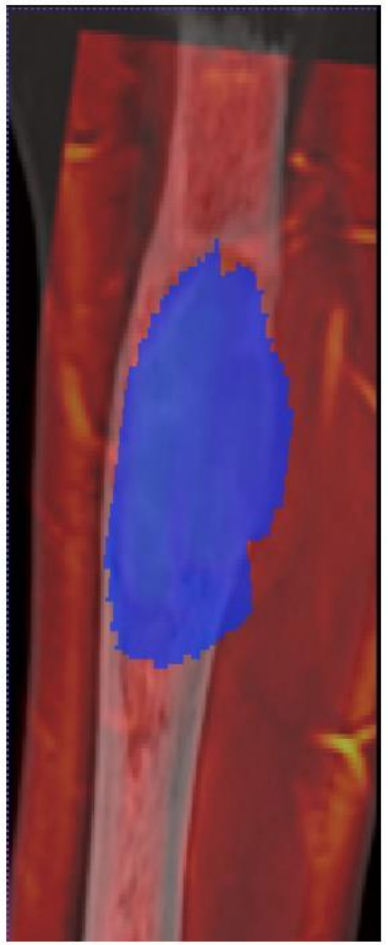
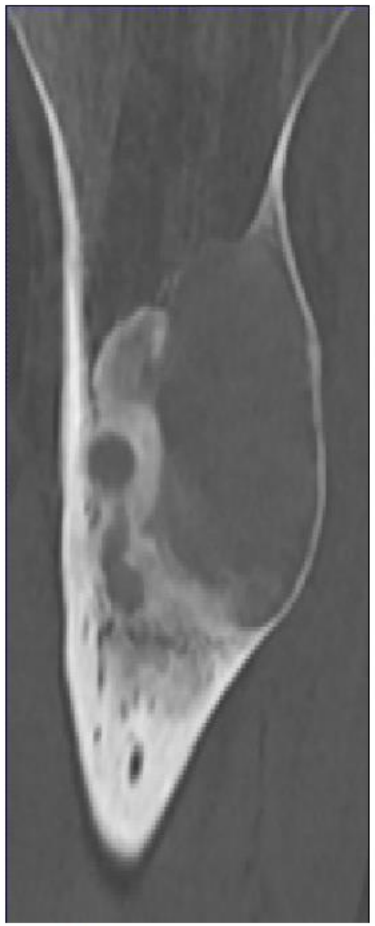


Figure 2.9 :

diaphyseal leg; complete; allograft

CT



ɟure 2.13 :

CT + MRI

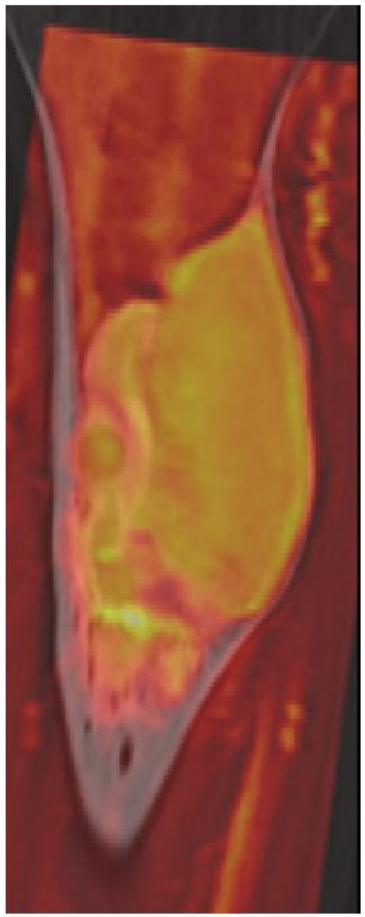


Figure 2.14 :

CT + MRI + Tumor

Figure 2.15 :

diaphyseal leg; complete; allograft

3. Resection Planning

For the tumor resection, we suggest a proximal resection in two planes and a distal resection by Step cut (3 planes). All safe margins are set at 10 mm (distance between the resection plane and the extremum of the tumor).
We don't consider the fibula, in our planning.

PREVIOUS PLANNING :

Figure 3.1 : Anterior view of 3D-model with resection in green.
Proximal : 2 resection planes (following the shape of the tumor). Distal : 1 resecton plane.

Figure 3.2 : Medial view

Figure 3.3 : Posterior view

Figure 3.4 : Lateral view

NEW PLANNING, WITH STEPCUT :

Figure 3.5 : Anterior view

Figure 3.6 : Posterior view

SarcOmaSurgery

diaphyseal leg: complete: allograft

4. Reconstruction

By allograft.

For the reconstruction, we suggest to use the **allograft with number 229484** (in yellow, on next images). As you'll see on the images, it is slightly larger/bigger than the patient's tibia.

Figure 4.1 :

Figure 4.2 :

Figure 4.3 :

Figure 4.4 :

diaphyseal leg; complete; allograft

5. Design of custom-made instruments

Surgical guide for the patient :

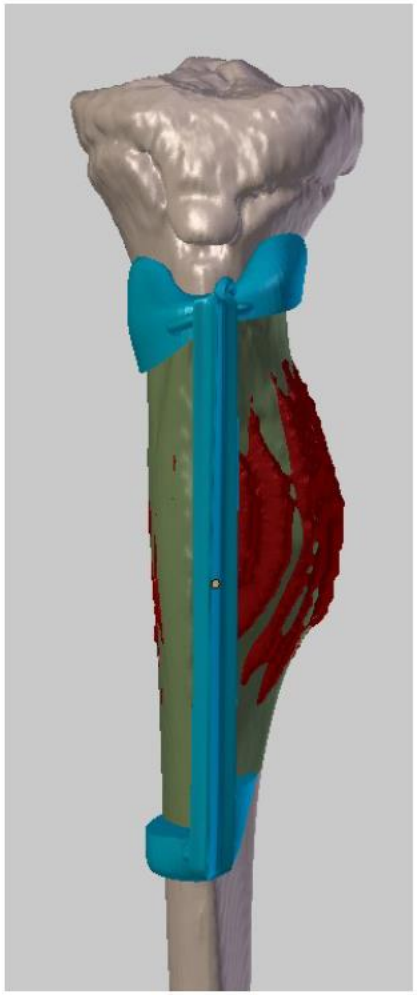


Figure 5.1 : Anterior view of the resection guide, in blue

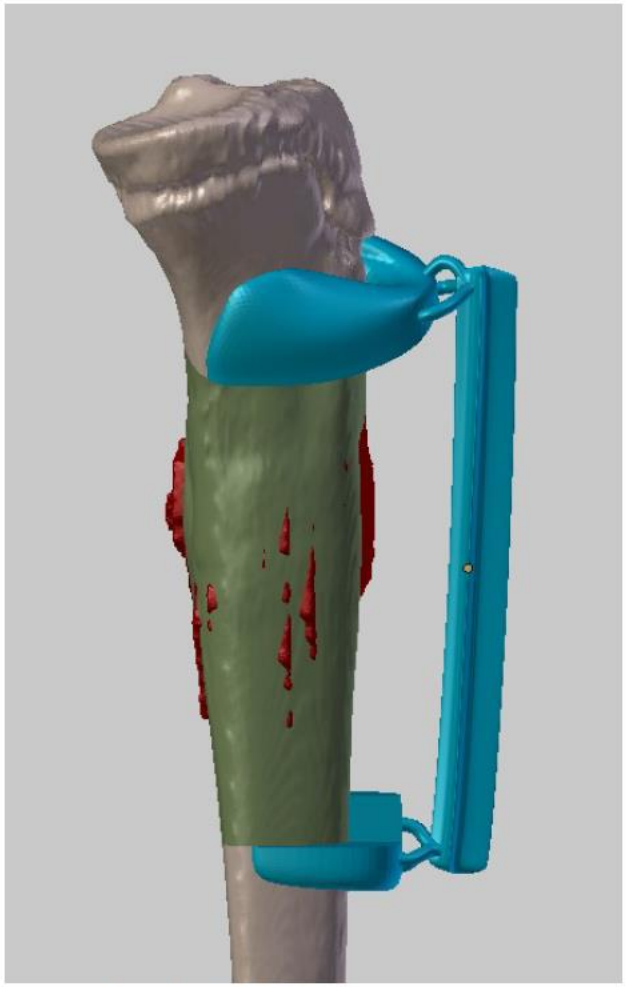


Figure 5.2 : Medial view

diaphyseal leg; complete; allograft

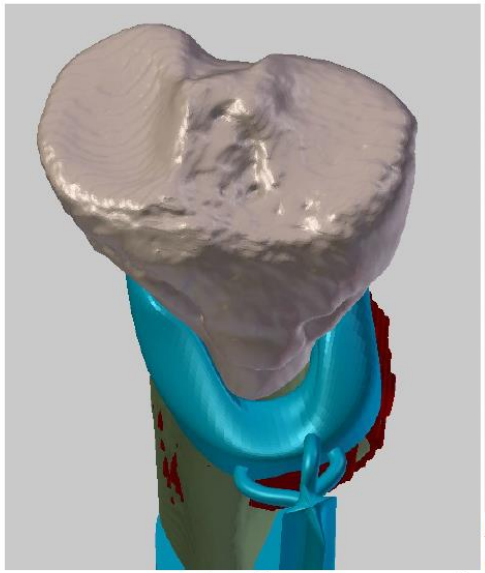


Figure 5.4 : Surgical guide not in contact with the tibial tuberosity

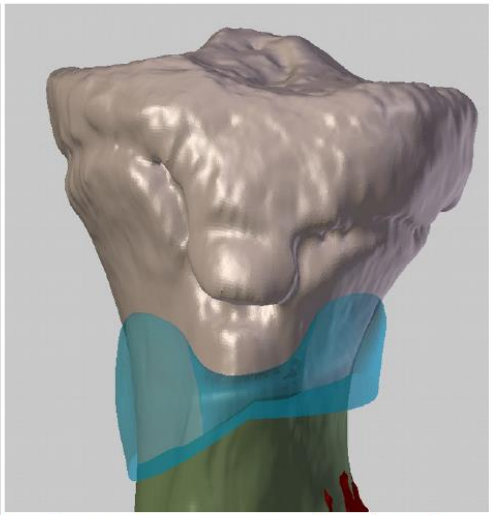


Figure 5.5 : Transparency used, to show the area of the resection guide that is not in contact with the bone. (central part : a little bit darker : not in contact with the tibial tuberosity)

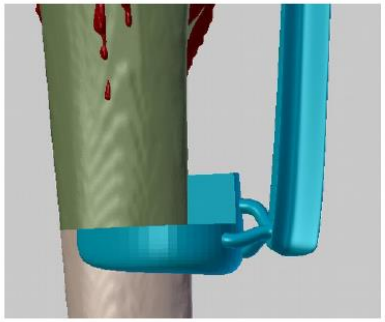


Figure 5.6 : Distal 'functional part' of the resection guide. This is connected to the bridge structure by means of 3 small 'connections' which can be cut/broken once the resection guide is fixed onto the patient's tibia

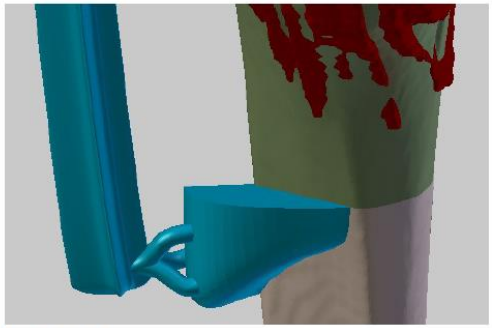


Figure 5.7 :

diaphyseal leg; complete; allograft

'igure 5.10 :

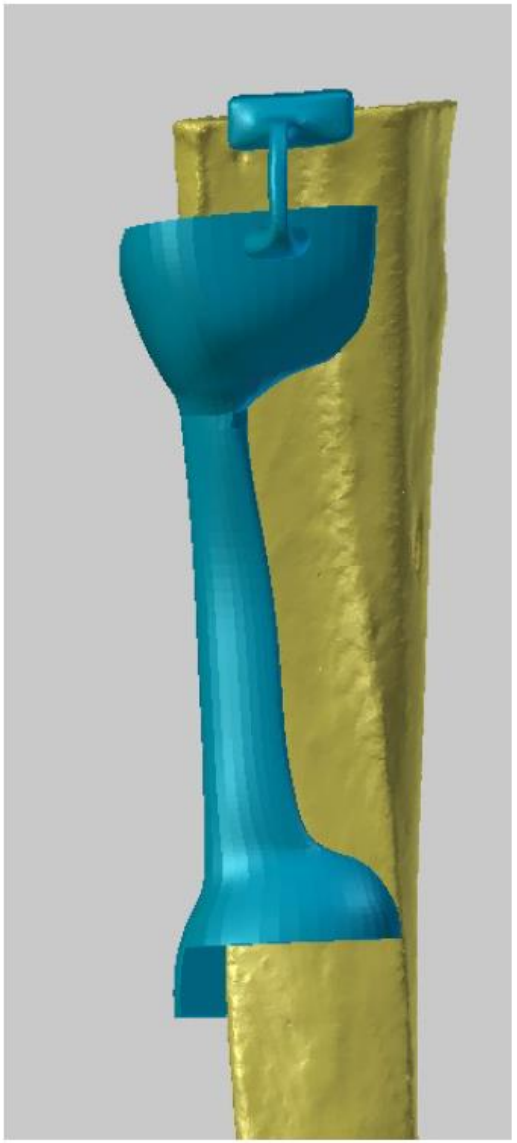


Figure 5.11 :

diaphyseal leg; complete; allograft

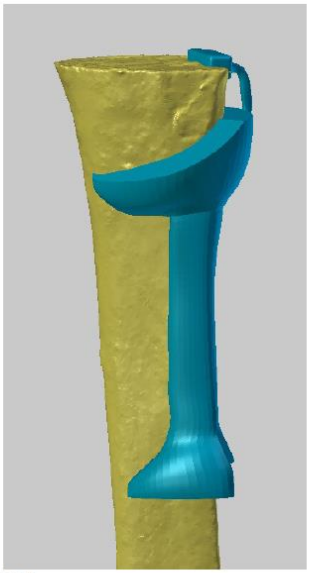


Figure 5.12 :

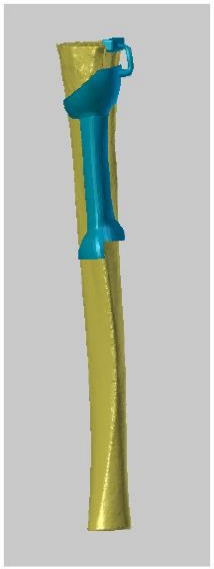


Figure 5.13 :

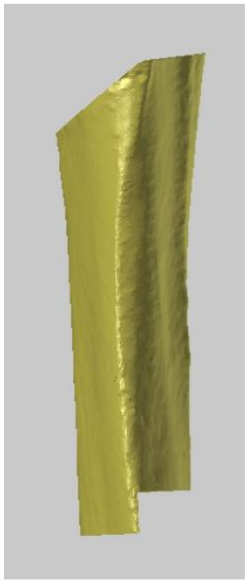


Figure 5.14 :

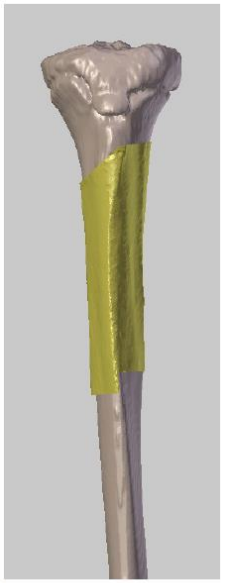
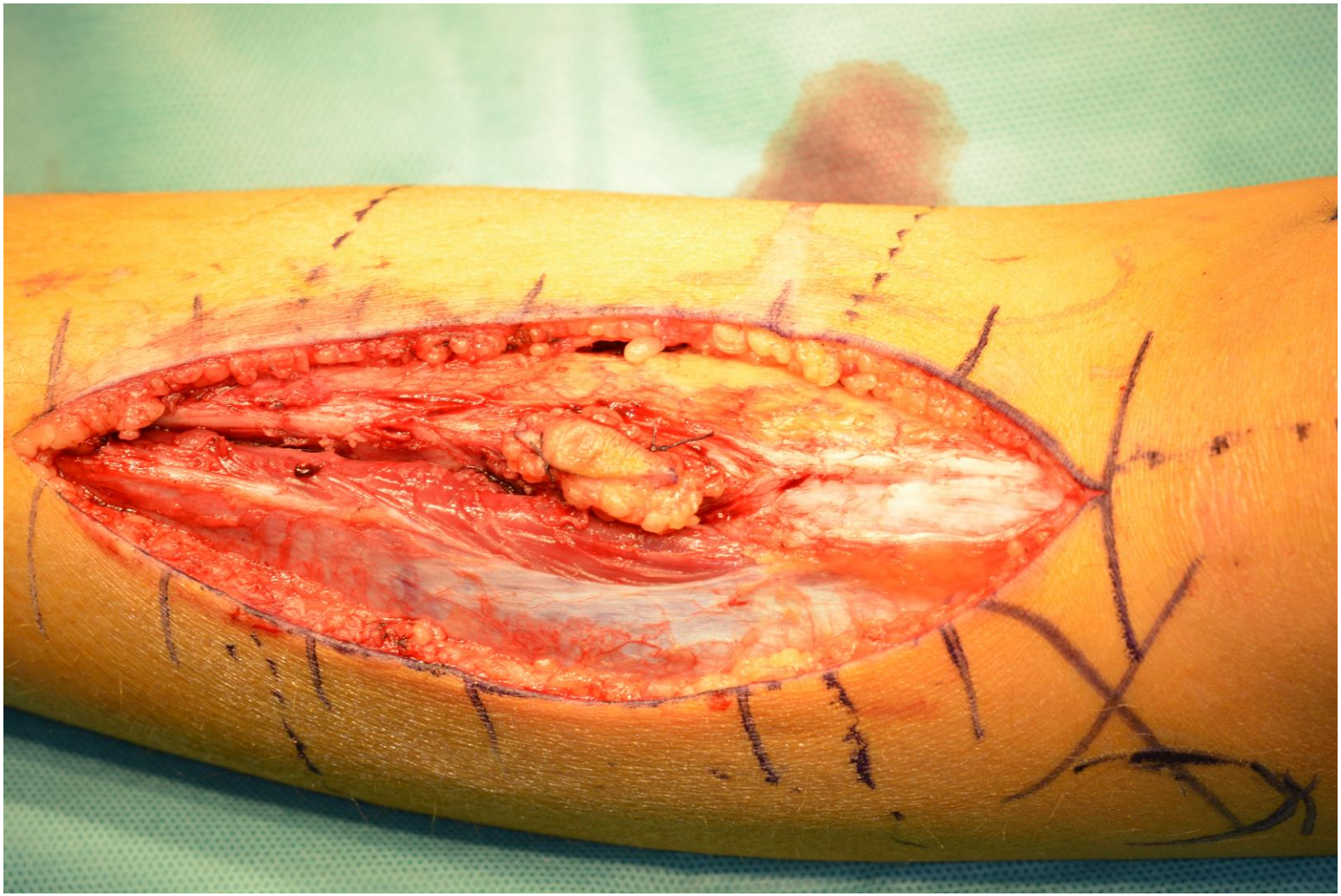


Figure 5.15 :

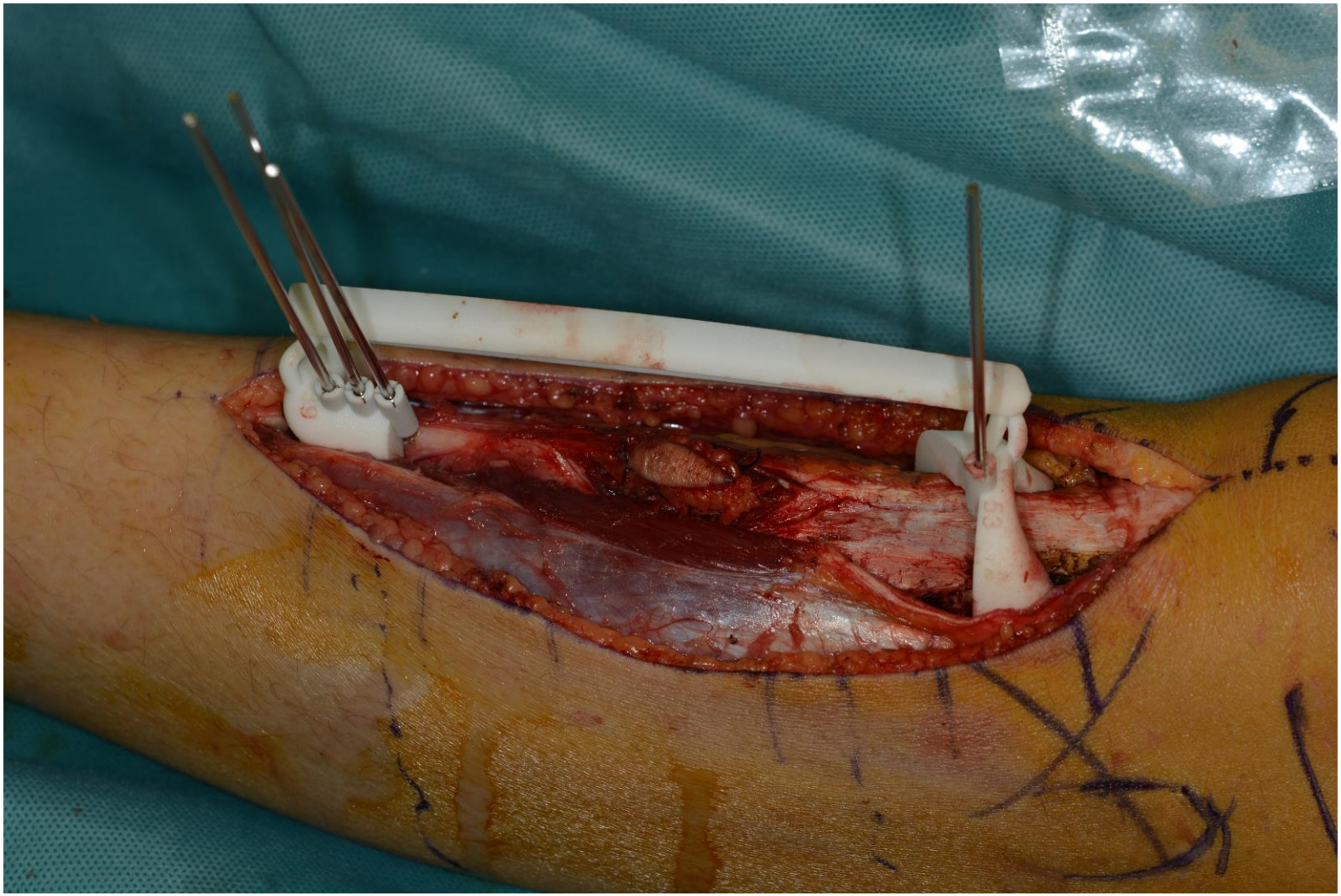
diaphyseal leg; complete; allograft



May 4, 2017

SarcOmaSurgery

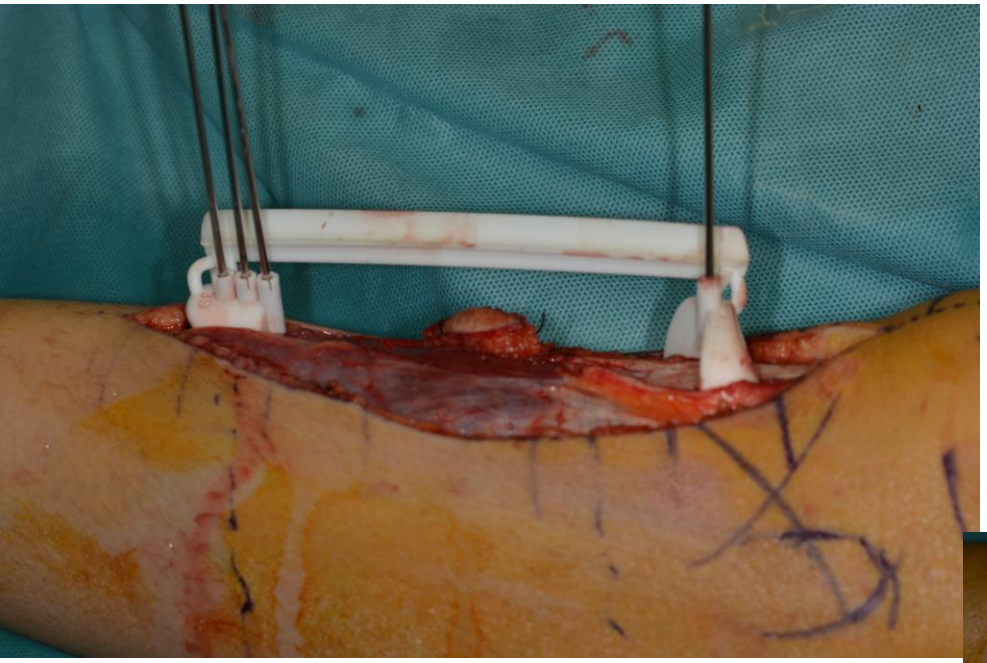
diaphyseal leg; complete; allograft

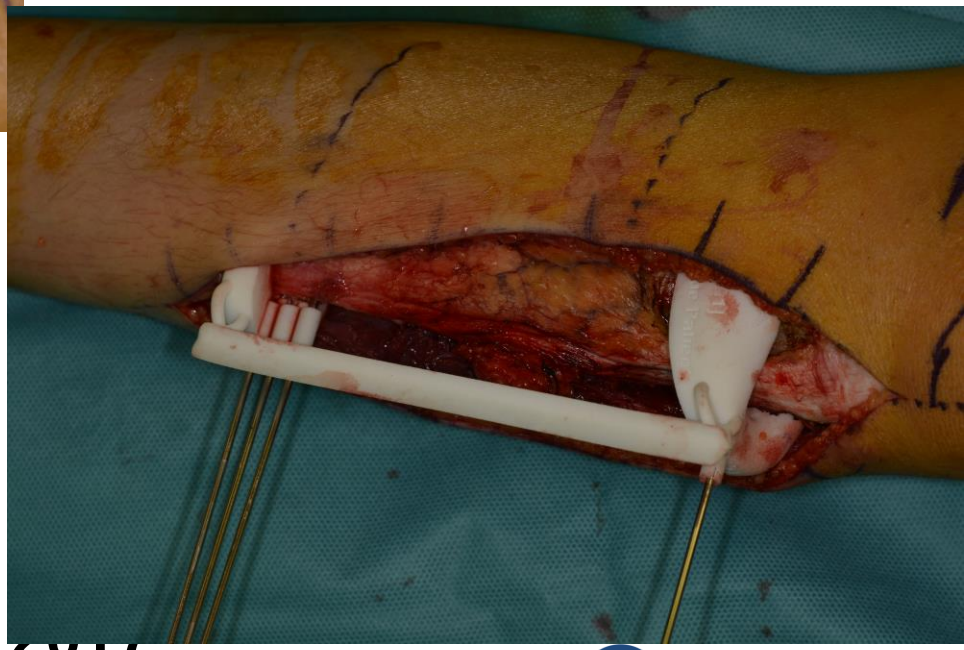


May 4, 2017

SarcomaSurgery

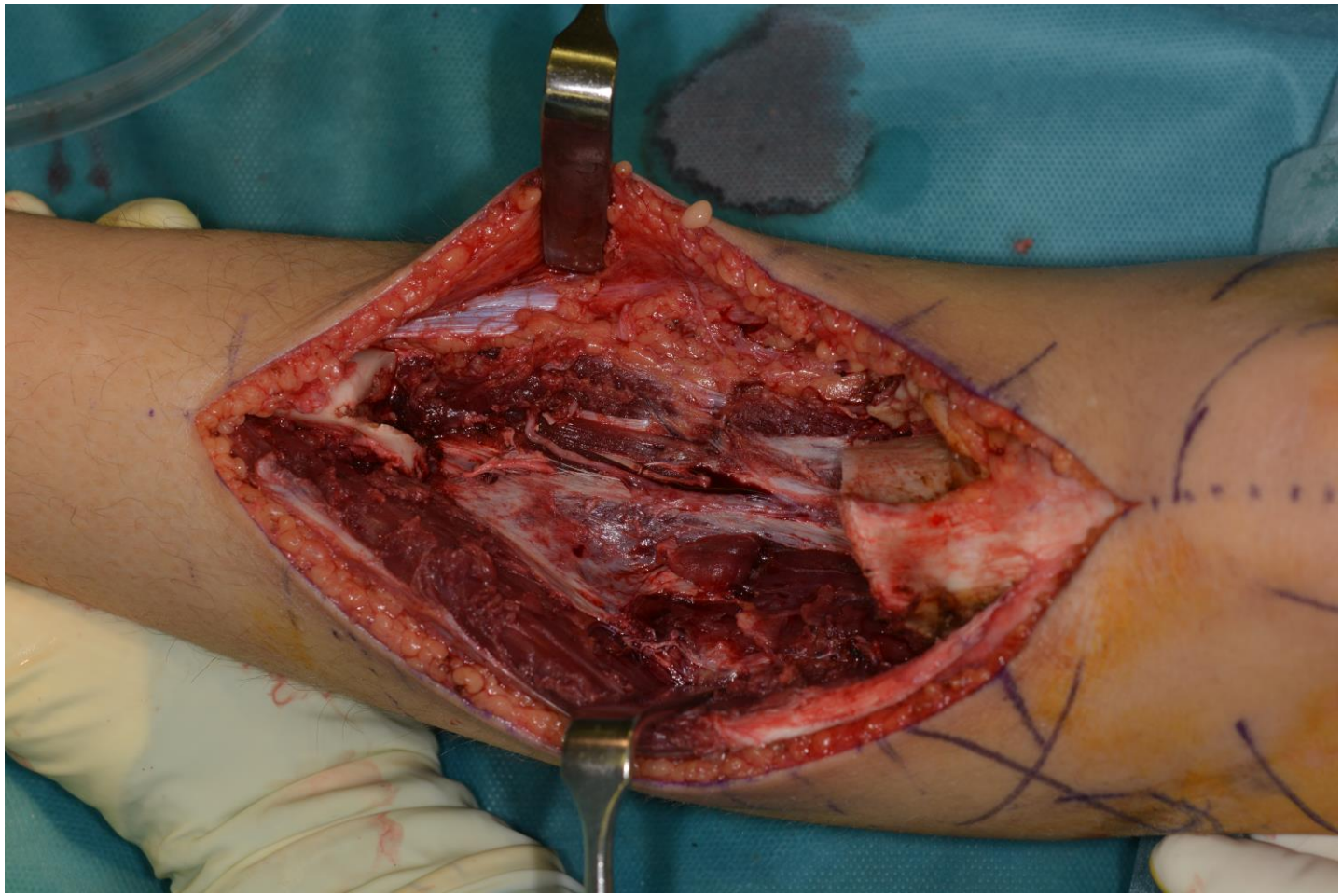
diaphyseal leg; complete; allograft





May 4, 2017

diaphyseal leg; complete; allograft



Sparing of tib ant vessels !

May 4, 2017

SarcOmaSurgery

diaphyseal leg; complete; allograft

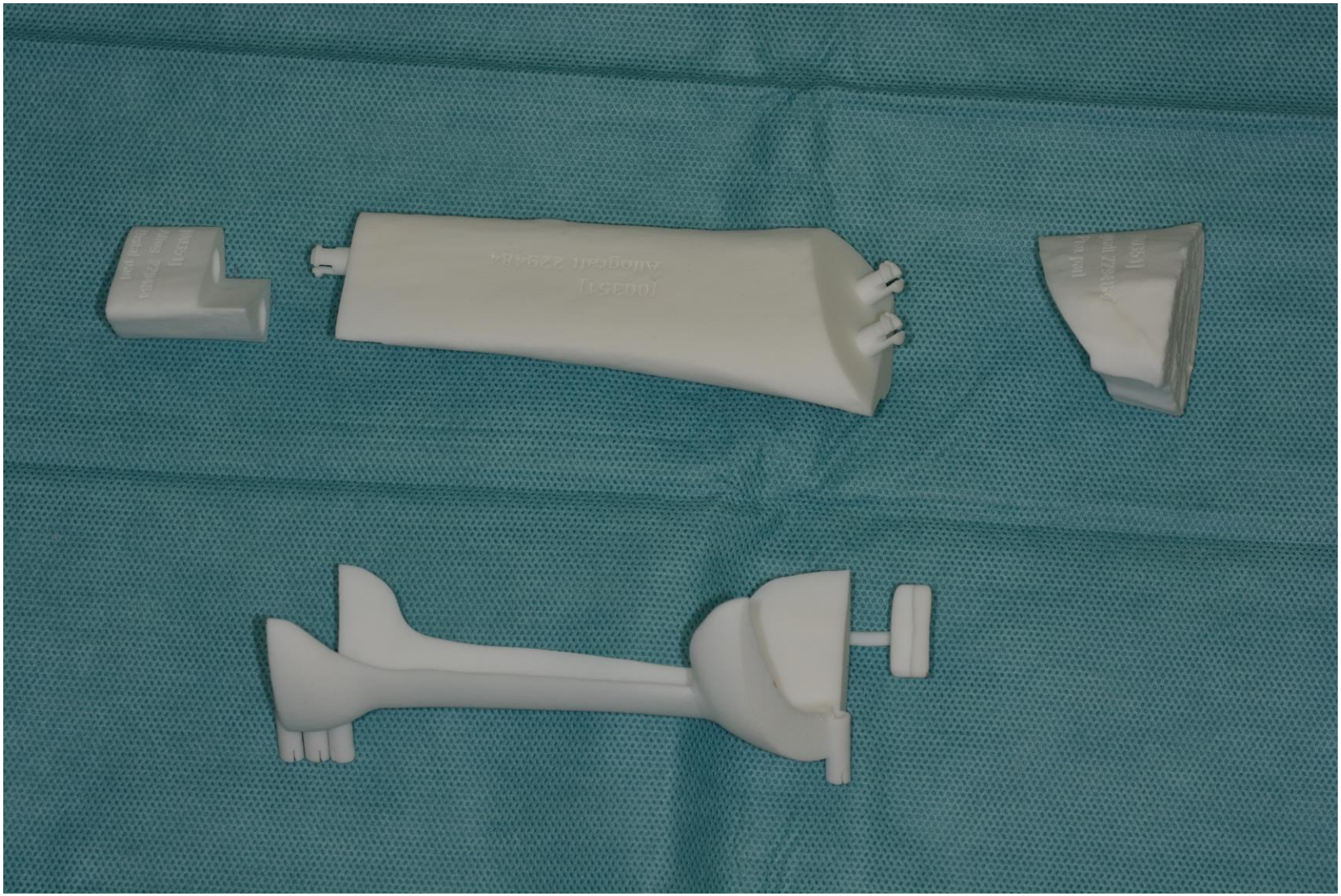
lay 4, 2017

diaphyseal leg; complete; allograft

May 4, 2017

SarcomaSurgery

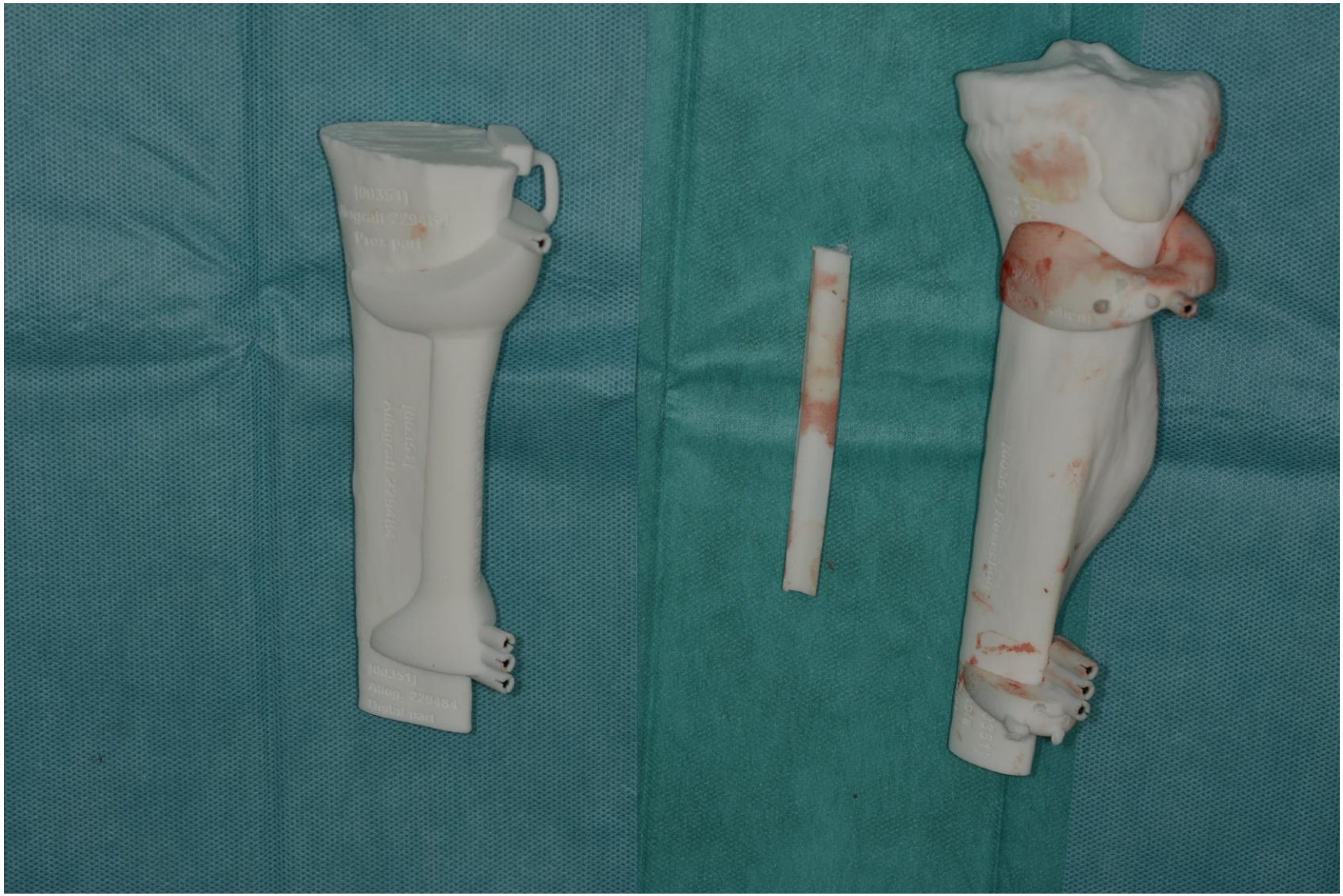
diaphyseal leg; complete; allograft



May 4, 2017

SarcomaSurgery

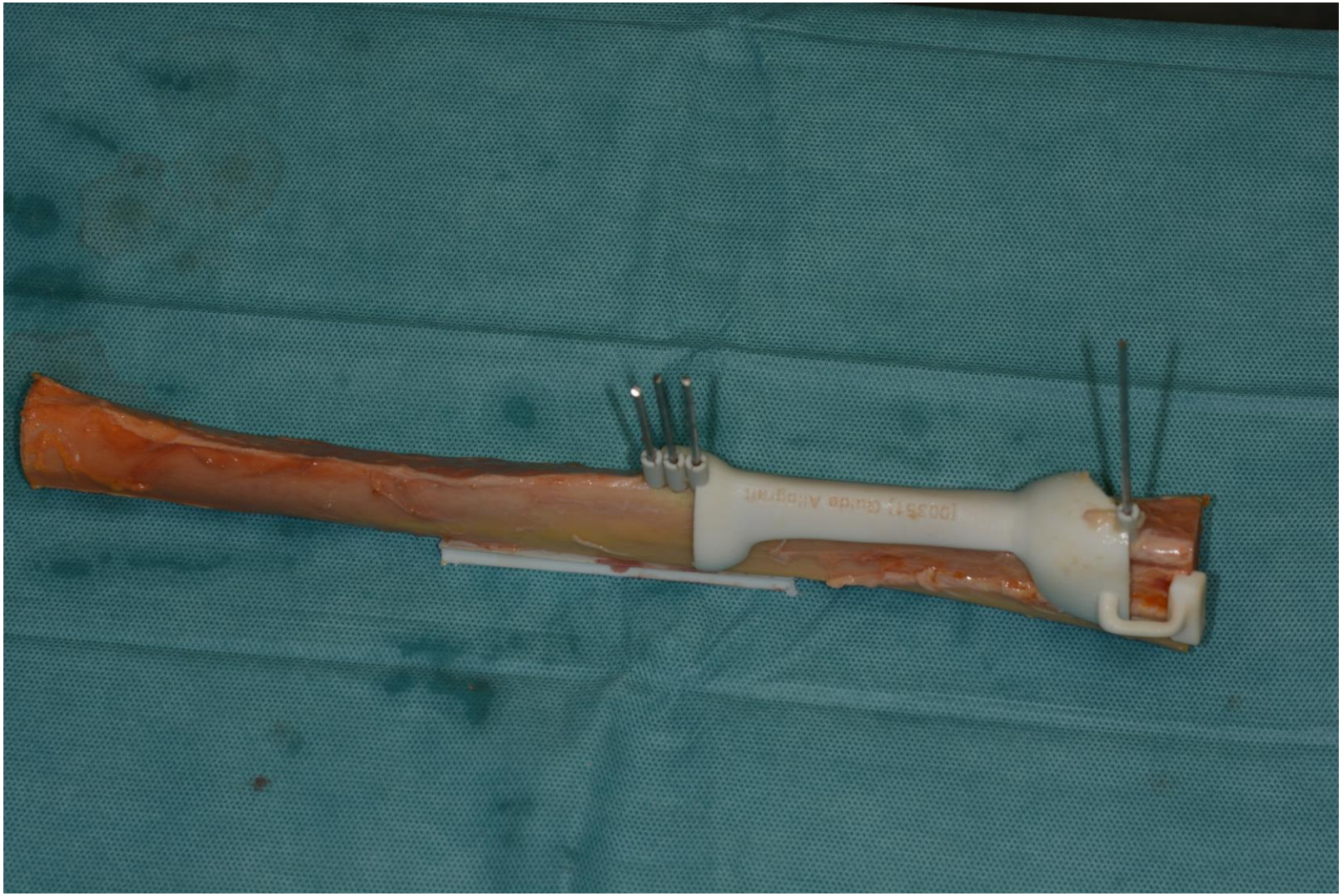
diaphyseal leg; complete; allograft



May 4, 2017

SarcomaSurgery

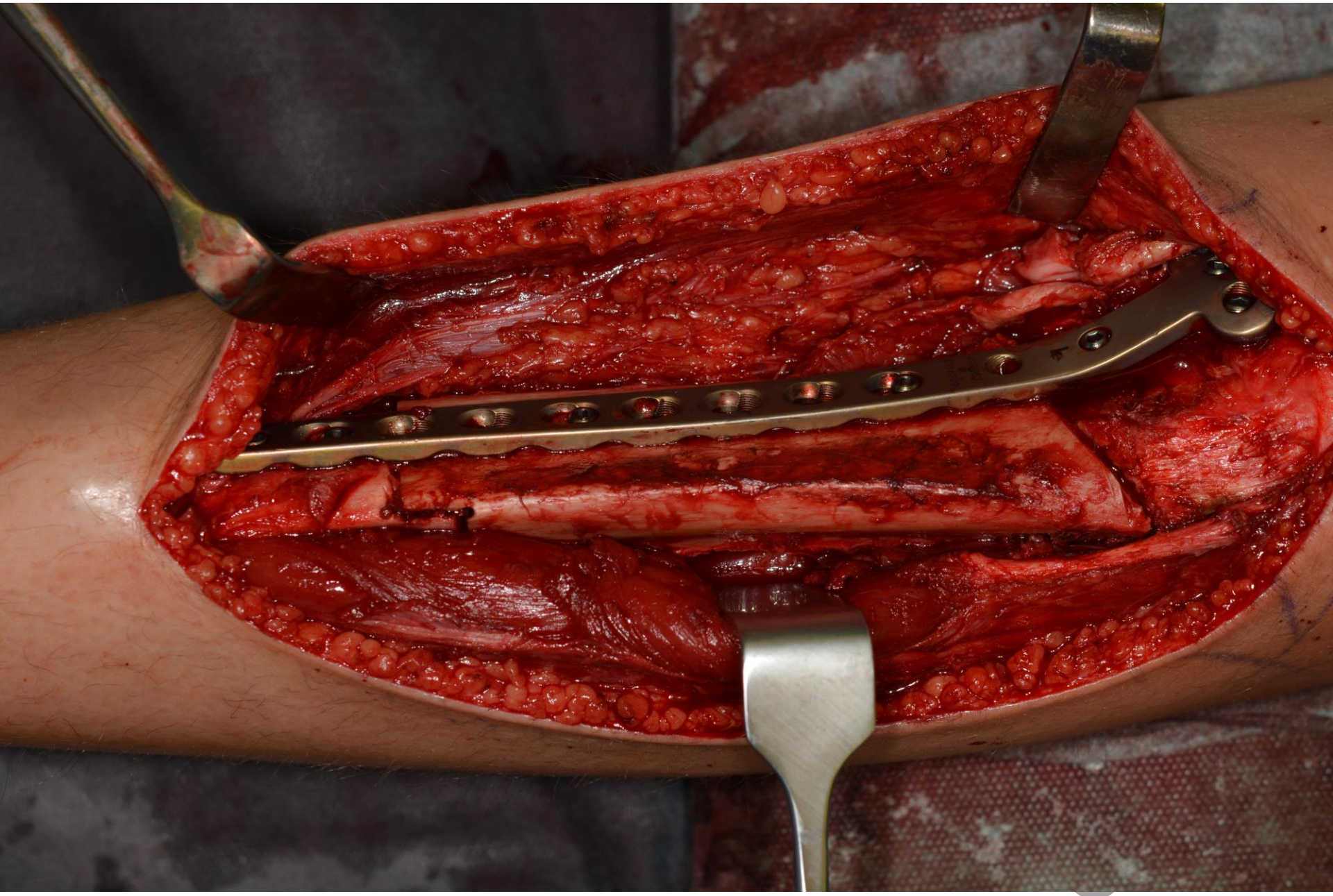
diaphyseal leg; complete; allograft



May 4, 2017

SarcomaSurgery

diaphyseal leg; complete; allograft



diaphyseal leg; complete; allograft

May 4, 2017

diaphyseal leg; complete; allograft

SB May 11, 2017:

Completely removed, OFD like adamantinoma