forearm; proximal radius resection; fibula

♂ 25 yo mechanic 1st referral: 11.04.12

HPI:

Pain since September 2011 in left forearm

No relief under local therapy for tendinitis

Intermittent night pain

PMH:

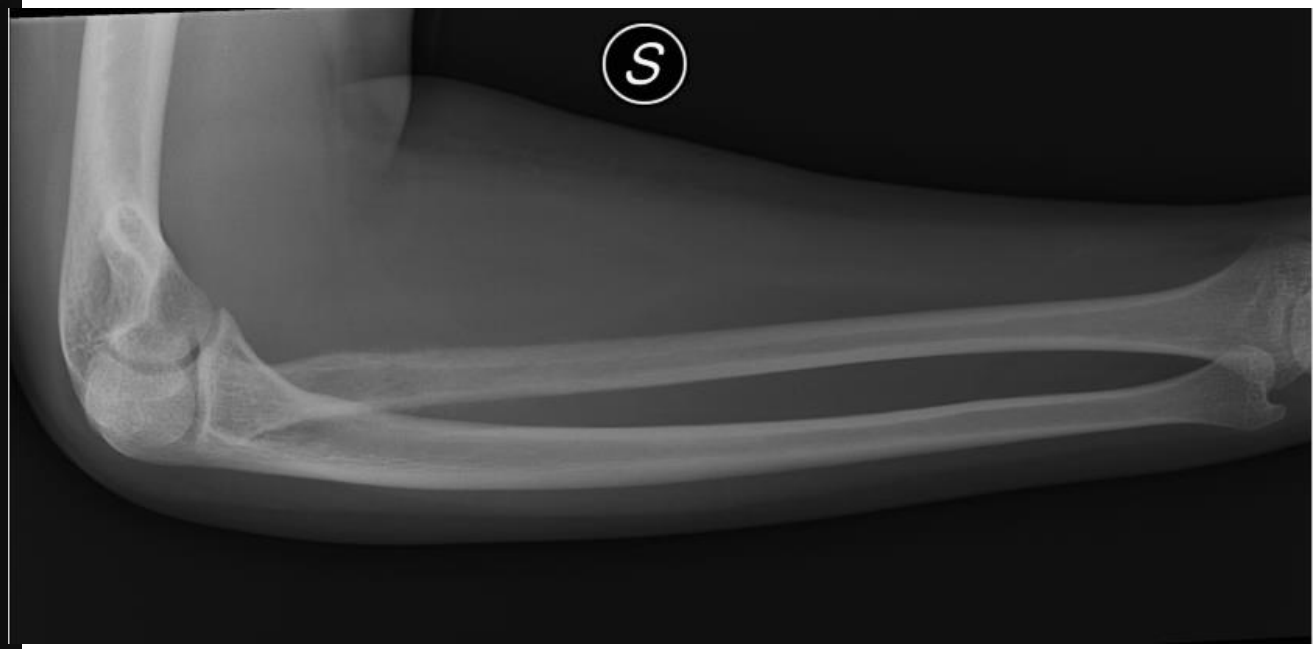
Non contributory

forearm; proximal radius resection; fibula

clinical findings:

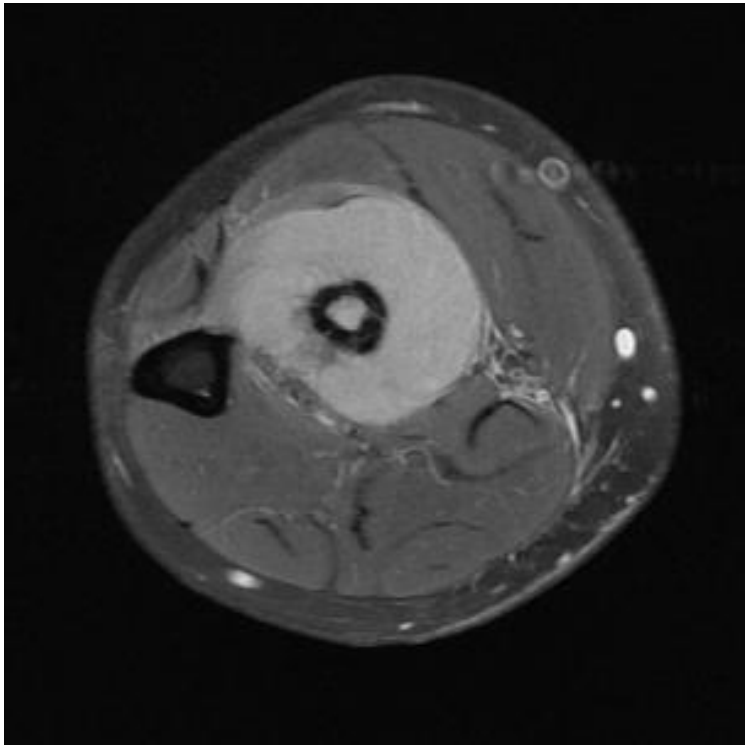
- **Swelling proximal left forearm**
- **Strained skin**
- **Palpable, hard mass (12cm), not tender to palpation**
- **Restriction of Supination and Pronation**
- **Normal neurological findings**

forearm; proximal radius resection; fibula
Xray: March 26th, 2012

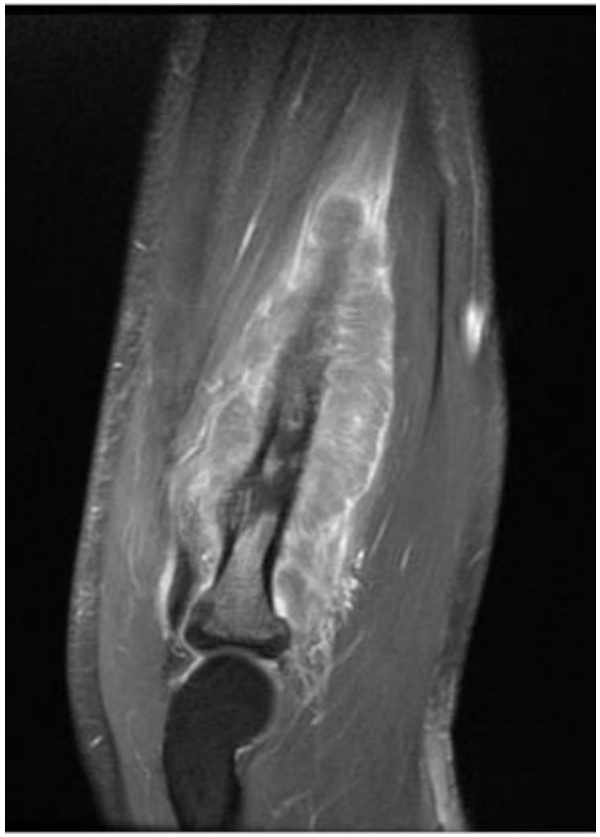


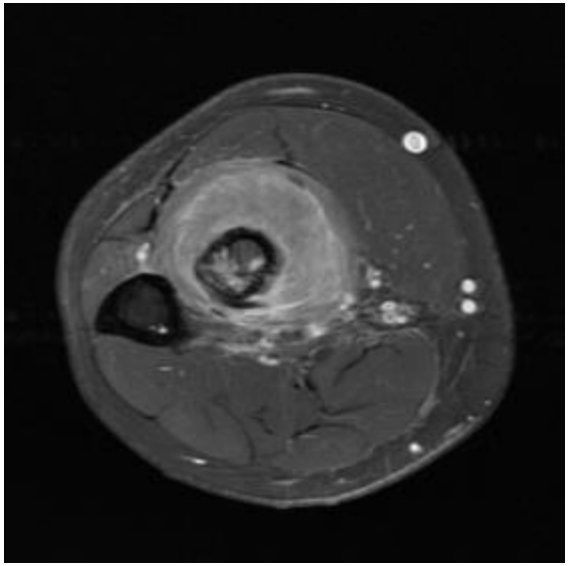
SarcomaSurgery

forearm; proximal radius resection; fibula
MRI: March 28th, 2012



forearm; proximal radius resection; fibula
MRI: March 28th, 2012

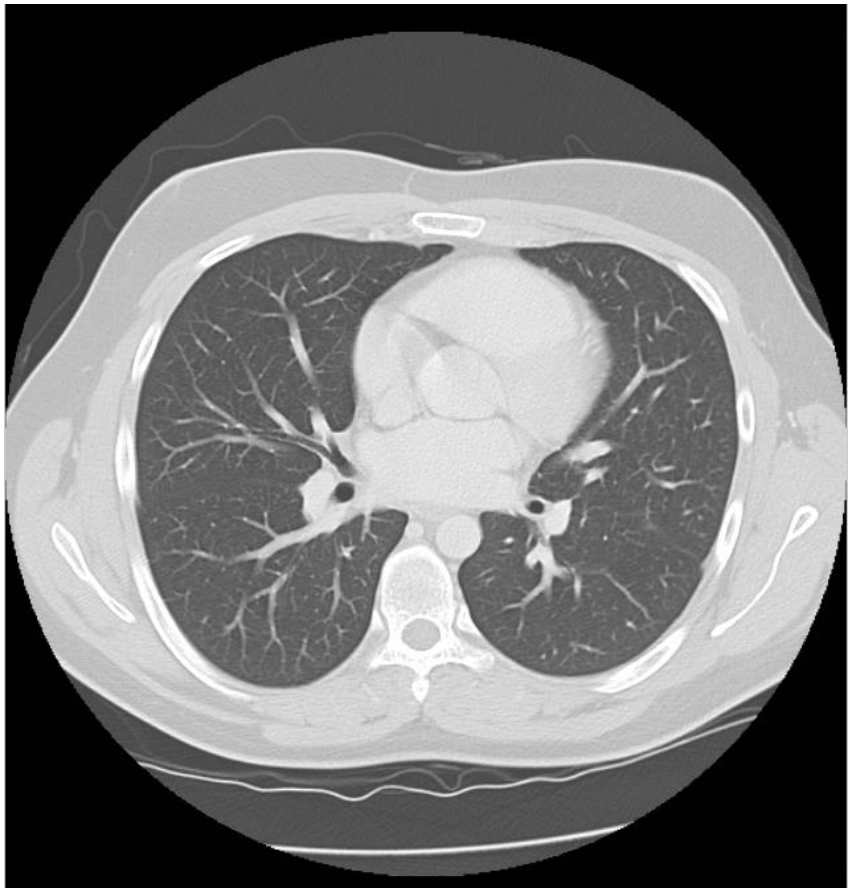




forearm; proximal radius resection; fibula
CT: March 28th, 2012

forearm; proximal radius resection; fibula

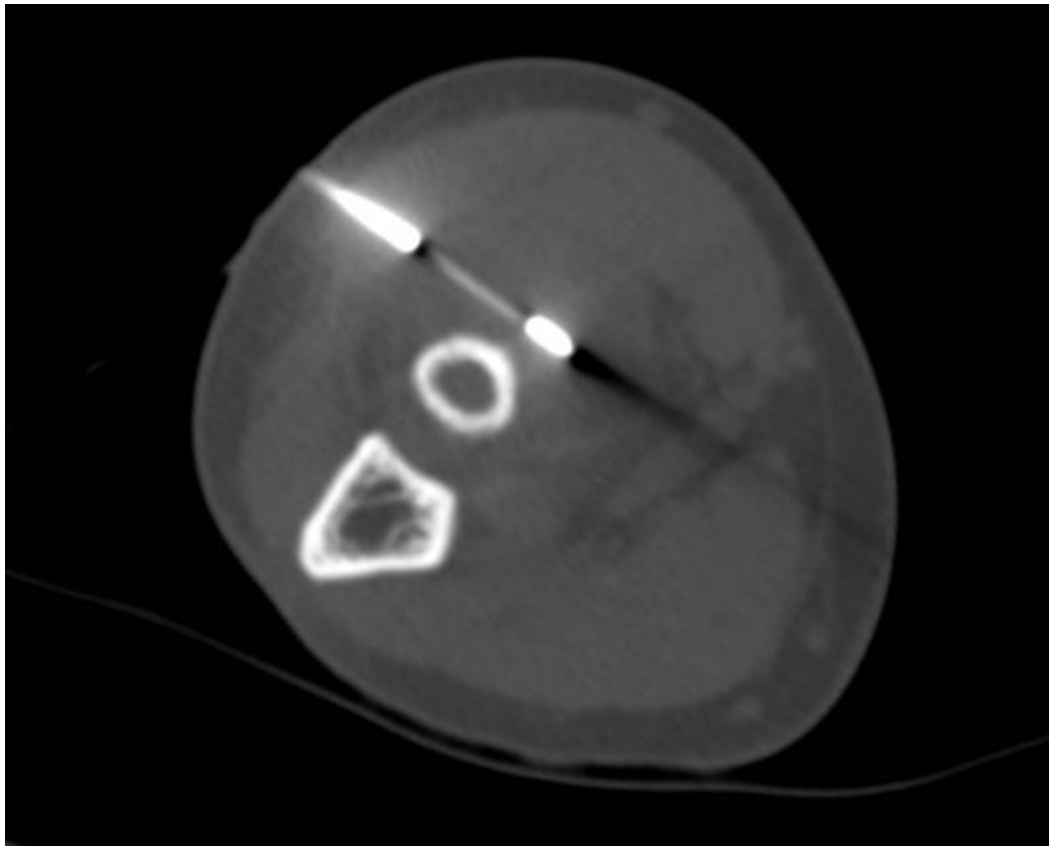
CT: March 28th, 2012



forearm; proximal radius resection; fibula
Scintygraphy: April 10th, 2012

No other bone lesions

forearm; proximal radius resection; fibula
CT Biopsy: April 11th, 2012



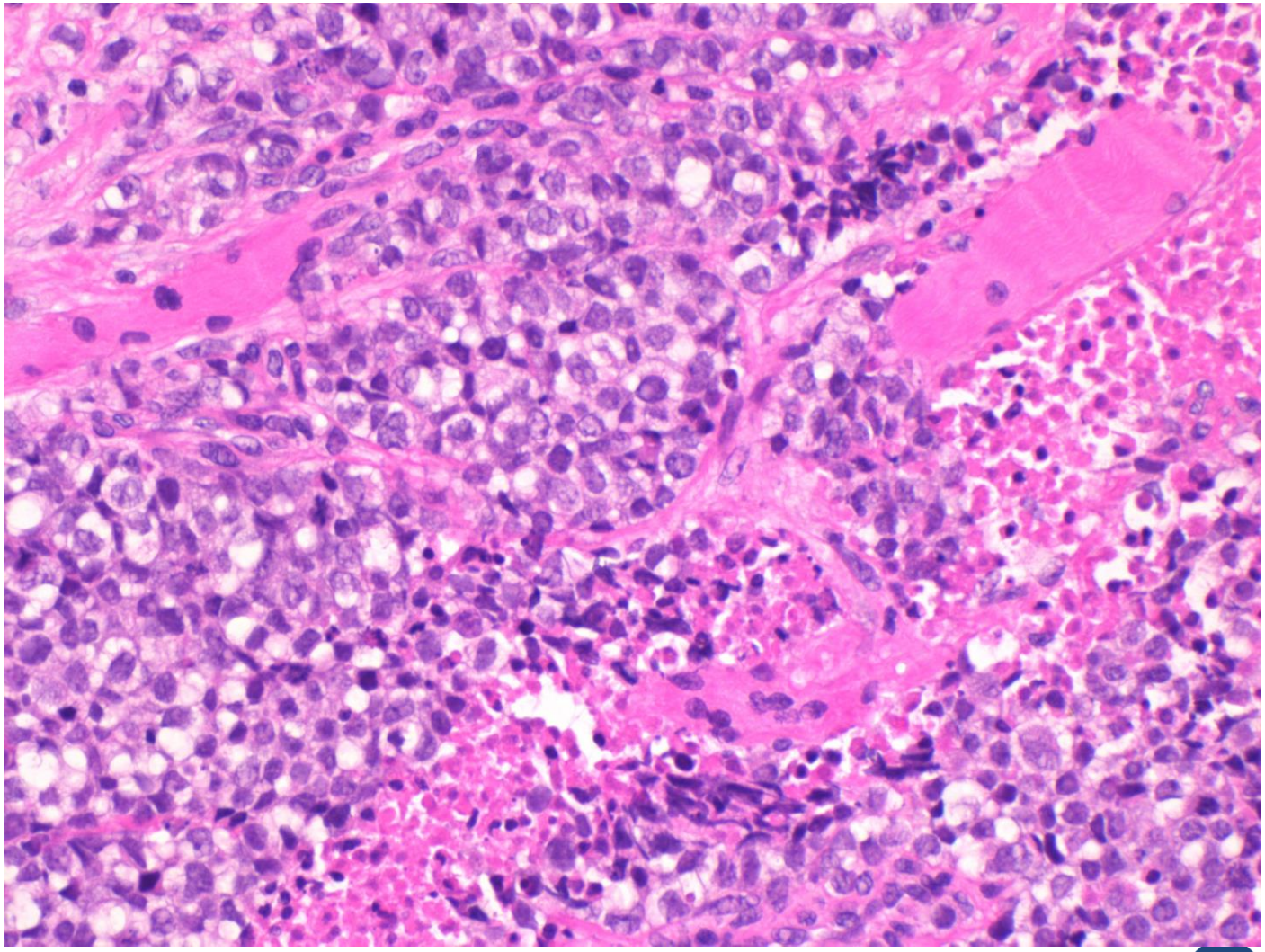
forearm; proximal radius resection; fibula
CT Biopsy: April 11th, 2012

Klinische Angaben
V. a. Sarkom des Unterarms links. Biopsie des Musculus supinator links. Sarkom?

Angaben zur Probe
Musculus supinator links

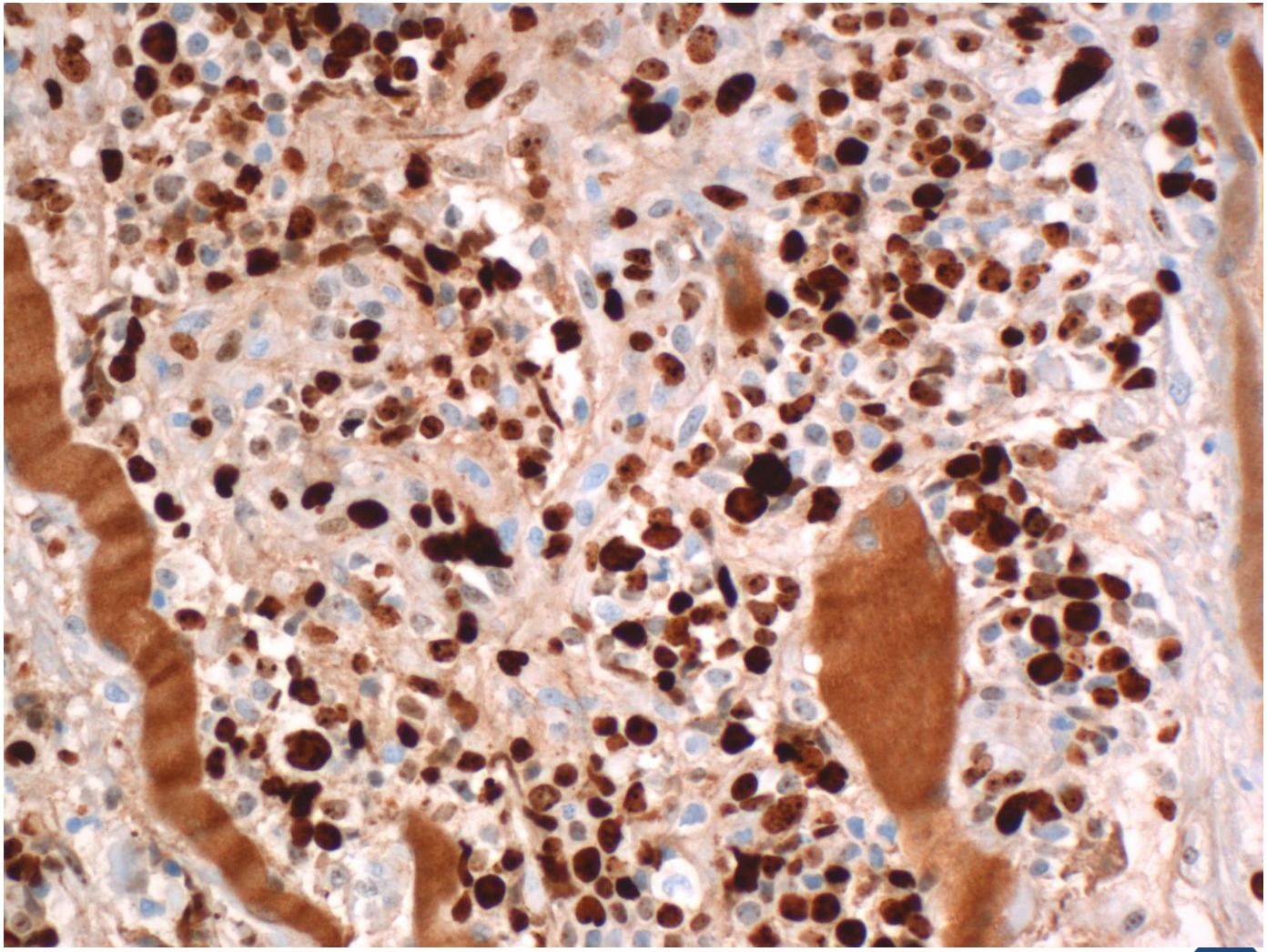
Makroskopischer Befund
Drei weiss-graue Exzisate, 15 bis 20mmbaumn

forearm; proximal radius resection; fibula
CT Biopsy: April 11th, 2012



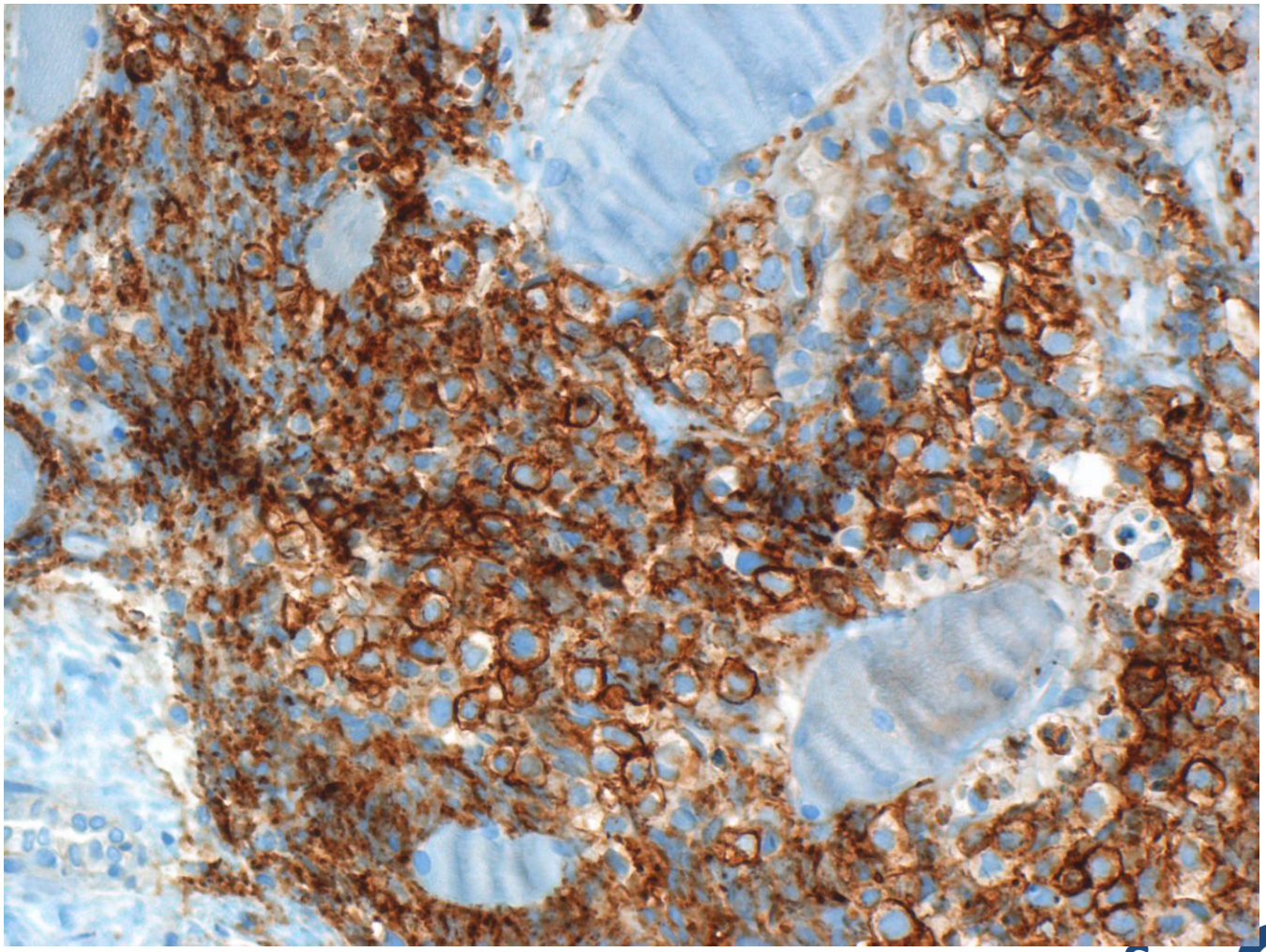
forearm; proximal radius resection; fibula
CT Biopsy: April 11th, 2012

Mib1

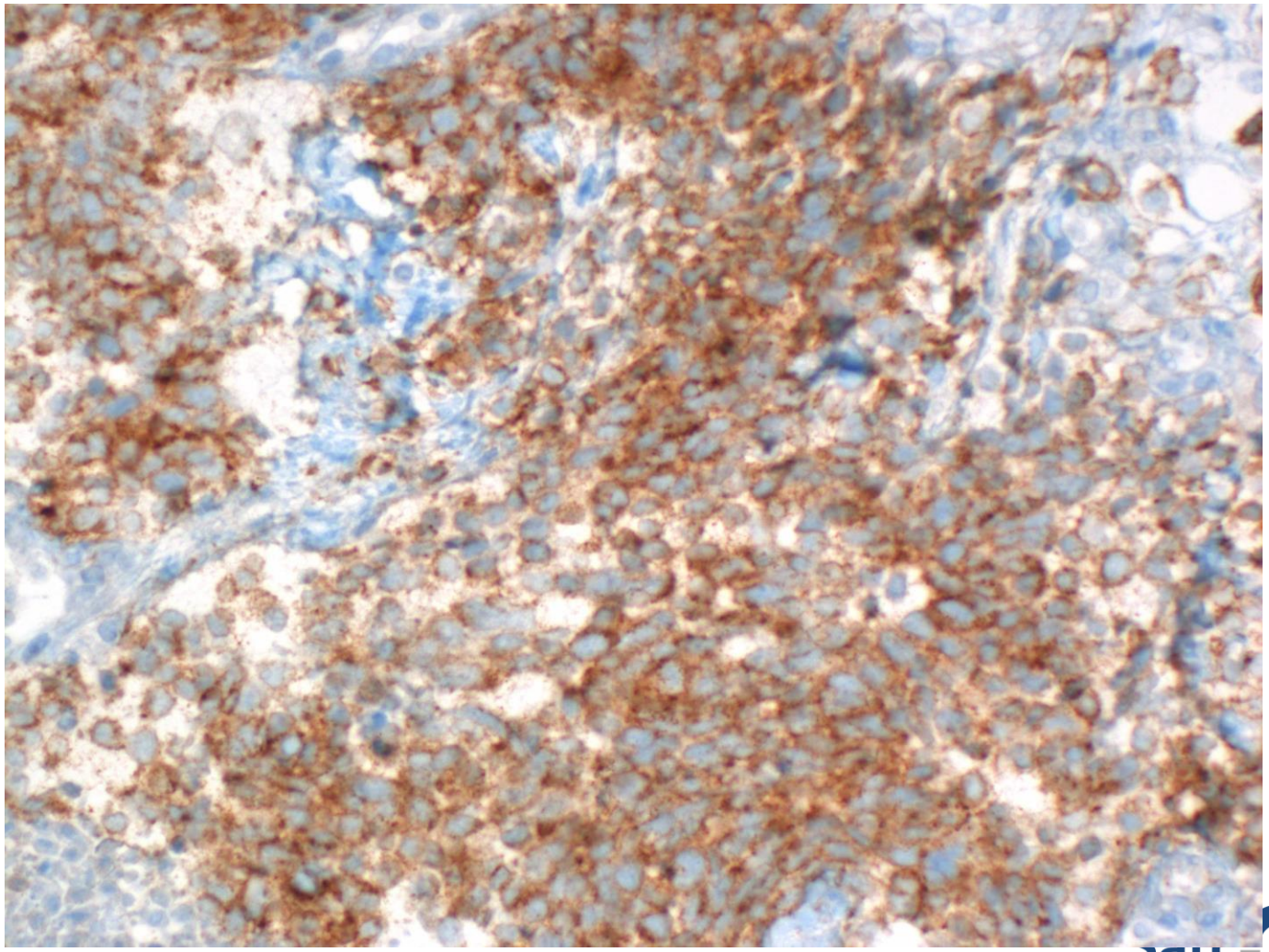


forearm; proximal radius resection; fibula
CT Biopsy: April 11th, 2012

CD99



forearm; proximal radius resection; fibula
CT Biopsy: April 11th, 2012



CD117

forearm; proximal radius resection; fibula
Result CT Biopsy: April 11th, 2012

Immunprofil: Positive membranäre Expression von CD99, CD117. Hoher Proliferationsindex (MIB-1 60-70%, heterogen).
Negativität für panCK, Desmin, CD34, CD31, S100, oct3/4, EMA. Kein Verlust von Ini1. Reaktive CD45 positive Lymphozyten.

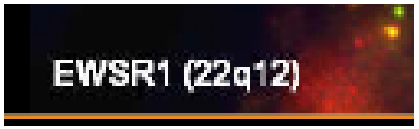
Provisorischer Bericht

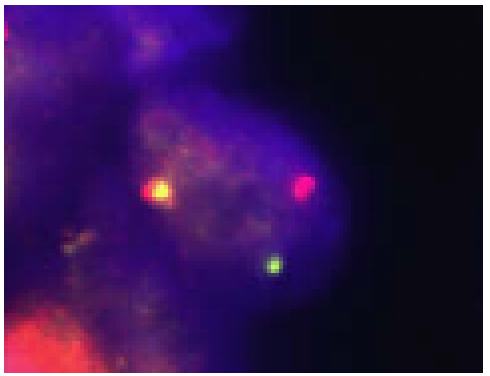
Diagnose

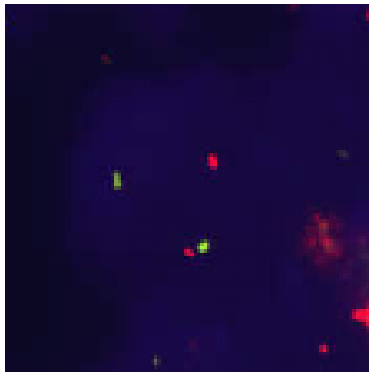
Anteile einer hochgradig malignen, teils nekrotischen Neoplasie (Musculus supinator links). vgl. Kommentar

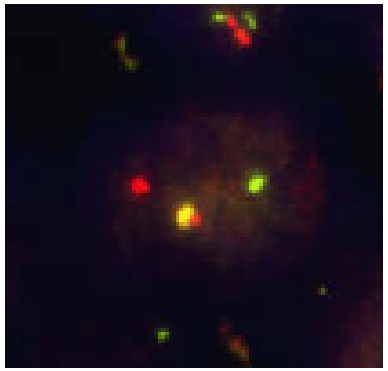
SarcOmaSurgery

forearm; proximal radius resection; fibula
CT Biopsy: April 11th, 2012







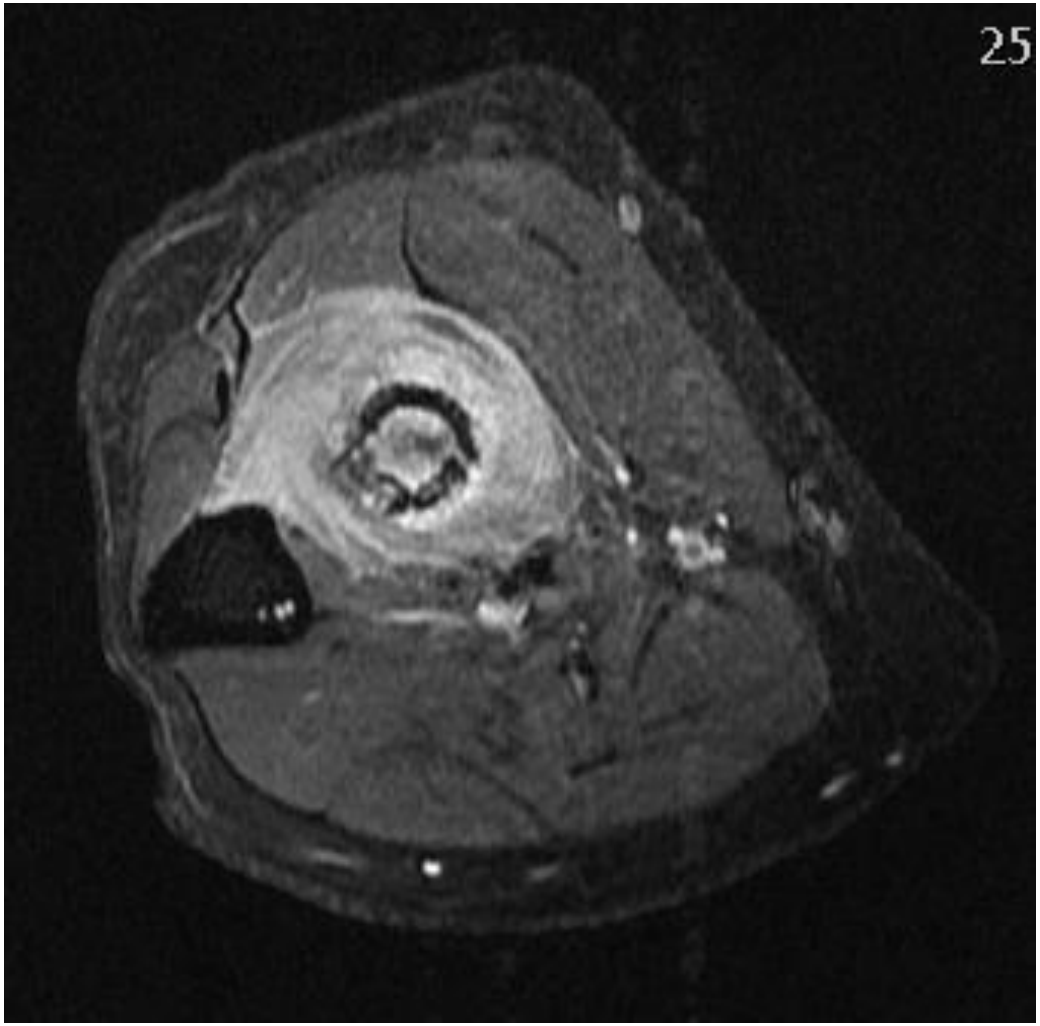


forearm; proximal radius resection; fibula
Sarcoma- Board: April 19th, 2012

Diagnosis: Ewing‘s Sarcoma

- **Planning an other MRI in Bellinzona**
- **Start with E.W.I.N.G.99-Protocol in Bellinzona**

forearm; proximal radius resection; fibula
May 25, 2012



SarcOmaSurgery

forearm; proximal radius resection; fibula
Planning CT June 20, 2012

forearm; proximal radius resection; fibula
Sarcoma- Board: June 7th, 2012

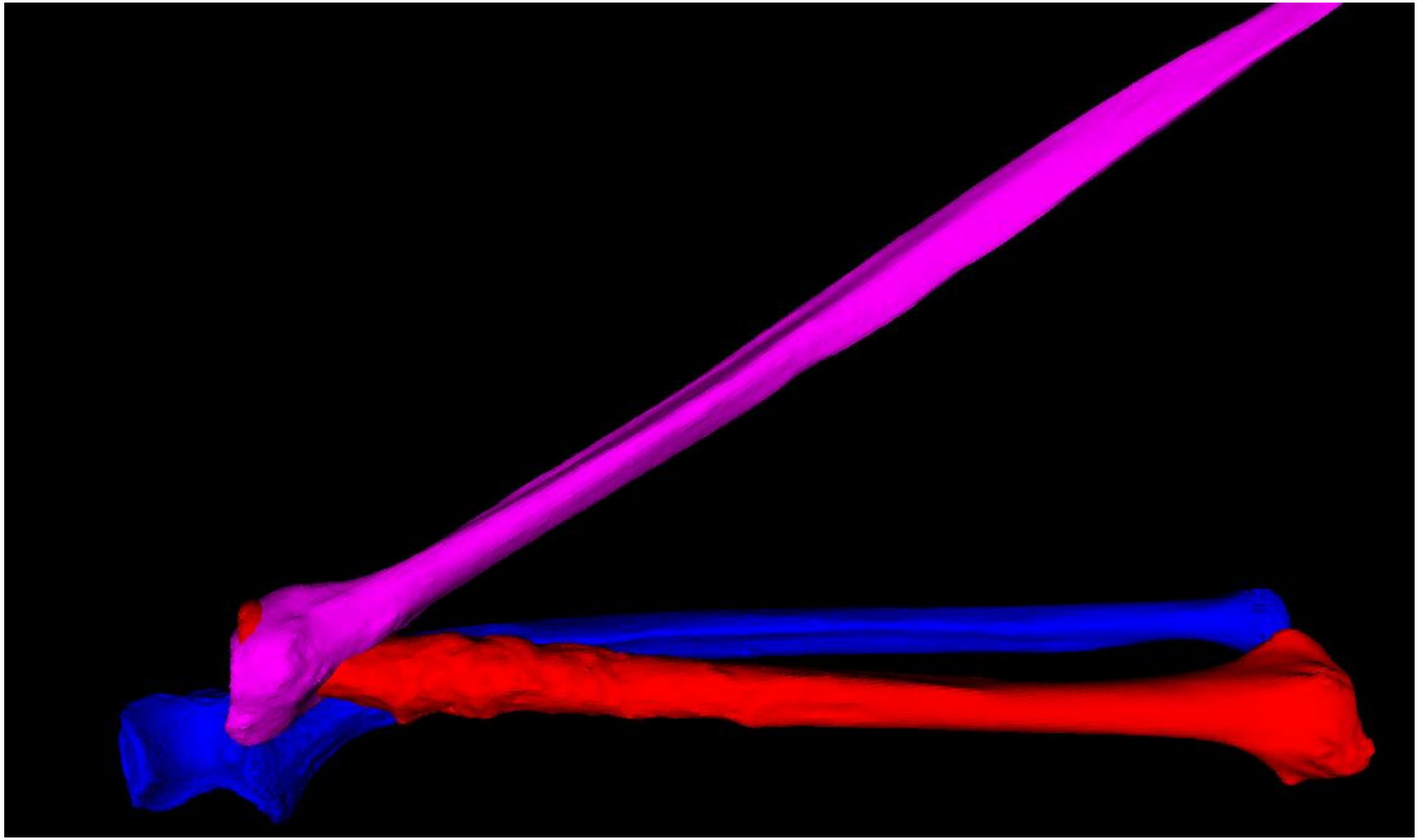
Good initial response

Decision to continue:

- **After two more cycles of chemotherapy a new MRI / staging in Bellinzona**
- **after it consider a tumor resection**

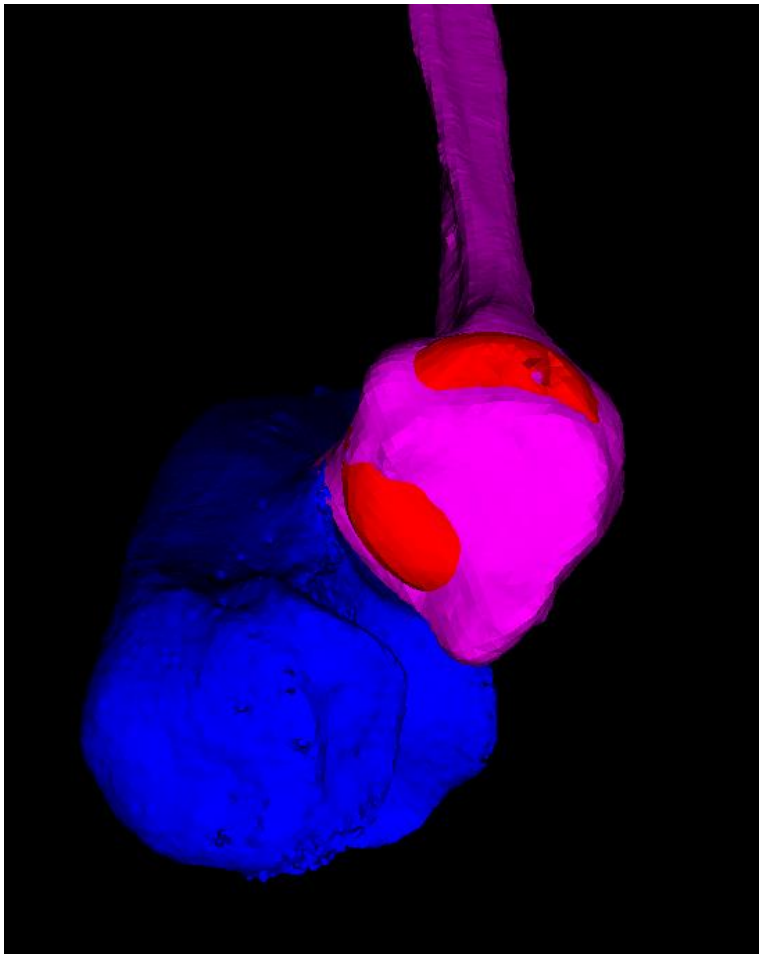
forearm; proximal radius resection; fibula

1. Fibula anhand proximalem Gelenk auf Radius Köpfchen aligniert



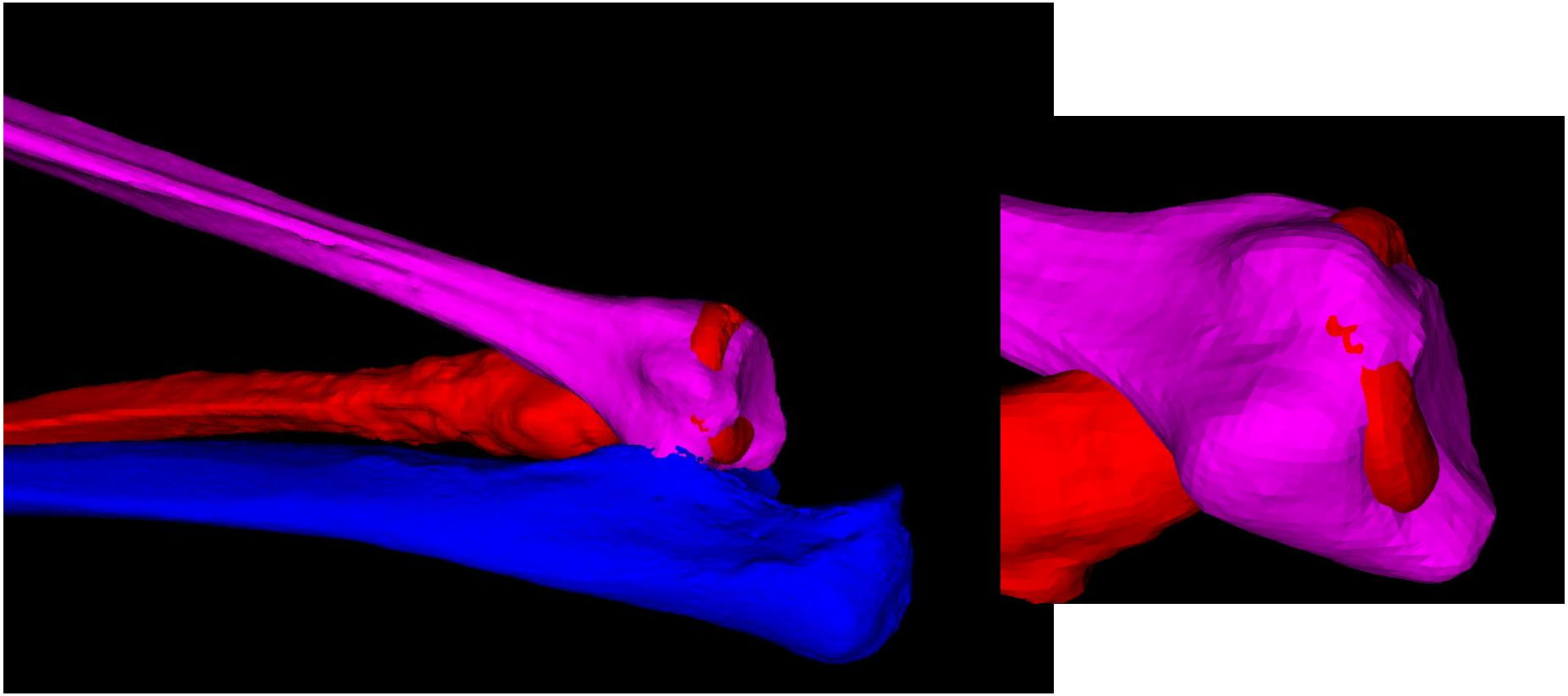
forearm; proximal radius resection; fibula

1. Fibula anhand proximalem Gelenk auf Radius Köpfchen aligniert



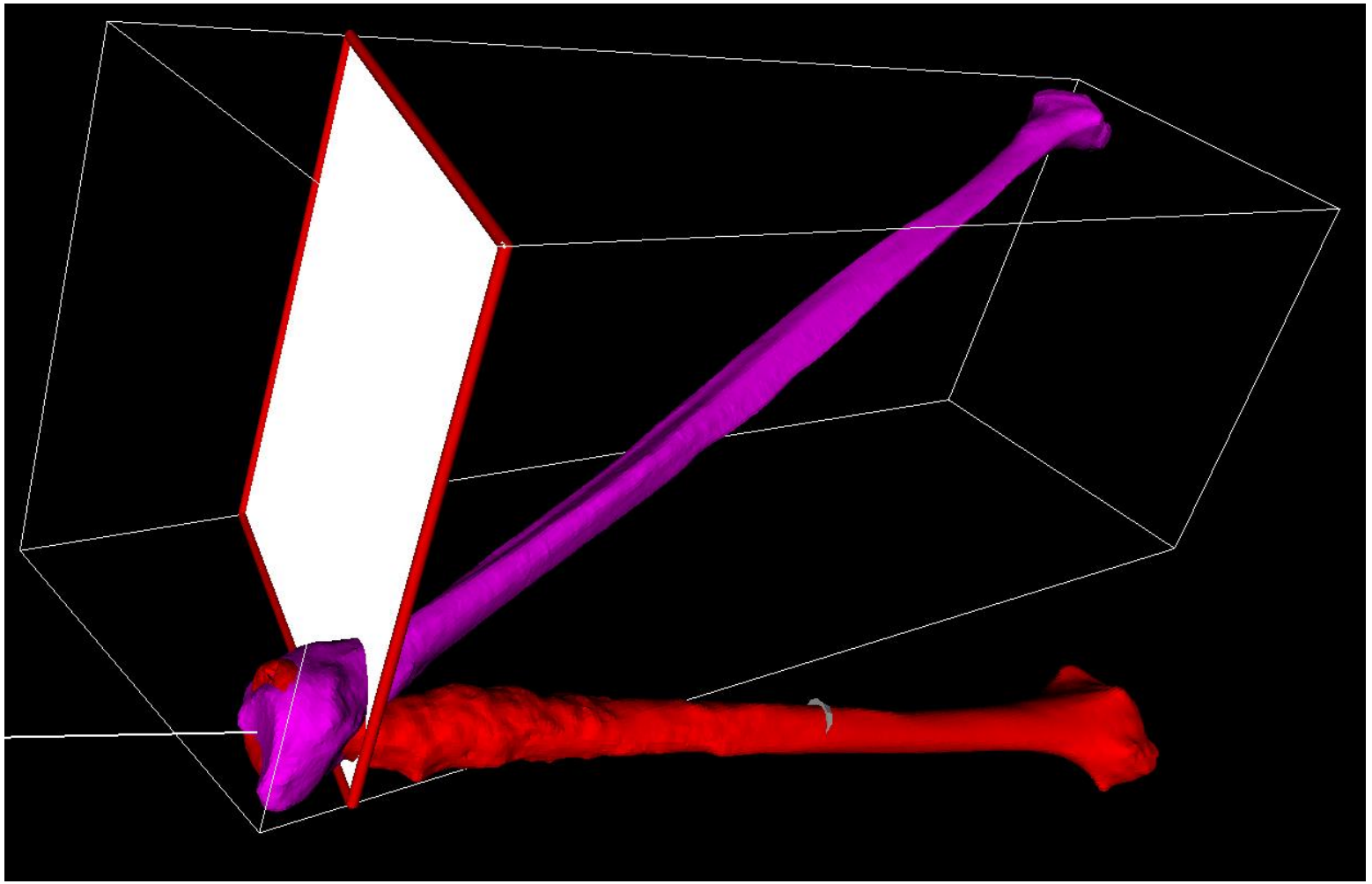
forearm; proximal radius resection; fibula

1. Fibula anhand proximalem Gelenk auf Radius Köpfchen aligniert



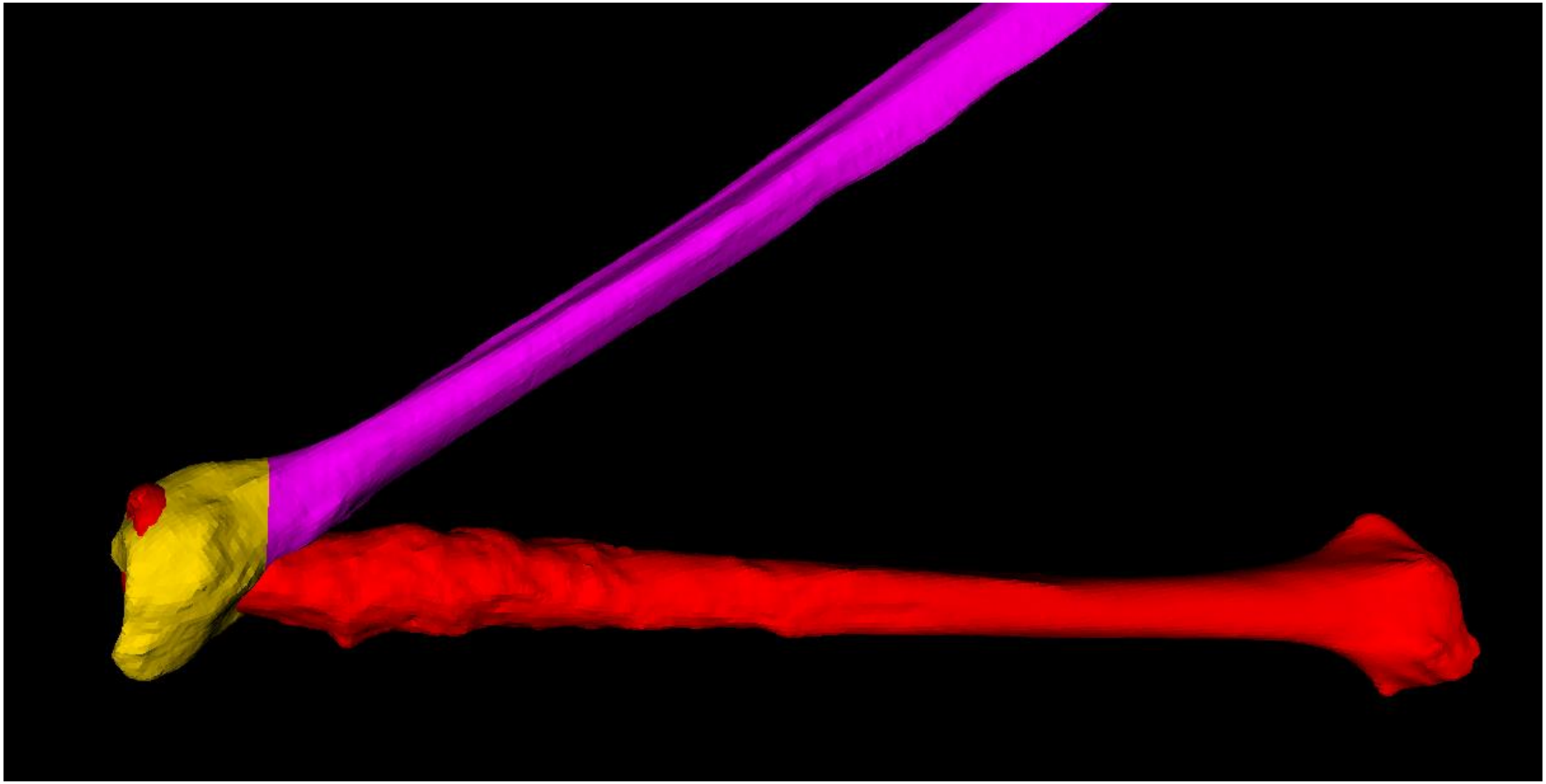
forearm; proximal radius resection; fibula

2. Durchtrennung Fibula (Schnittebene 1)



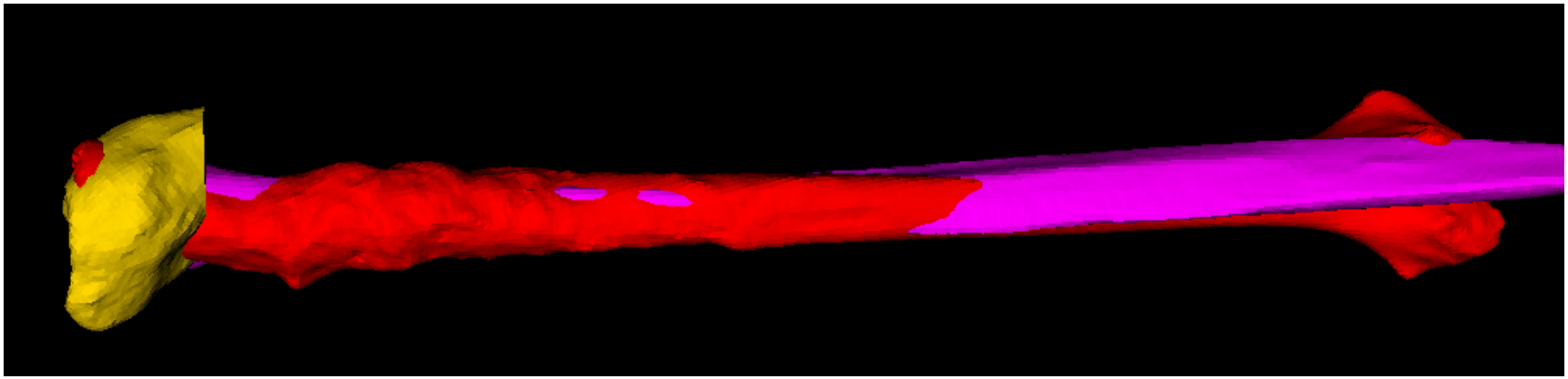
forearm; proximal radius resection; fibula

2. Durchtrennung Fibula (Schnittebene 1)



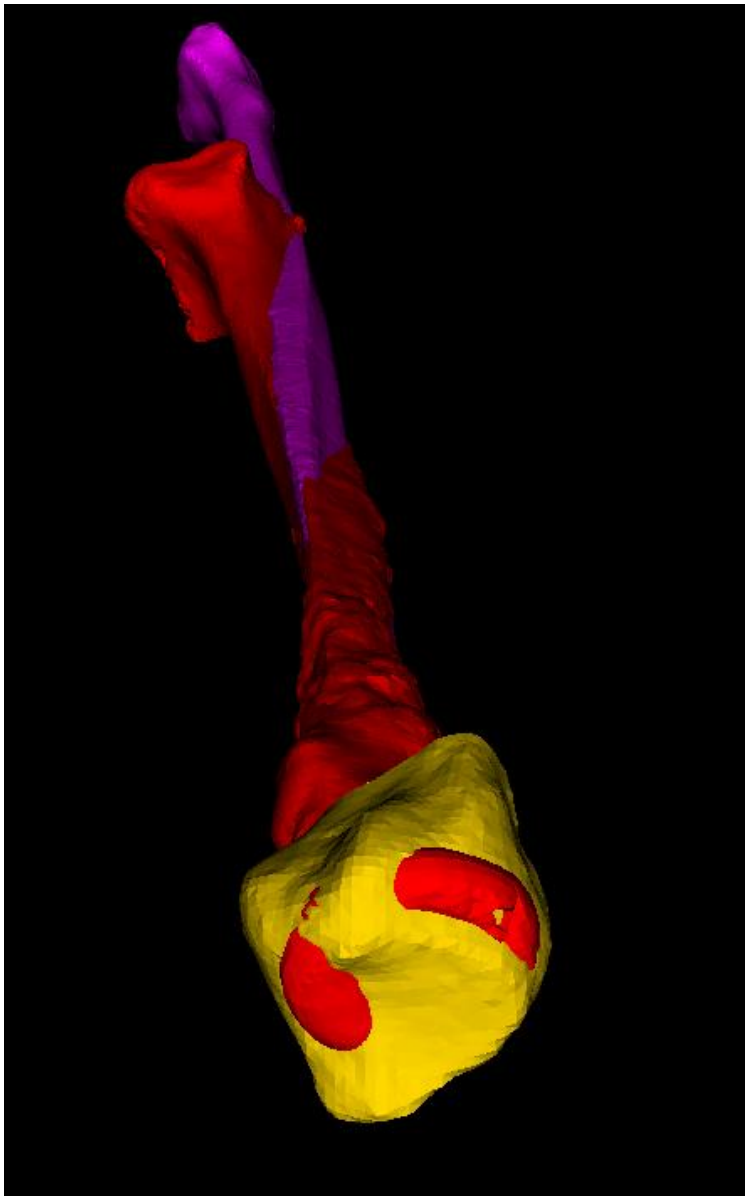
forearm; proximal radius resection; fibula

3. Alignieren des Fibula Schaftes auf den Radius Schaft



forearm; proximal radius resection; fibula

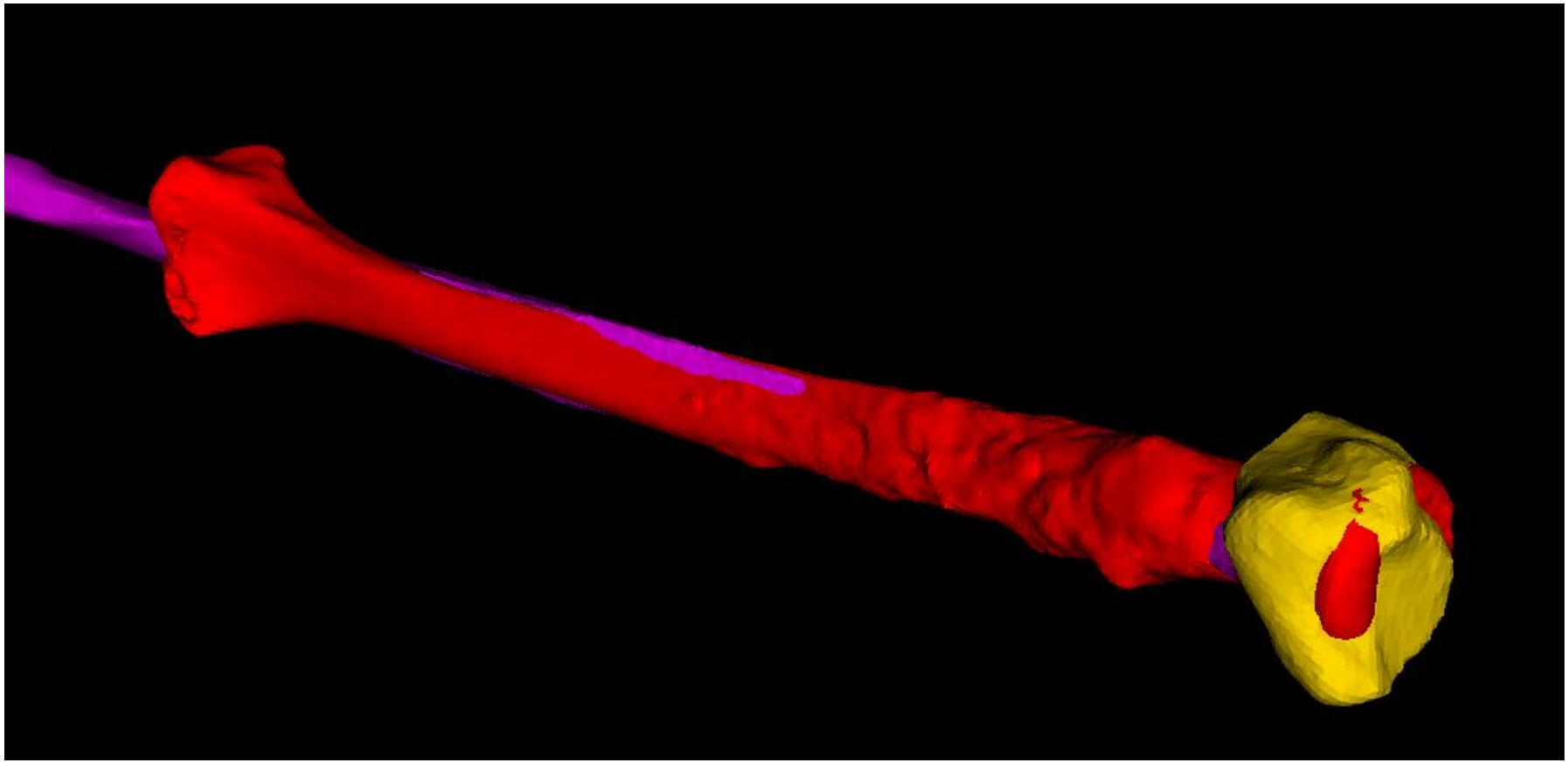
3. Alignieren des Fibula Schaftes auf den Radius Schaft



SarcOmaSurgery

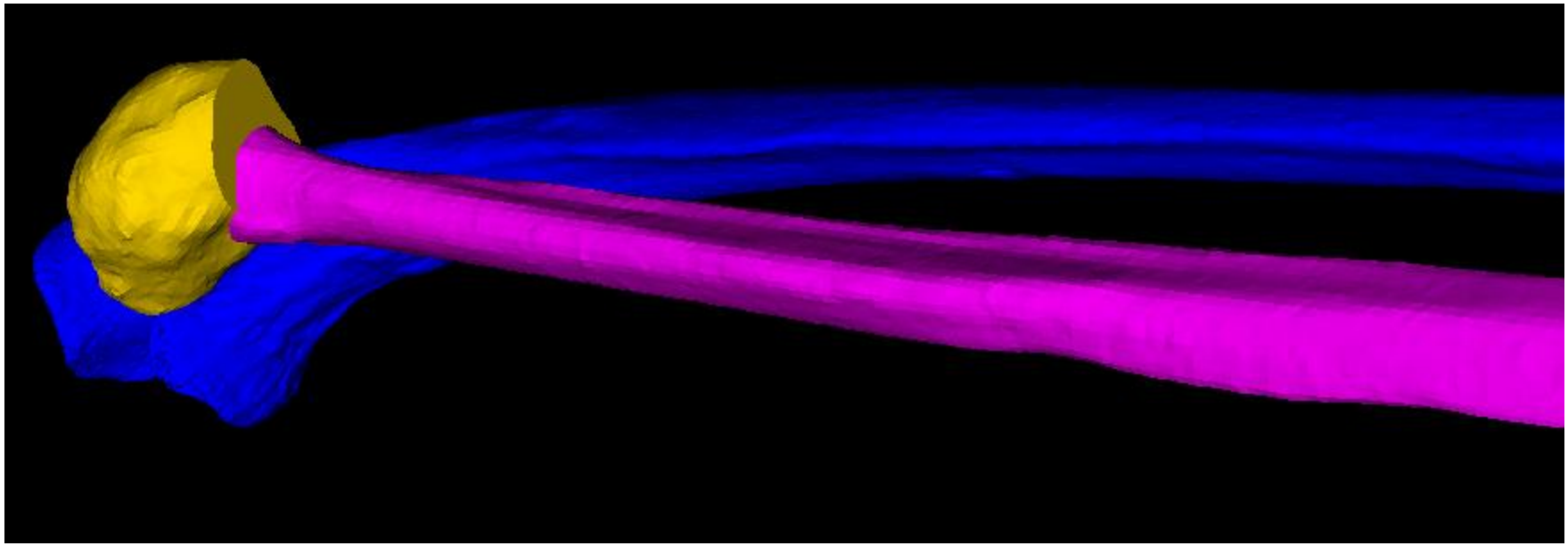
forearm; proximal radius resection; fibula

3. Alignieren des Fibula Schaftes auf den Radius Schaft



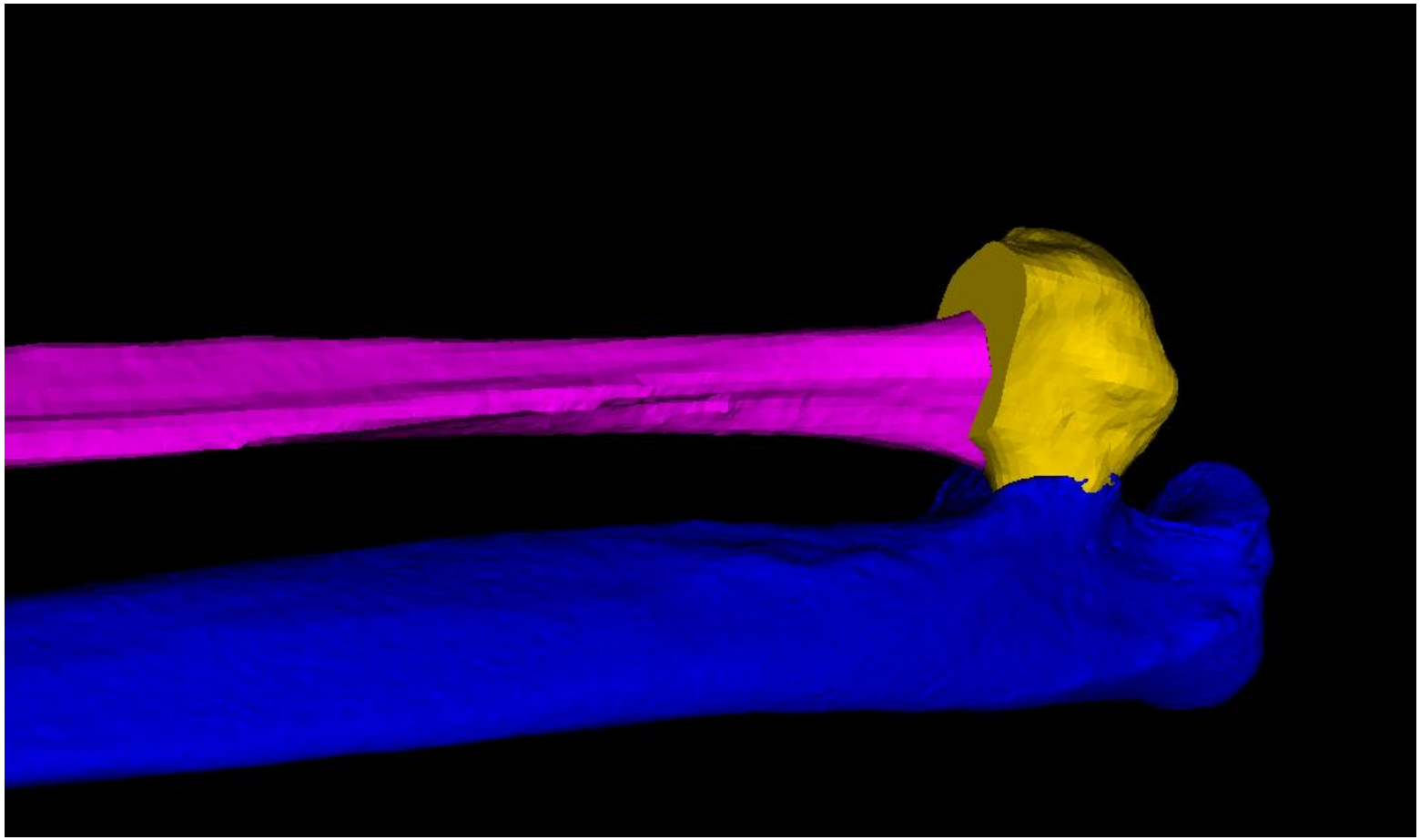
forearm; proximal radius resection; fibula

3. Alignieren des Fibula Schaftes auf den Radius Schaft



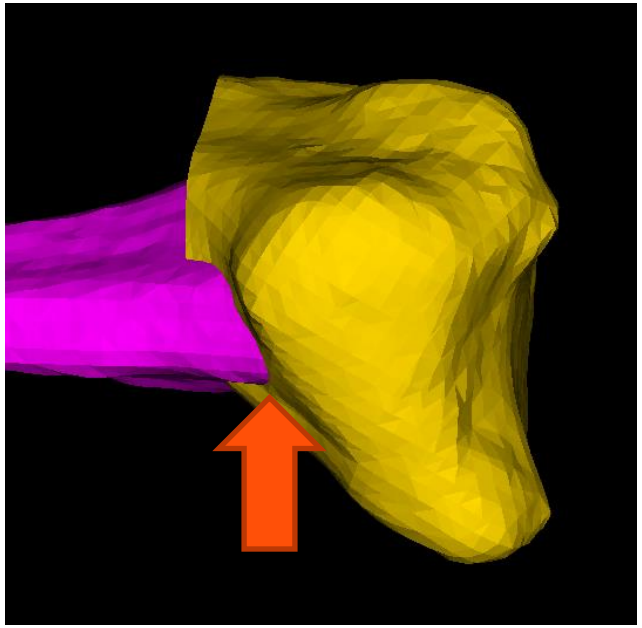
forearm; proximal radius resection; fibula

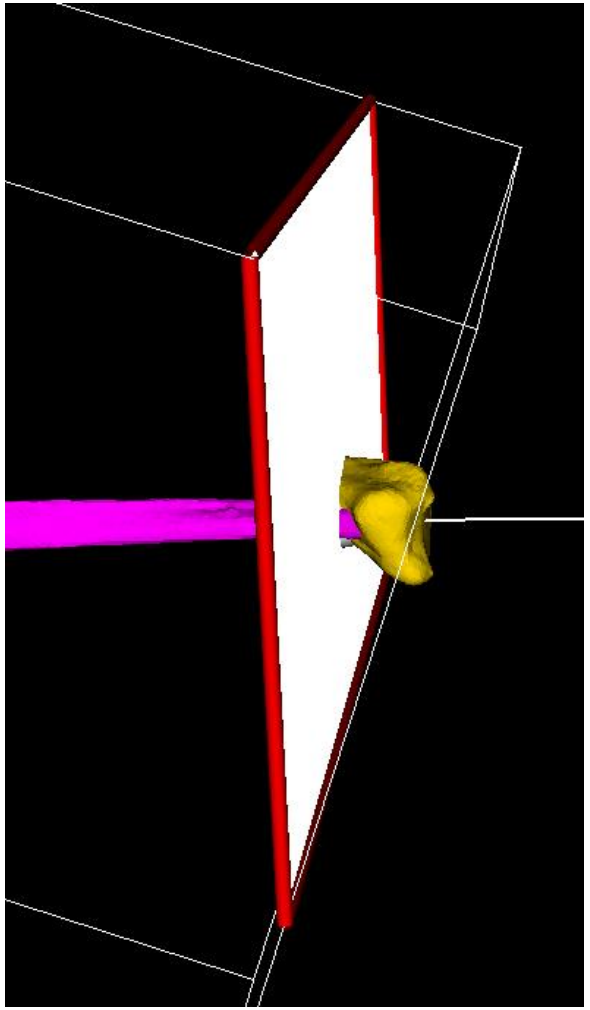
3. Alignieren des Fibula Schaftes auf den Radius Schaft



forearm; proximal radius resection; fibula

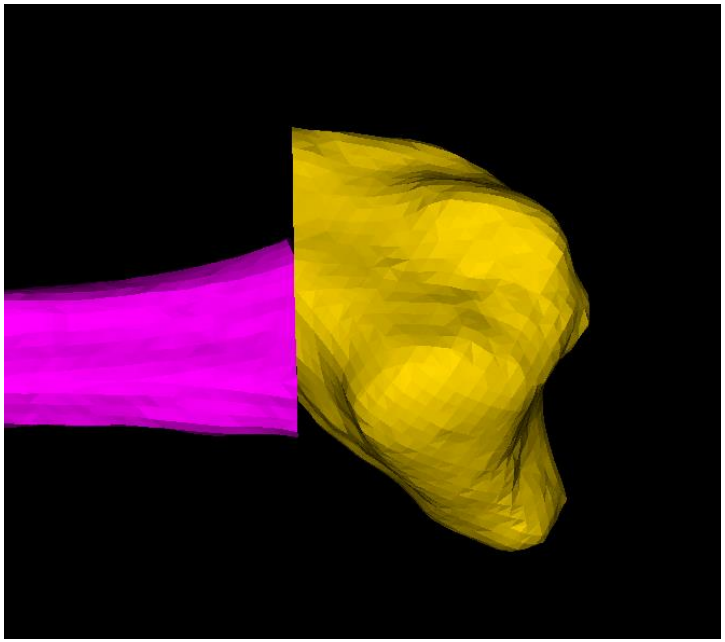
4. Kürzen des alignierten, proximalen Fibula-Schaftes (Schnittebene 2)

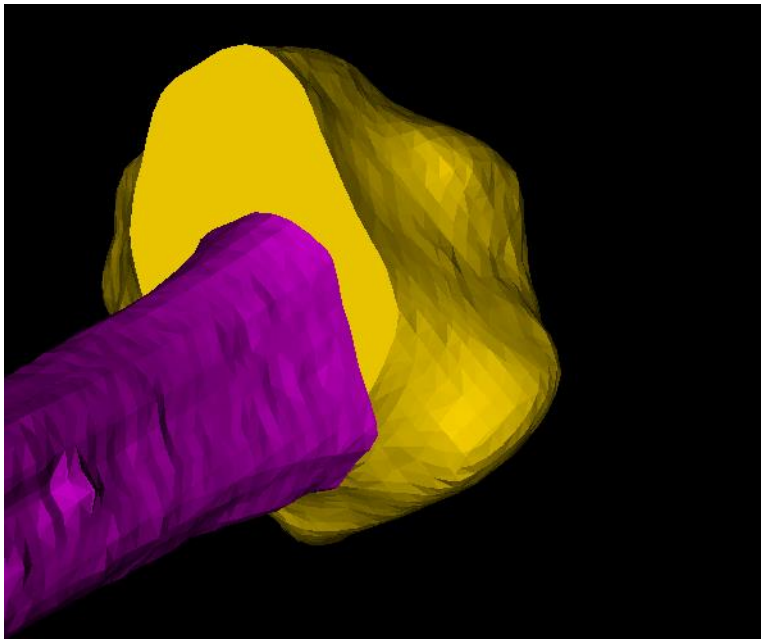




forearm; proximal radius resection; fibula

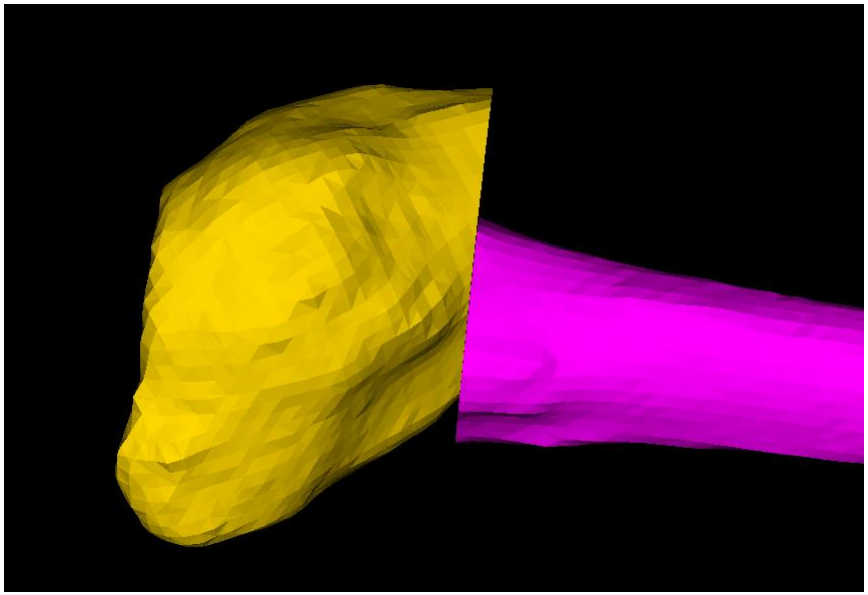
4. Kürzen des alignierten, proximalen Fibula-Schaftes (Schnittebene 2)





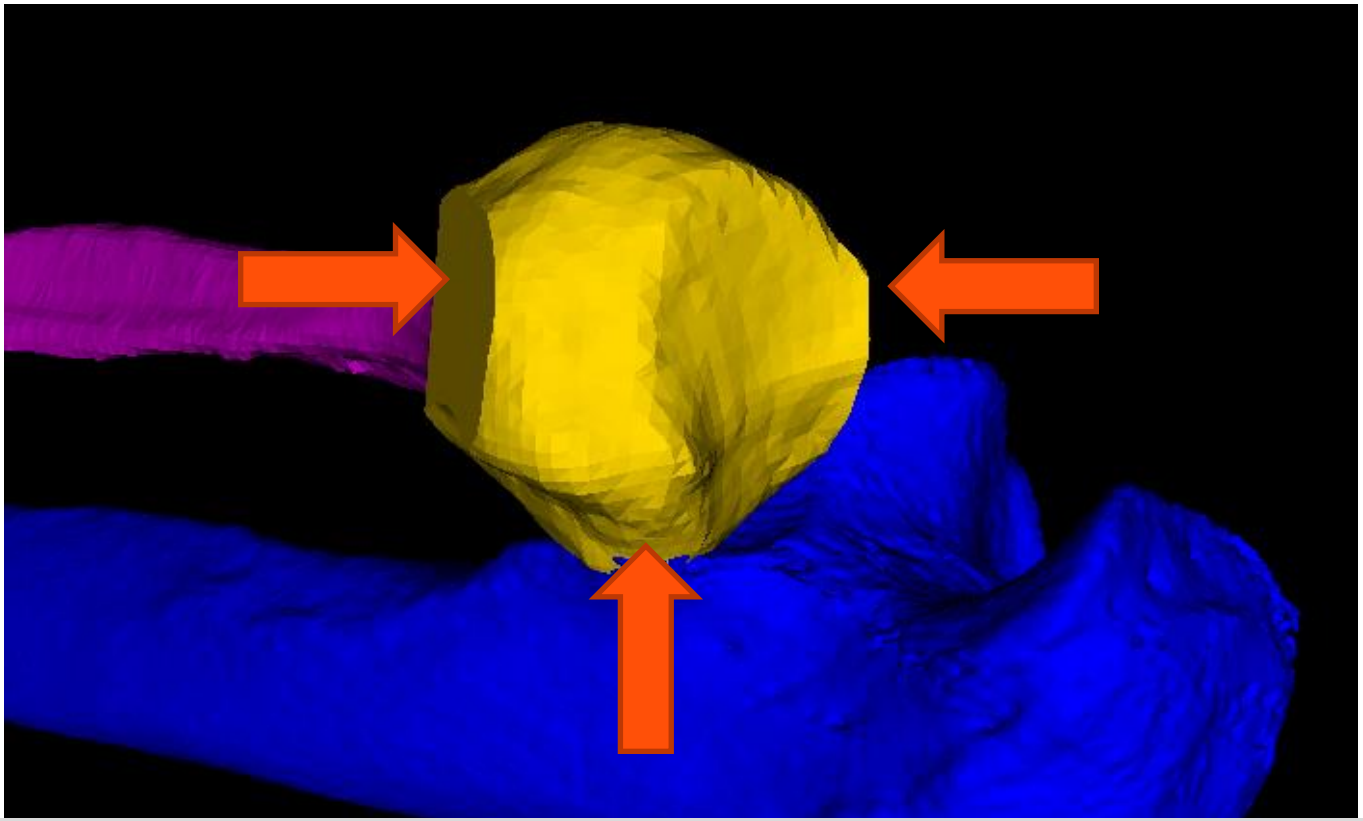
forearm; proximal radius resection; fibula

4. Kürzen des alignierten, proximalen Fibula-Schaftes (Schnittebene 2)



forearm; proximal radius resection; fibula

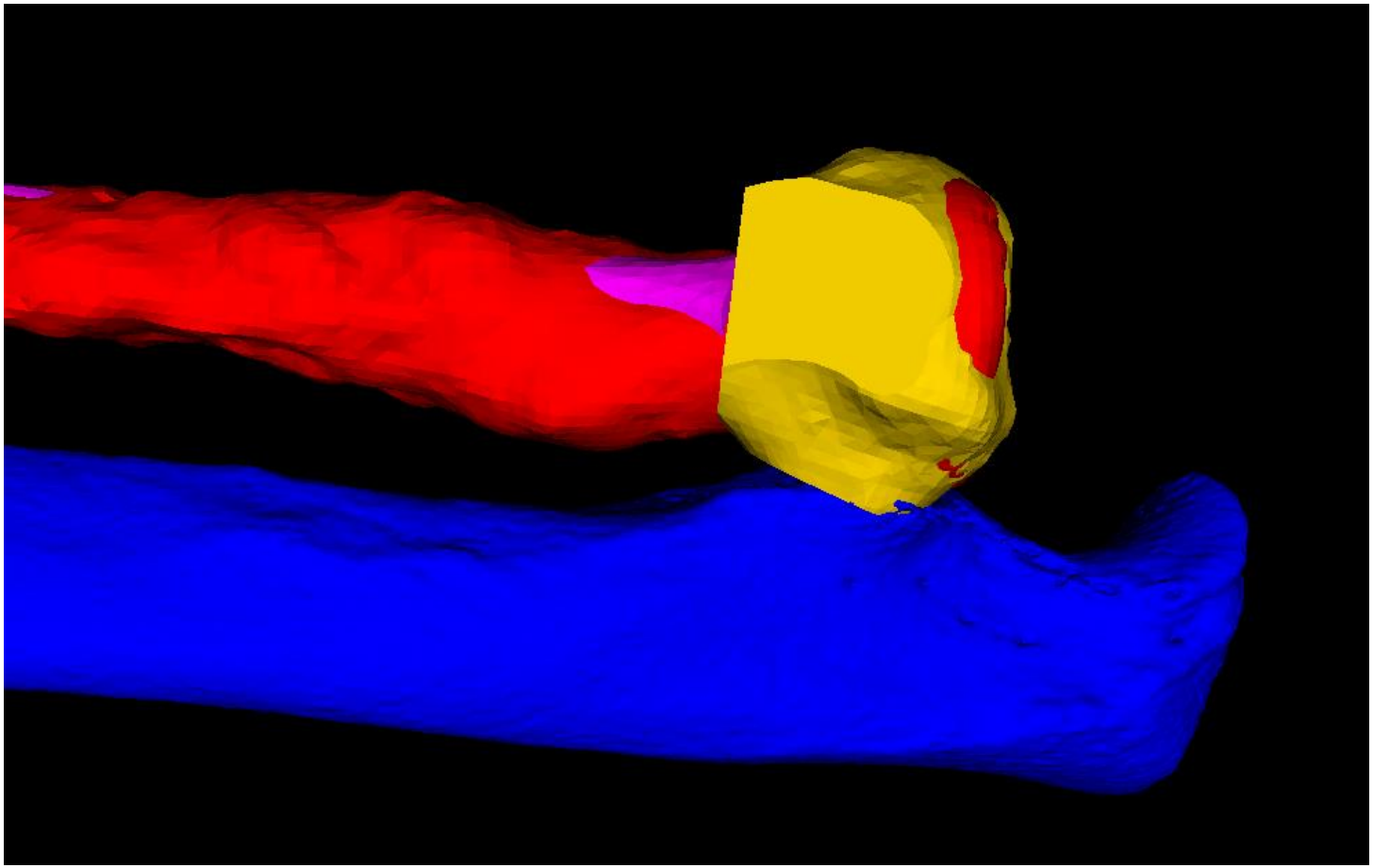
5. Beispiel für das modellierte Fibula-Köpfchen



Als Beispiel für die Modellierung wurde das Fibula-Köpfchen an 3 Seiten (siehe Pfeile) durch Ebenen gekürzt (kein Schnitt-Guide möglich, muss «von Hand» gemacht werden).

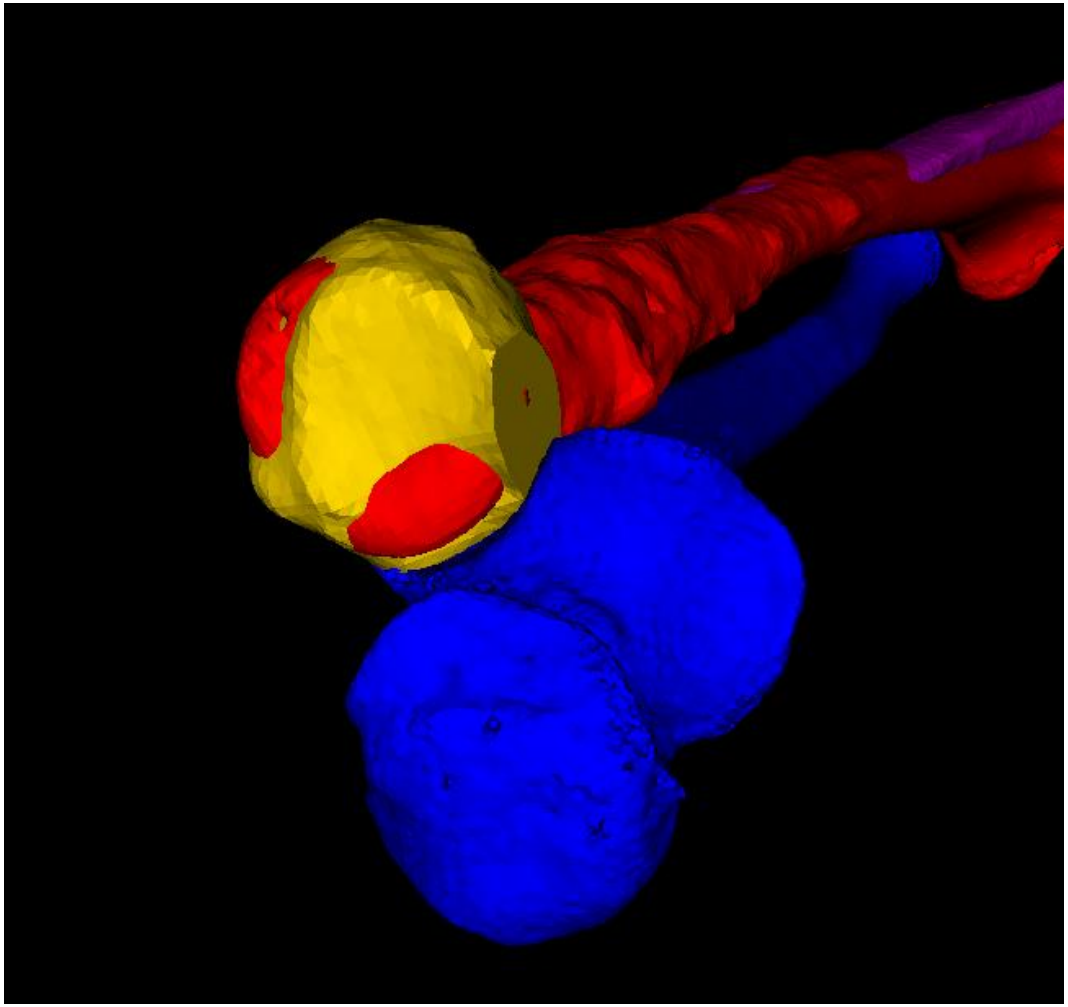
forearm; proximal radius resection; fibula

5. Beispiel für das modellierte Fibula-Köpfchen



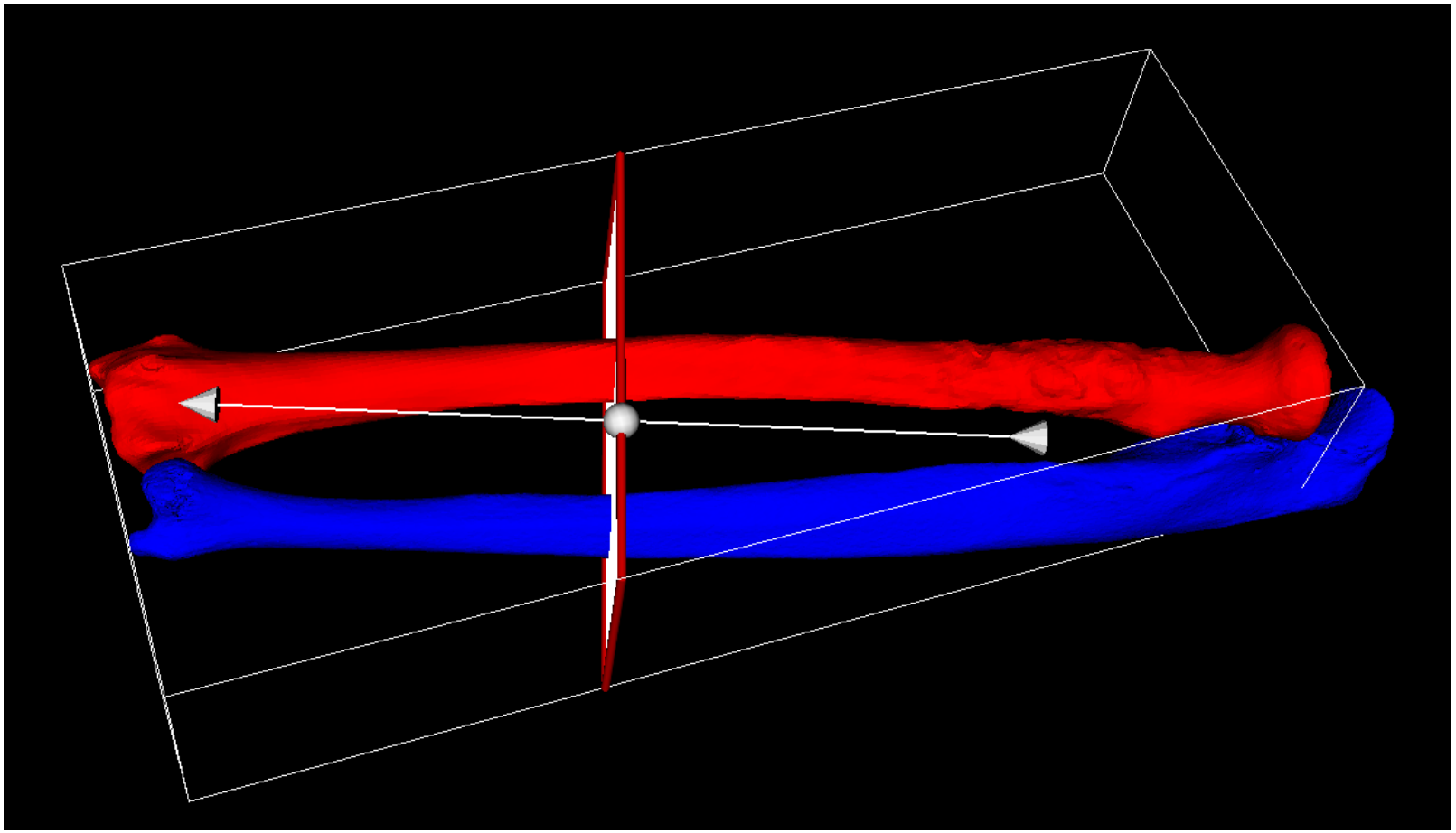
forearm; proximal radius resection; fibula

5. Beispiel für das modellierte Fibula-Köpfchen



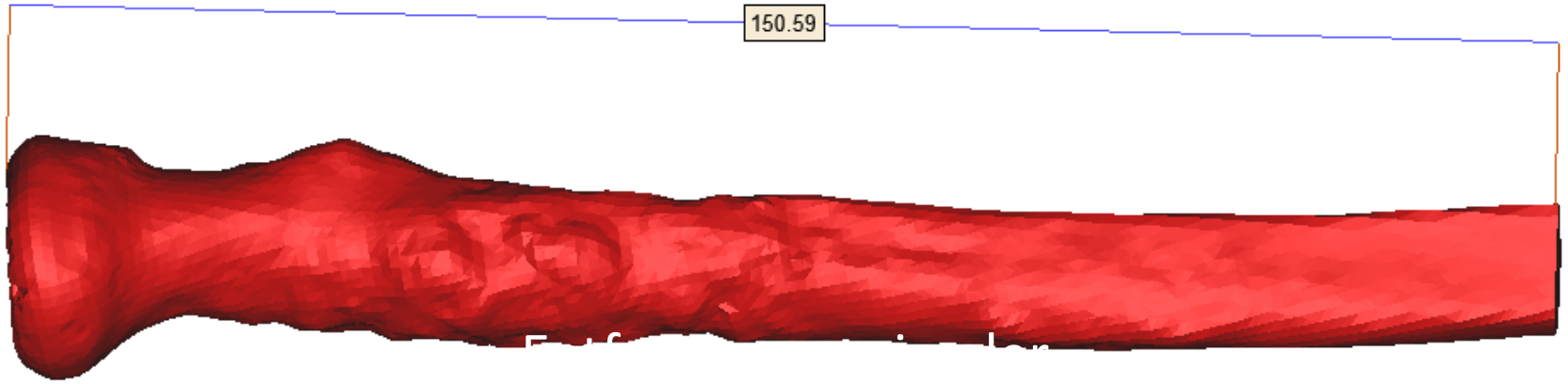
forearm; proximal radius resection; fibula

6. Distale Schaft-Osteotomie Radius/Fibula (Schnittebene 3)



forearm; proximal radius resection; fibula

6. Distale Schaft-Osteotomie Radius/Fibula (Schnittebene 3)



forearm; proximal radius resection; fibula

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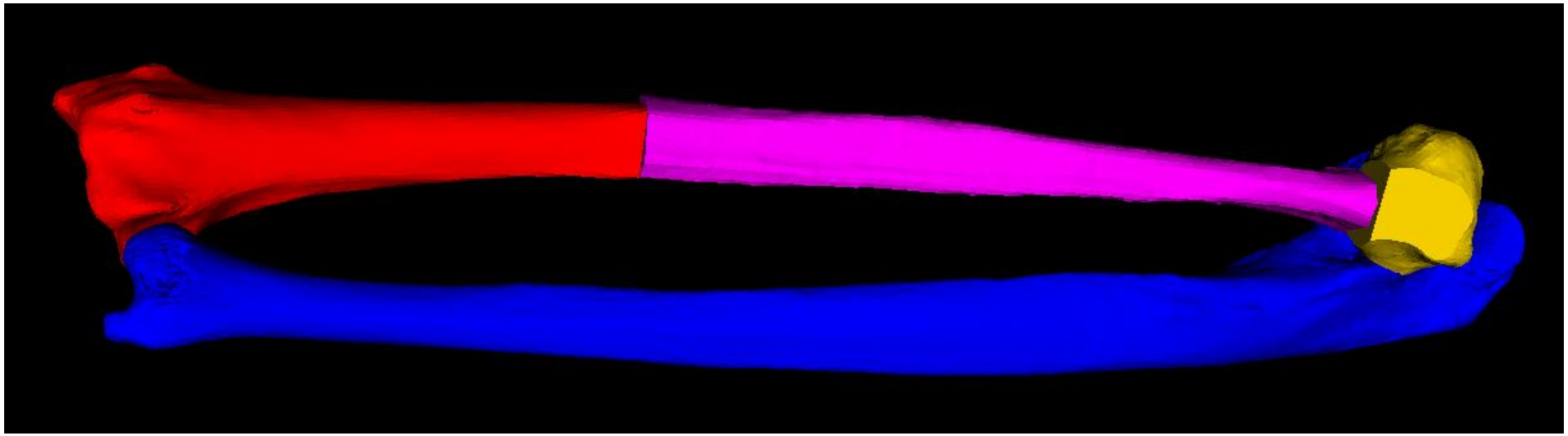
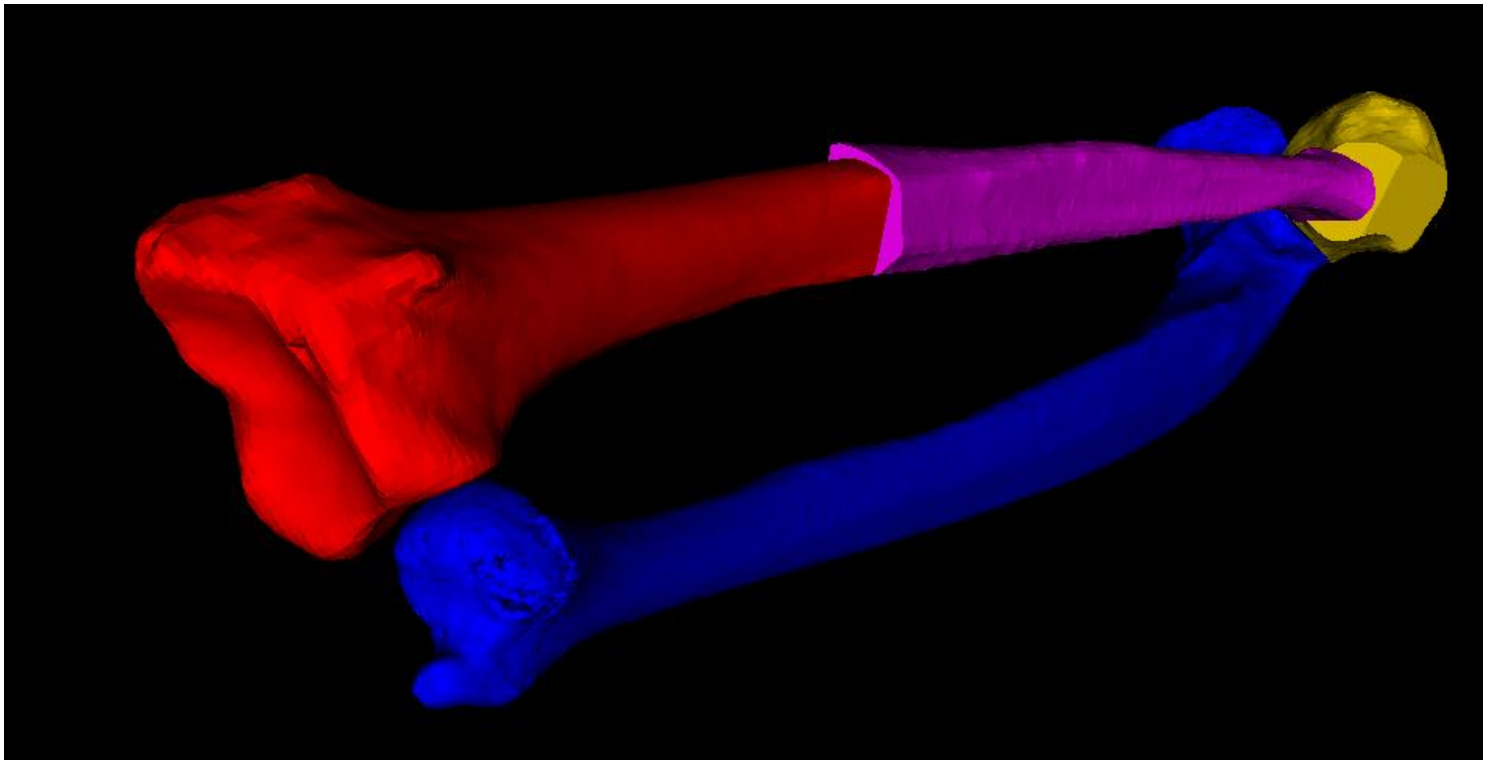


forearm; proximal radius resection; fibula

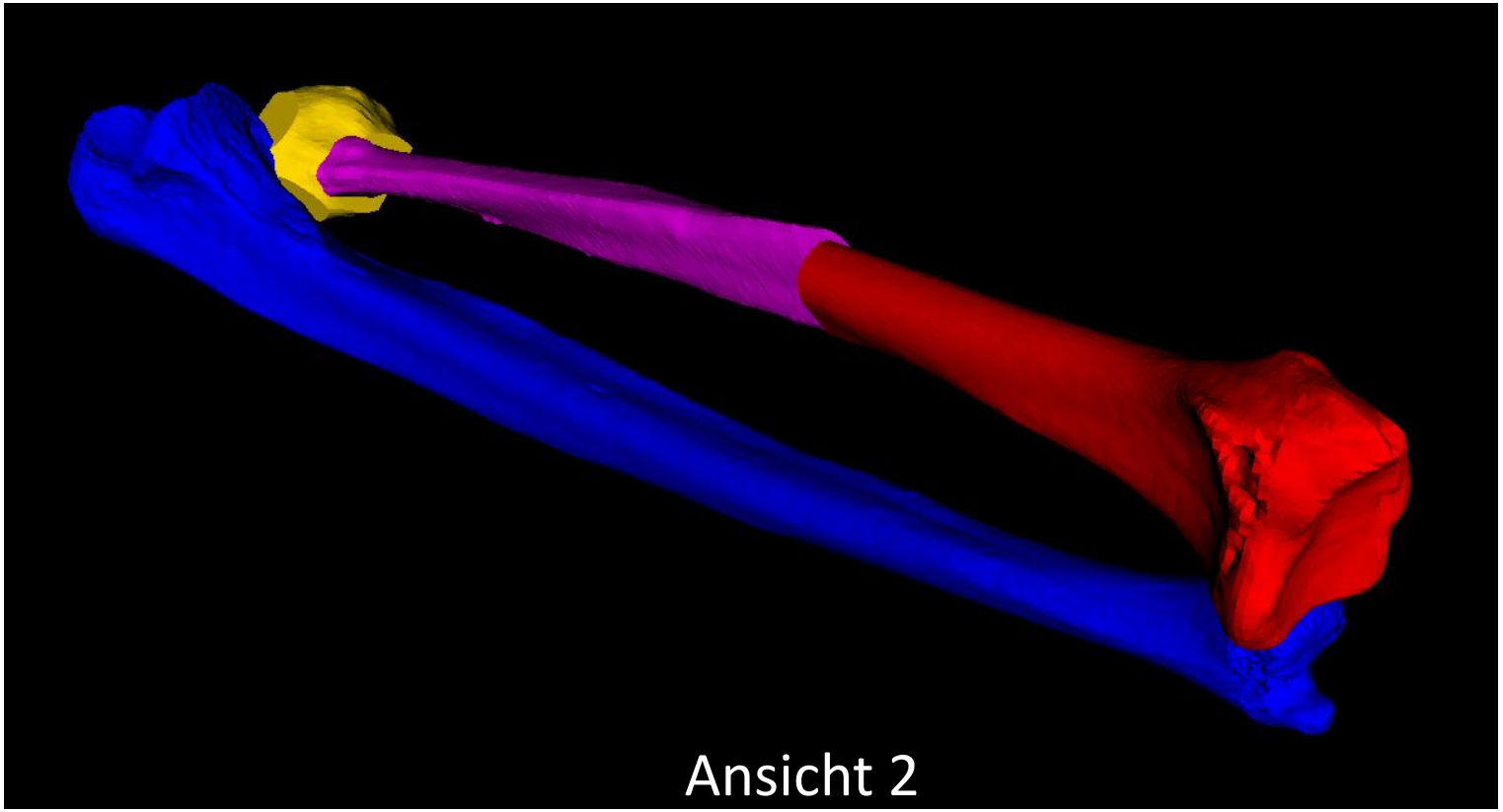
7. «Postoperatives» Ergebnis



SarcOmaSurgery

forearm; proximal radius resection; fibula

7. «Postoperatives» Ergebnis

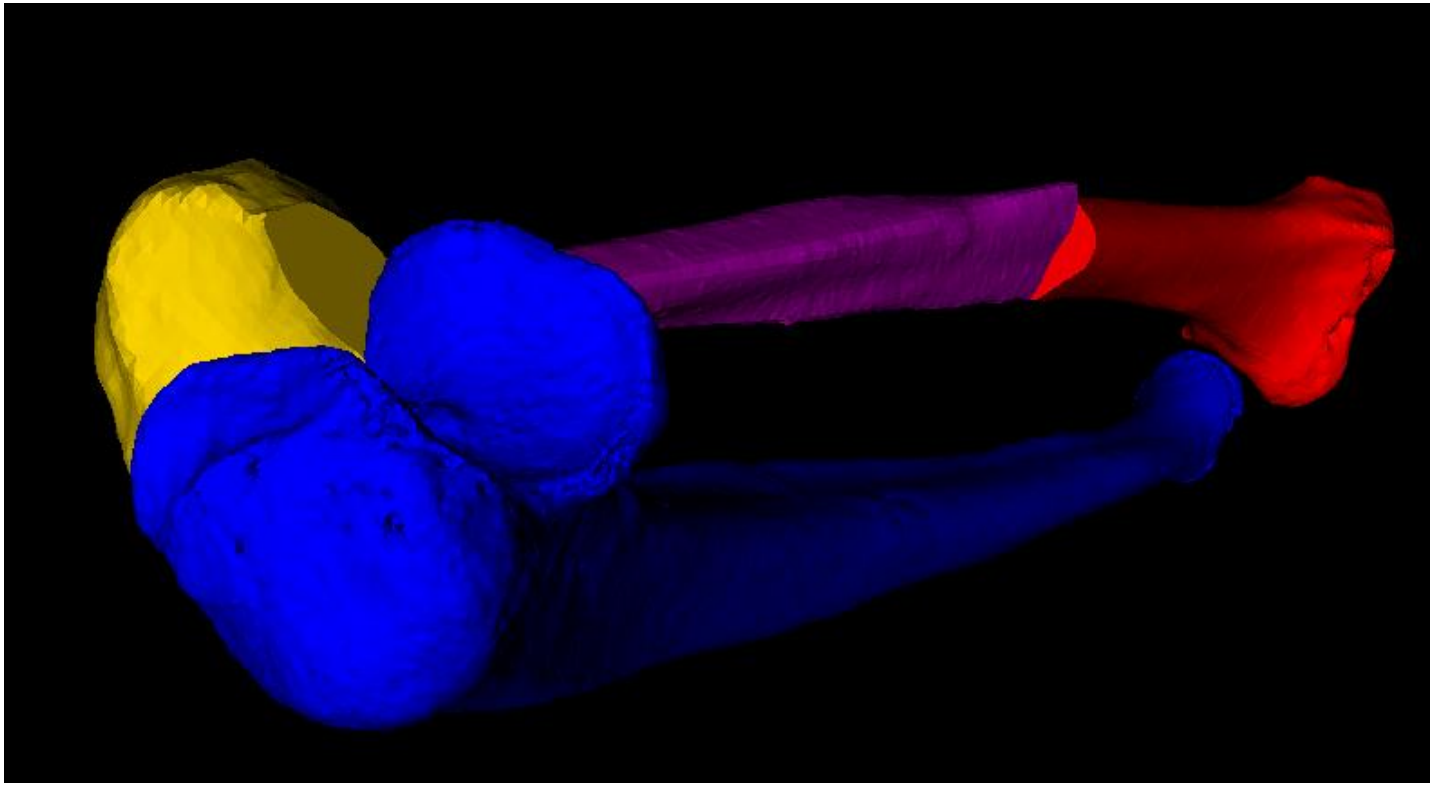


Ansicht 2

SarcOmaSurgery

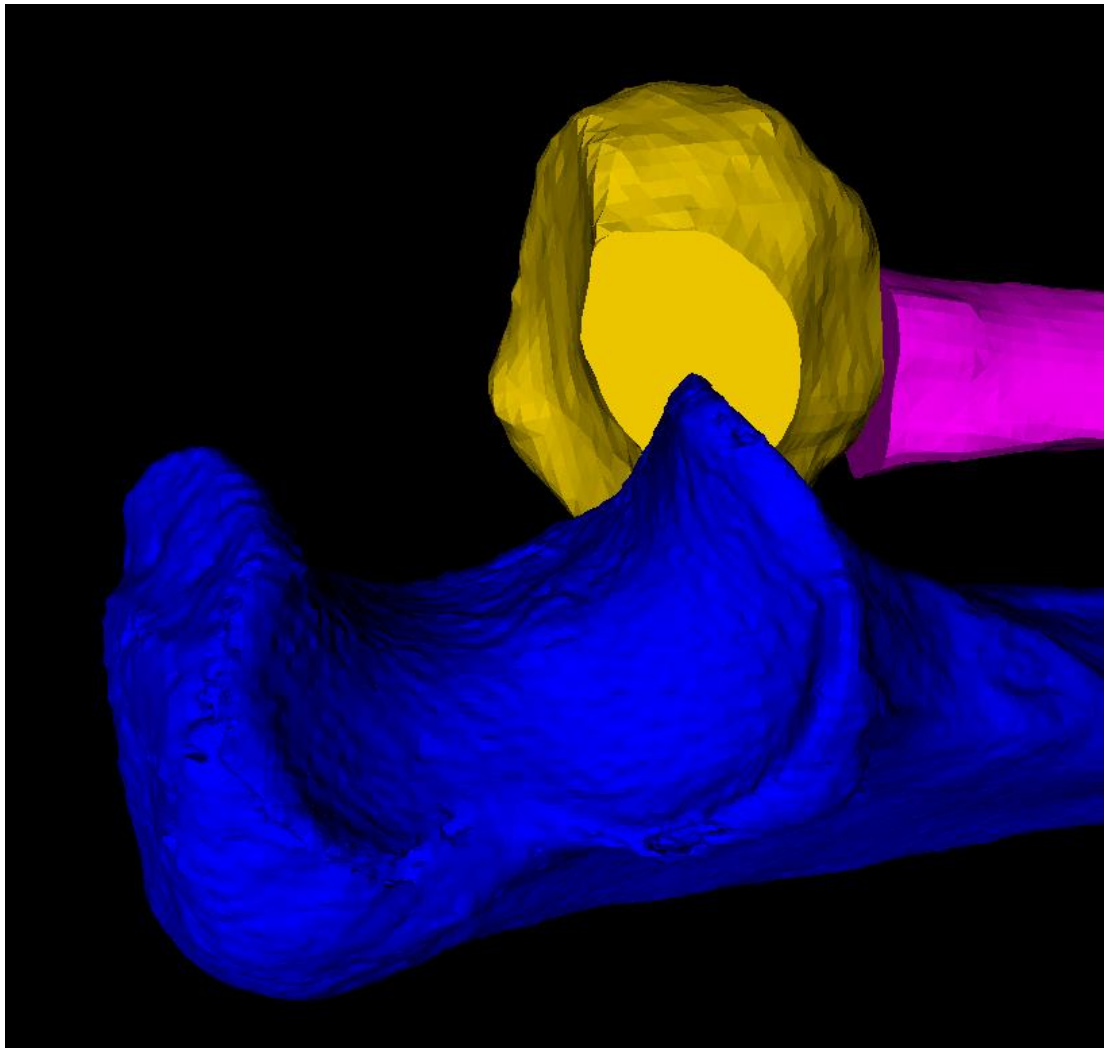
forearm; proximal radius resection; fibula

7. «Postoperatives» Ergebnis



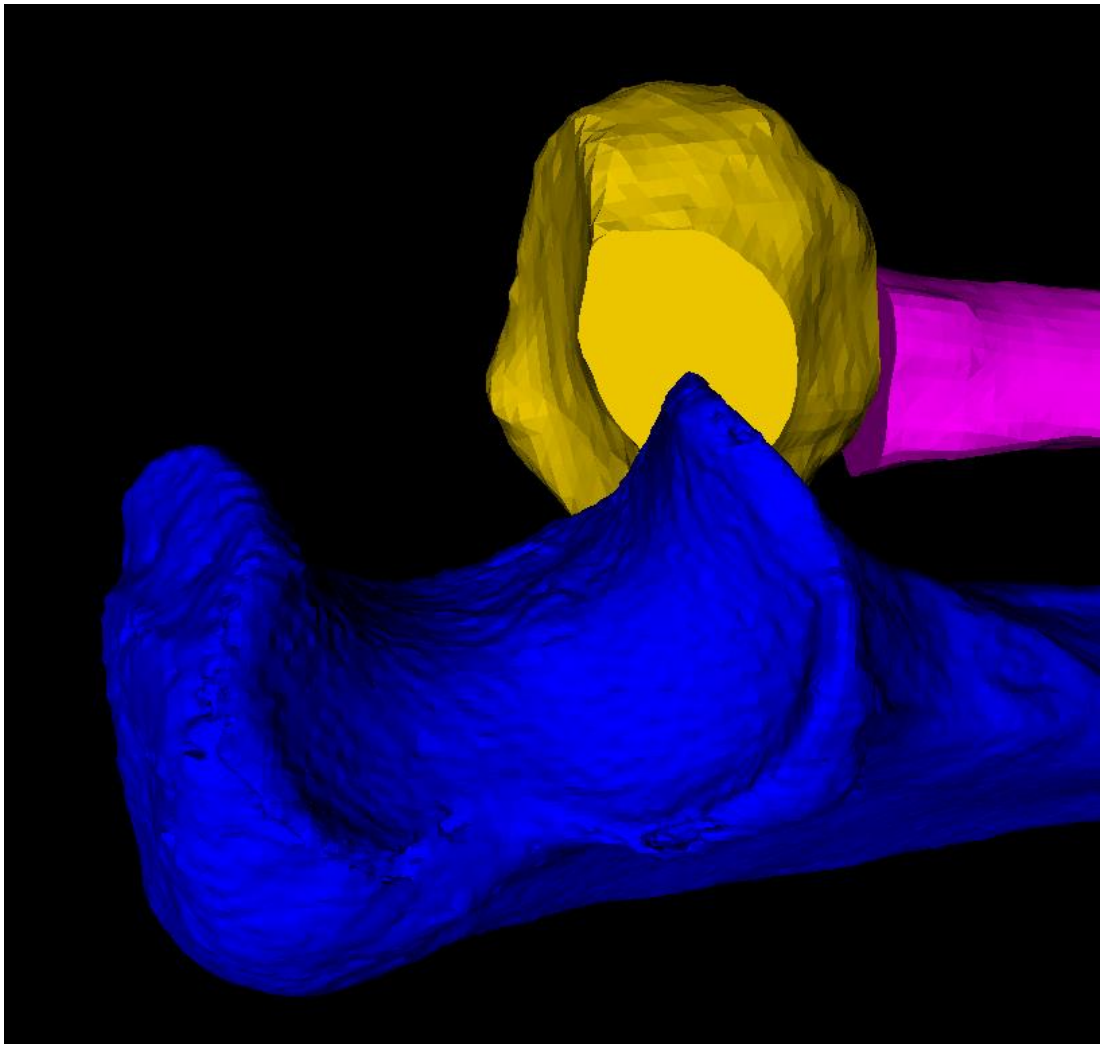
forearm; proximal radius resection; fibula

7. «Postoperatives» Ergebnis



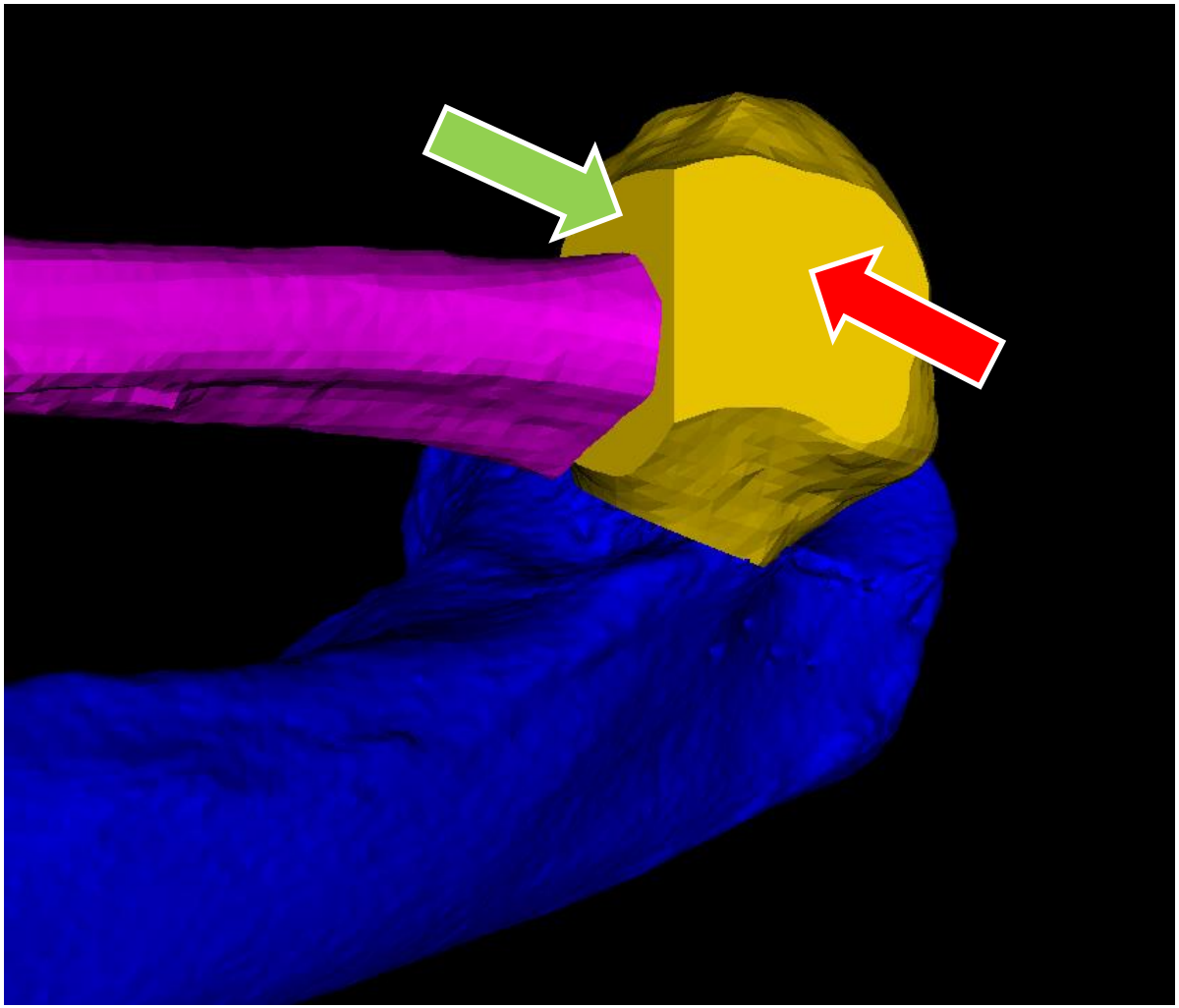
forearm; proximal radius resection; fibula

7. «Postoperatives» Ergebnis



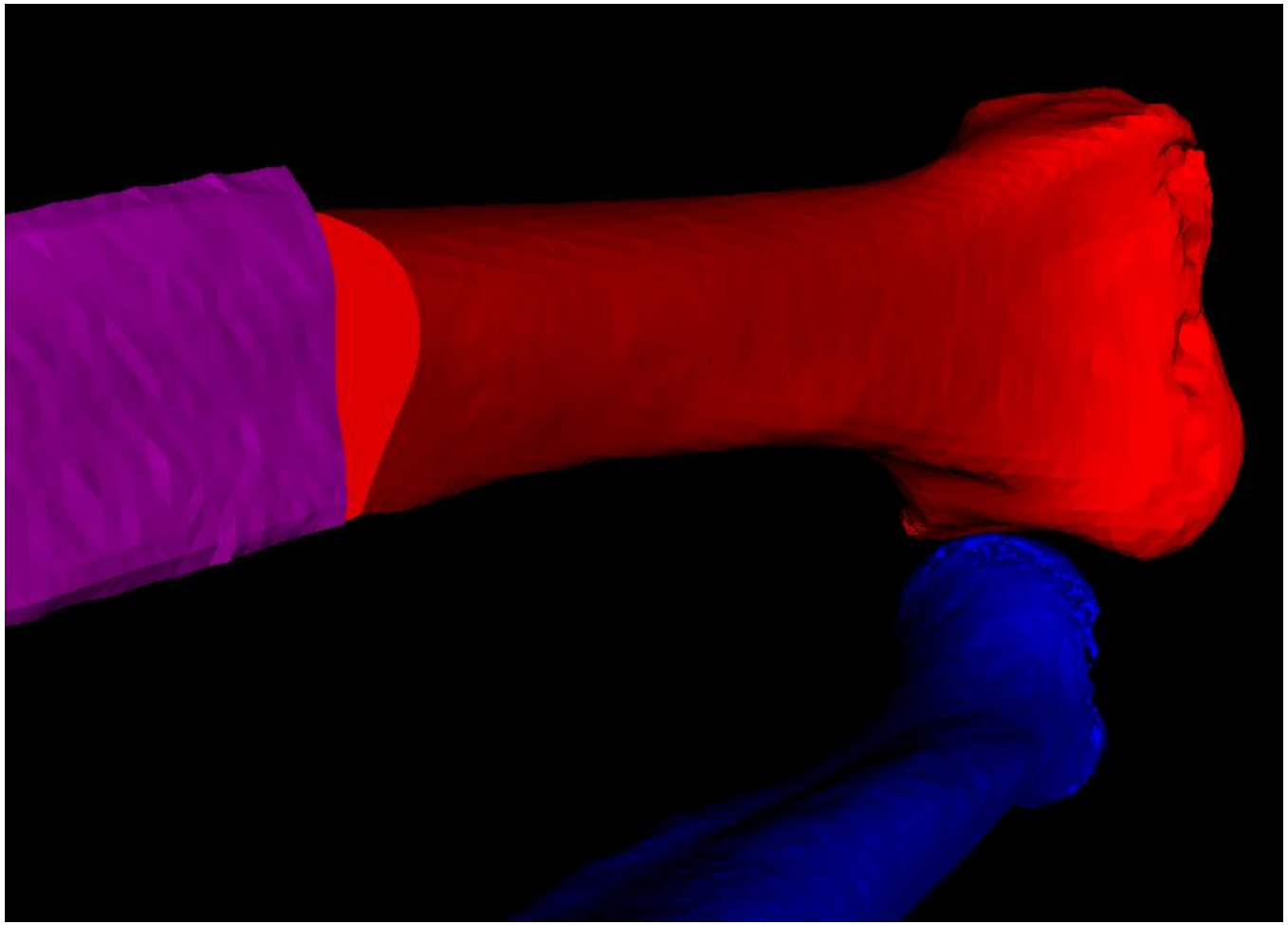
forearm; proximal radius resection; fibula

7. «Postoperatives» Ergebnis



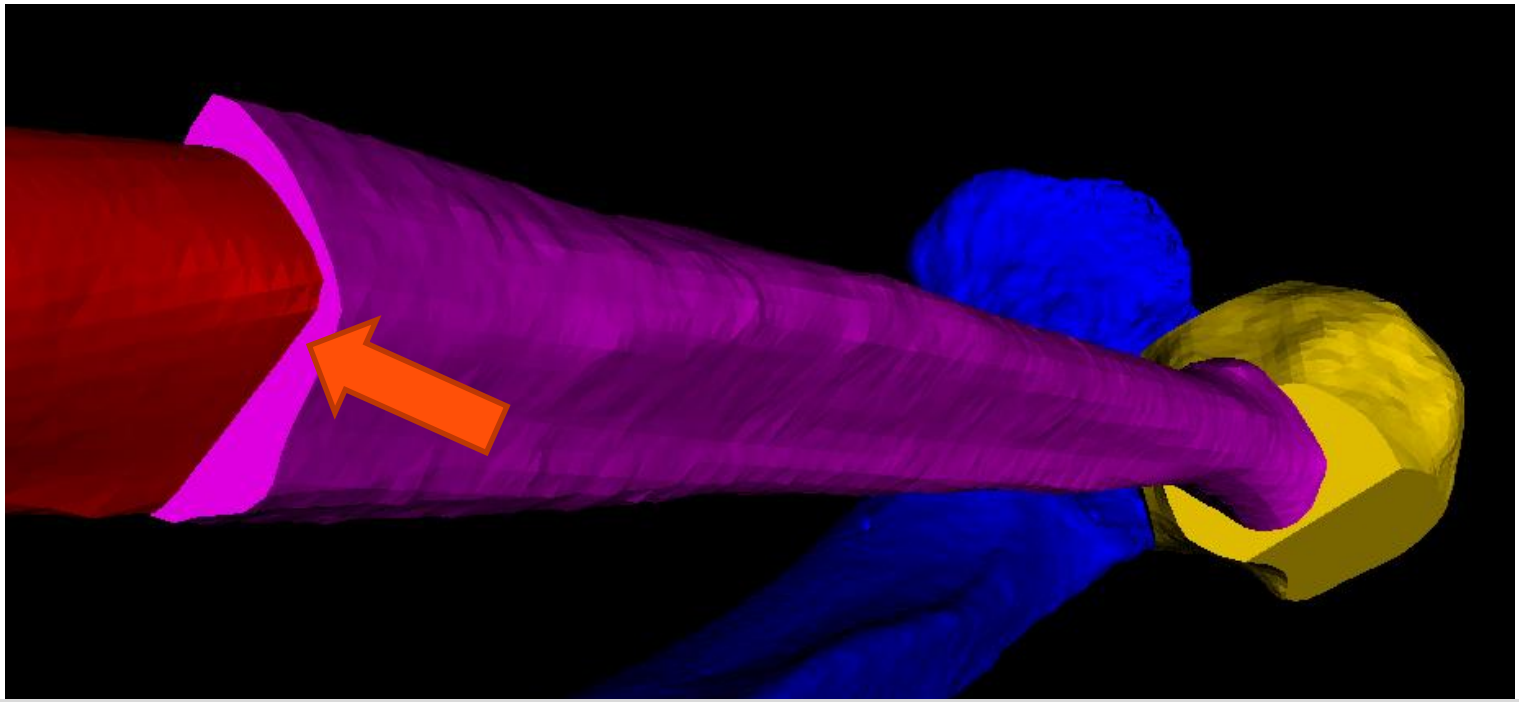
forearm; proximal radius resection; fibula

7. «Postoperatives» Ergebnis



forearm; proximal radius resection; fibula

7. «Postoperatives» Ergebnis

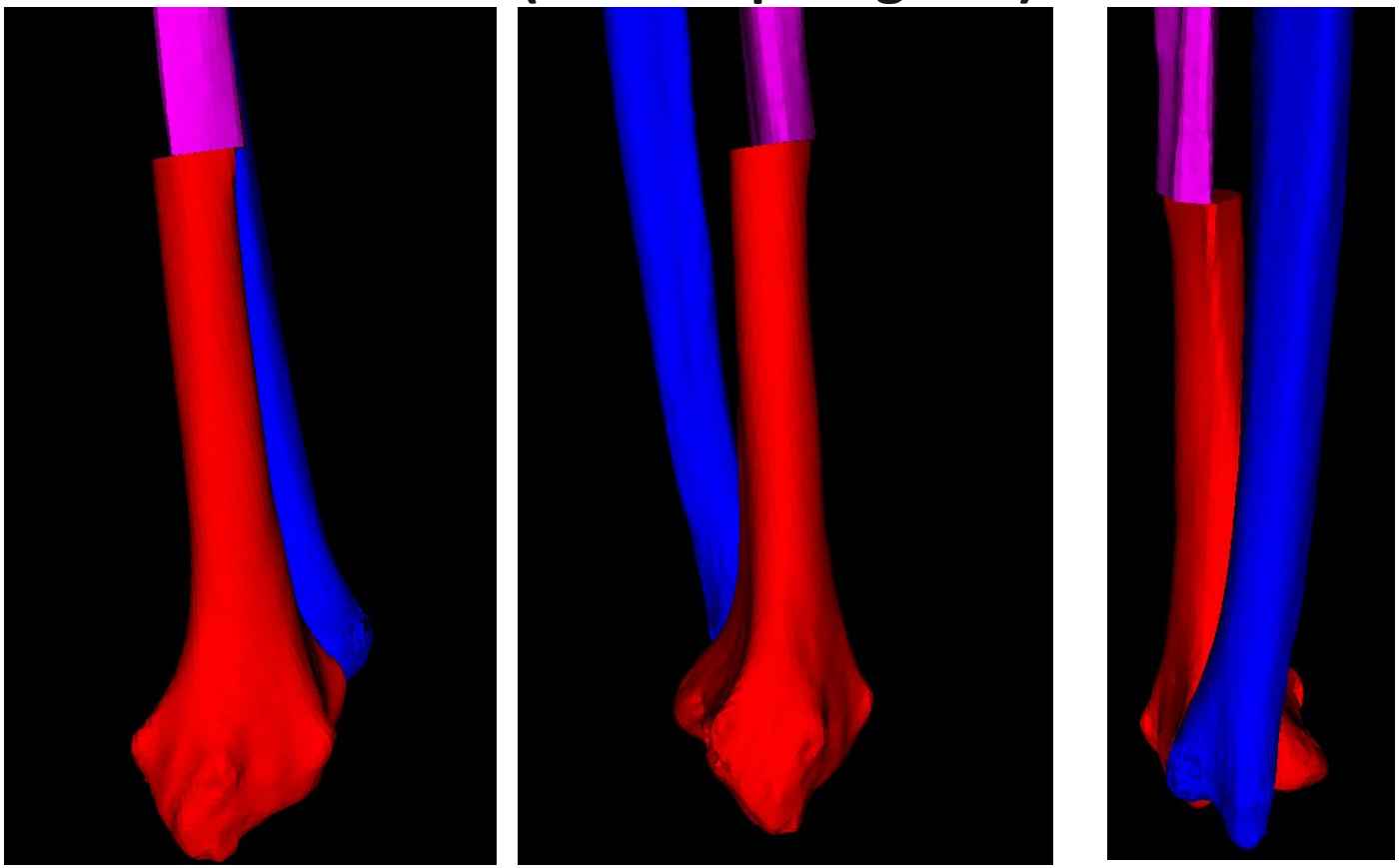


Ansicht 7, distal: Man könnte hier den distalen Radius auch mehr mit dem Rand der Fibula alignieren, um eine Platte verwenden zu können. Man würde dann aber mehr von der ursprünglichen Radius-Form abweichen.

forearm; proximal radius resection; fibula

Distale Guides

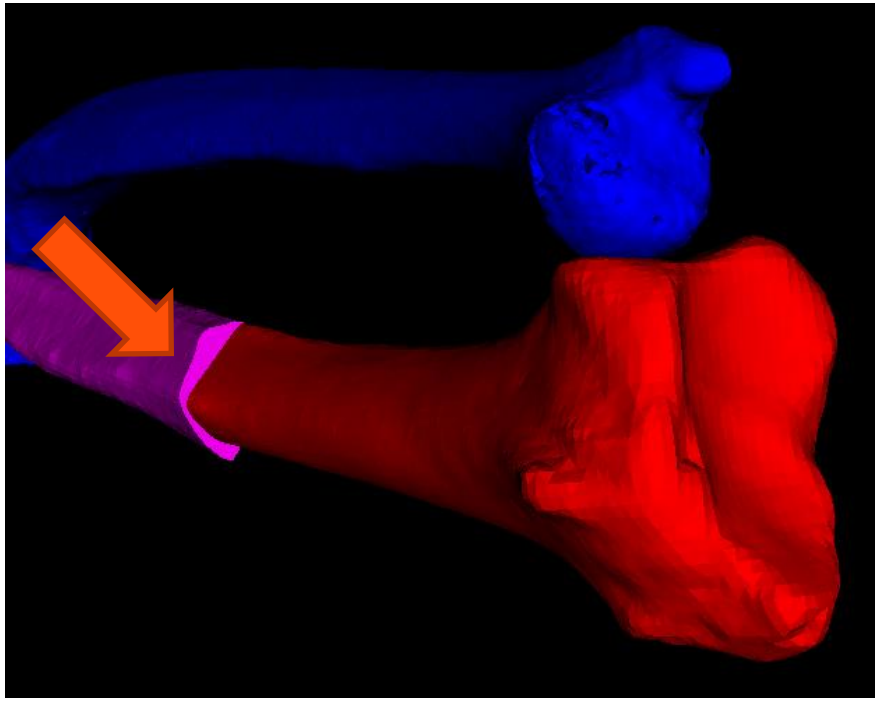
Soweit distal ist die Form von Fibula und Radius nicht mehr so ähnlich (Kalibersprung etc.)

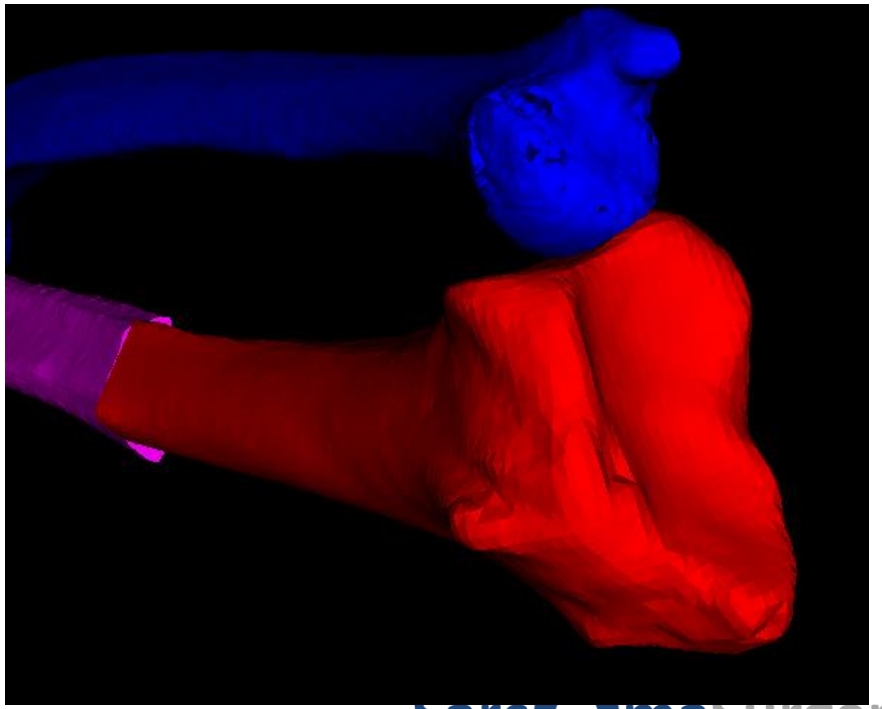


forearm; proximal radius resection; fibula

Distale Guides

Man könnte hier den distalen Radius an der Seite wo sowohl Fibula als auch Radius relativ Planar sind (siehe Pfeil) auch mehr mit dem Rand der Fibula alignieren (Bild rechts), um eine nicht gebogene, vorgefertigte Platte (Synthes) mit winkelstabilen Schraublöchern zu verwenden. Man würde dann aber mehr von der ursprünglichen Radius-Form abweichen.

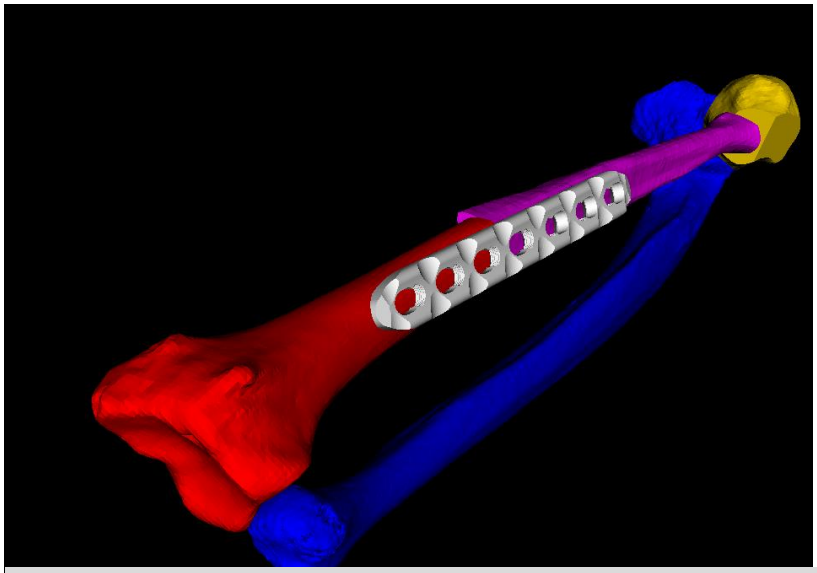


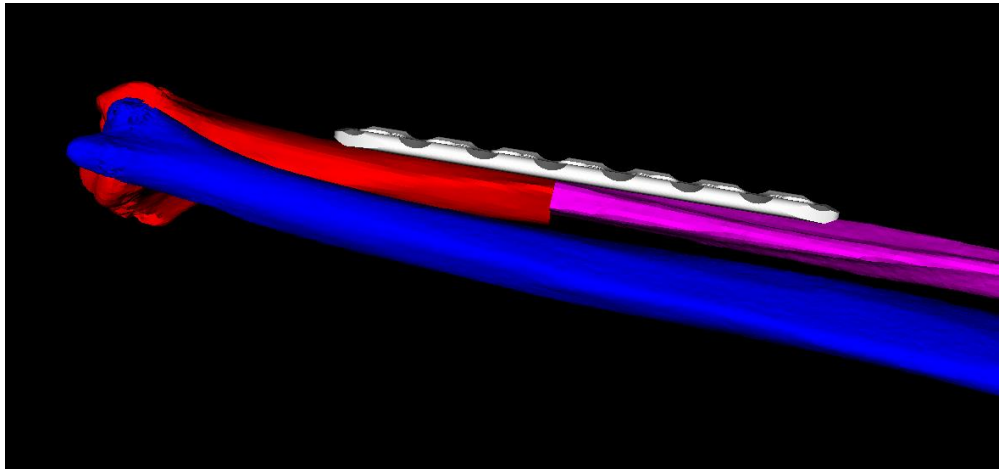


forearm; proximal radius resection; fibula

Distale Guides

Wenn man so eine Platte verwenden könnte (Variante A), kann man die Bohrlöcher für die Platte direkt in den Guide integrieren (da winkelstabil) und man könnte die Platte danach einfach festschrauben. Hier muss also die Position der Platte definiert werden.





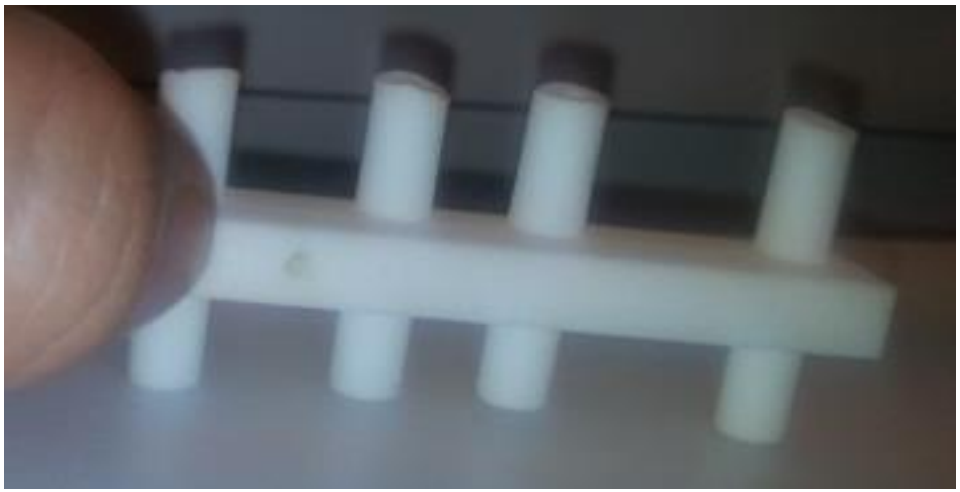
Synthes Platte 423.571, falls Verwendung möglich.

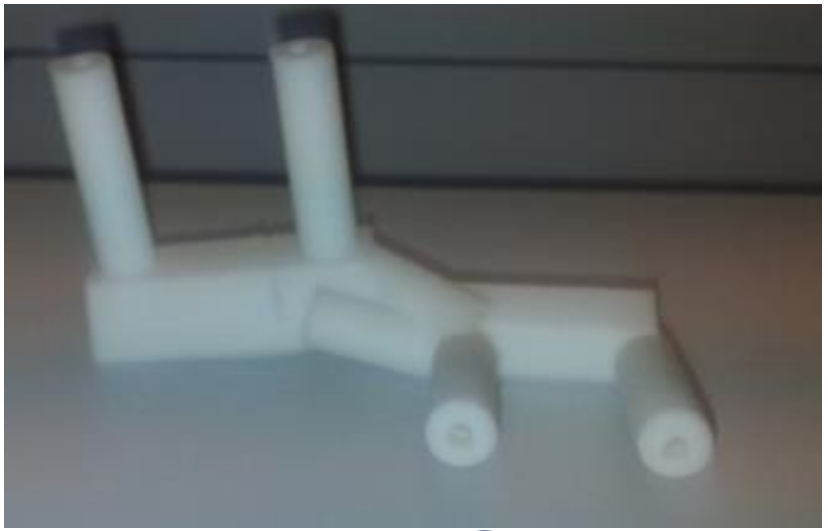
forearm; proximal radius resection; fibula

Distale Guides

Ansonsten (Variante B) bräuchte es eine «Orientierungs-Hilfe» mit Bohr-Guides für Kirschner-Drähte (je 2 auf einer Seite der Osteotomie). Da man preoperativ in 3-d das Endergebnis simuliert hat, baut man einen Guide wo die Kirschner-Drähte in allen Ebenen parallel zueinander stehen (Bild links). Virtuell kann man dann die Position der Bohr-Hilfen am ursprünglichen (deformierten) Knochen berechnen (Bild rechts).

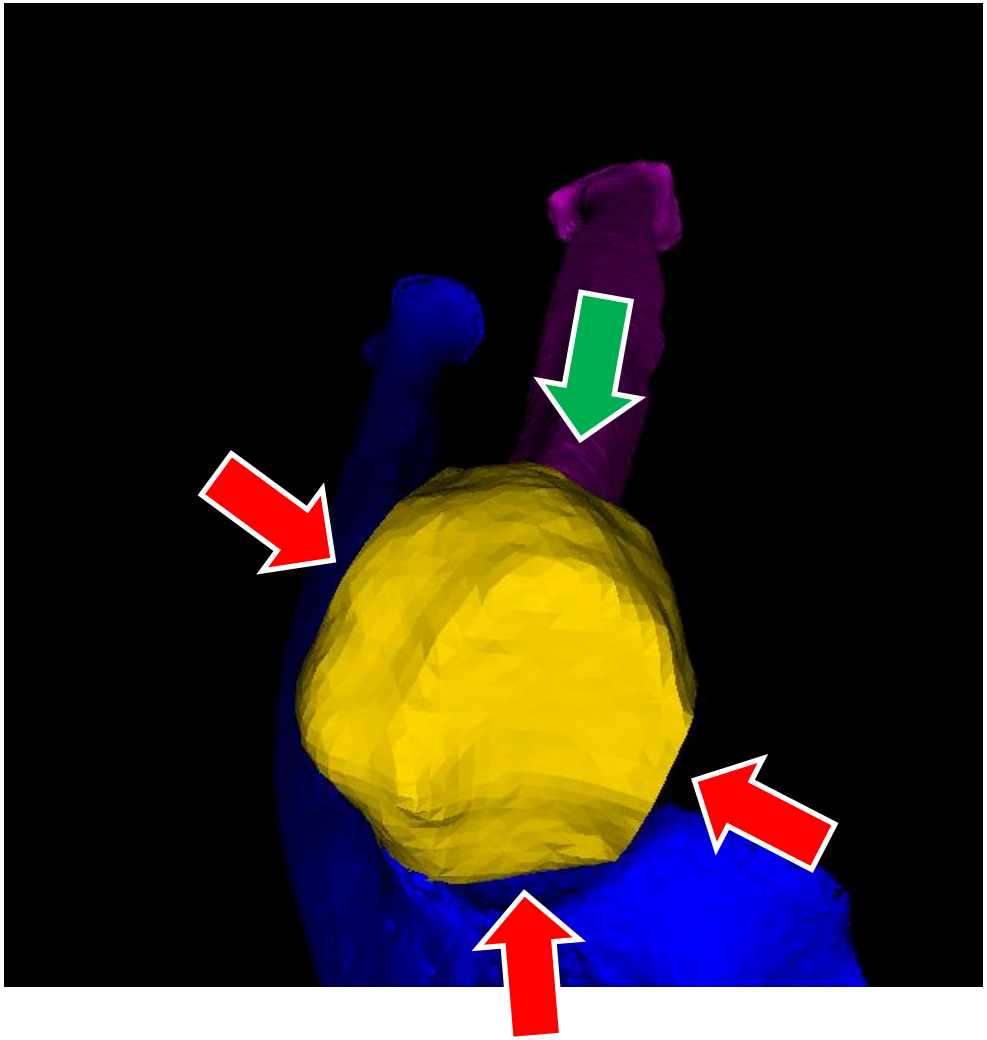
Während der OP geht man dann umgekehrt vor: Vor der Osteotomie wird der Guide (Bild rechts) am Knochen platziert und die Kirschner-Drähte werden in den Knochen gebohrt. Danach entfernt man den Guide (die Drähte bleiben) und führt die Osteotomie durch. Nach der Osteotomie nimmt man den anderen Guide (Bild links) und steckt ihn auf die Kirschner-Drähte. Dadurch werden die Knochen-Teile automatisch richtig aligniert. Während der Guide noch am Knochen sitzt, fixiert man die Teile mit einer Platte an einer anderen Stelle. D.h. es muss die Position der Guides und der Platten festgelegt werden.





forearm; proximal radius resection; fibula

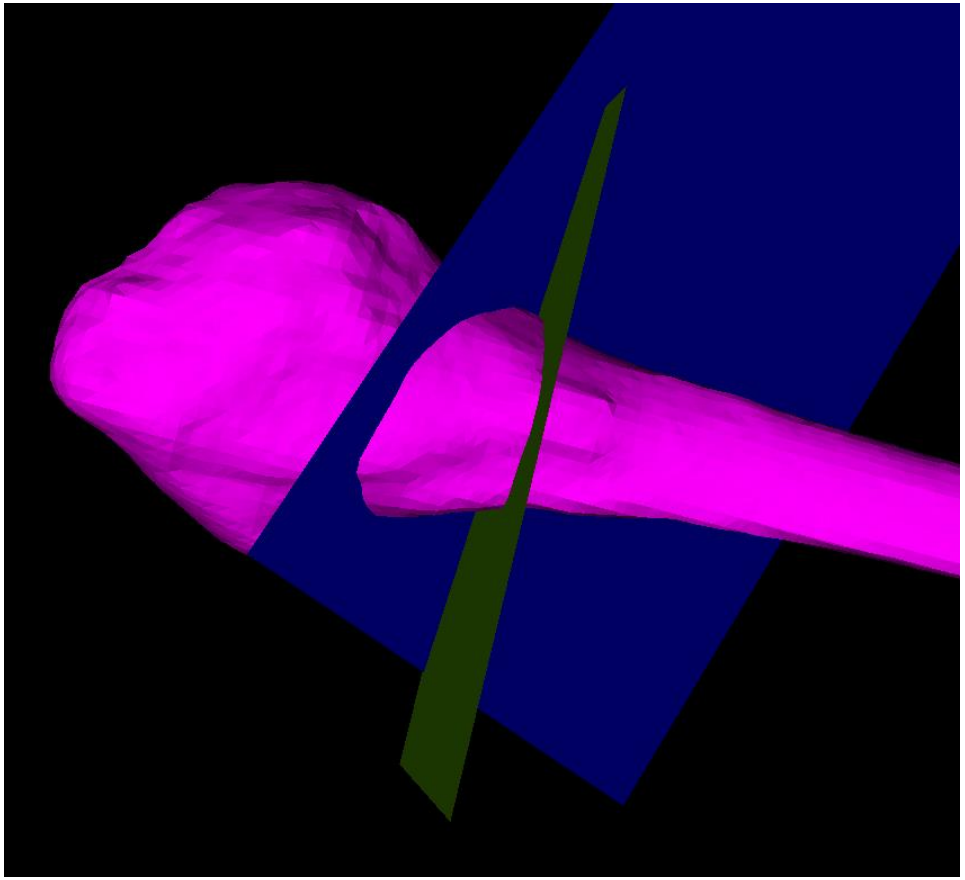
Proximale Guides

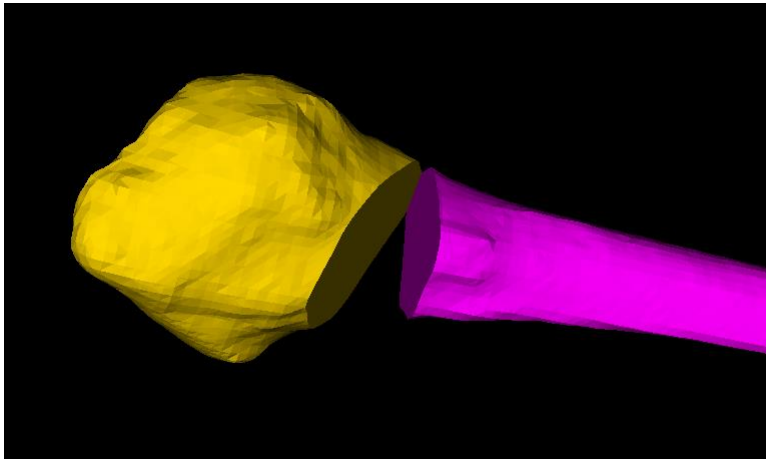


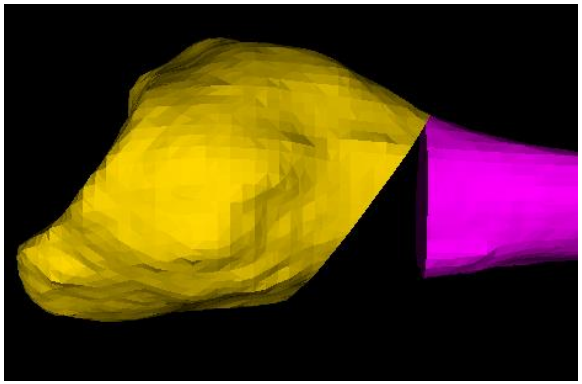
Da 3 Seiten (Pfeil rot) des Fibula-Köpfchens (gelb) stark modelliert werden müssen und man die genaue Modellierung preoperativ noch nicht kennt, bleibt nur eine Seite (Pfeil grün) wo man Guides anbringen könnte.

forearm; proximal radius resection; fibula

Proximale Guides



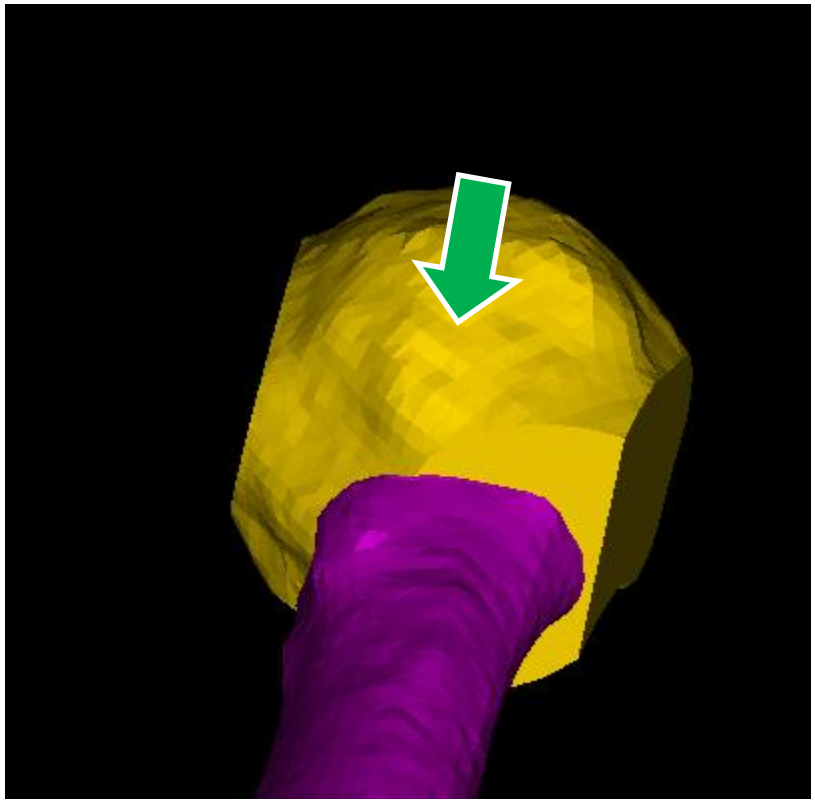




Durch Schnittebene 1 (Schritt 1/2) und durch Rückführung der Schnittebene 2 des alignierten Radius (Schritt 4) in seine usprüngliche Orientierung (Schaft von Schritt 3 auf Schaft von Schritt 1 aligniert) ergeben sich die Osteotomie-Ebenen, die später für Schnitt-Guides verwendet werden.

forearm; proximal radius resection; fibula

Proximale Guides



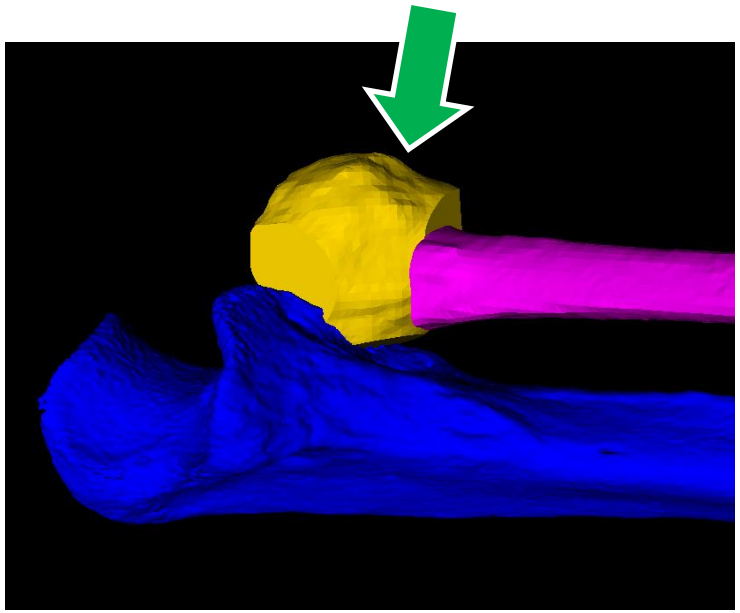
Aus einem anderem Blickwinkel sieht man, dass es nur eine grössere Fläche gibt (grüner Pfeil), die nicht modelliert werden muss oder die nicht dem Osteotomie-Schnitt entspricht.

Daher sollte der Schnitt-Guide an dieser Seite platziert werden.

Wie im distalen Fall Variante A kann man denke ich an dieser Stelle keine gerade Platte anbringen.

forearm; proximal radius resection; fibula

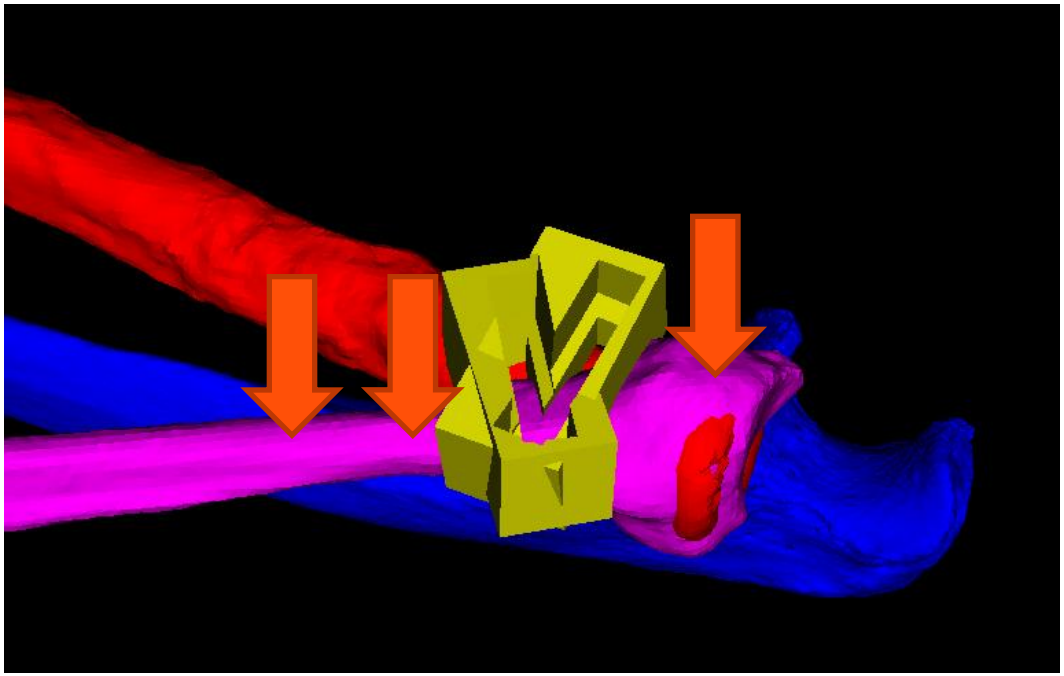
Proximale Guides



Bei Variante B (wie distal), wird ein Orientierungs-Guide mit Kirschner-Drähten beim grünen Pfeil angebracht. Im Köpfchen (gelb) und am Schaft(violett) bräuchte es mindestens jeweils einen Draht, der von Beginn (Durchtrennung, Modellierung Köpfchen, ...) bis zur Fixierung des modellierten Köpfchens am Schaft vorhanden sein muss. Das würde aber auch heissen, dass man die Fixierung des Köpfchens an einer anderen Position

forearm; proximal radius resection; fibula

Proximale Guides

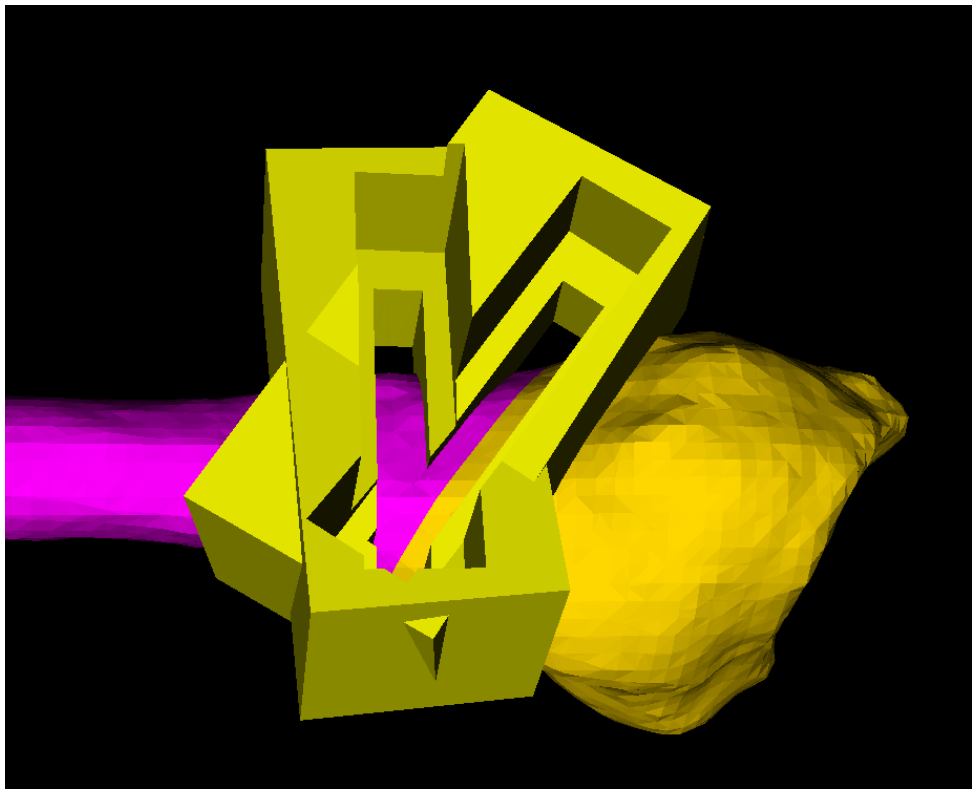


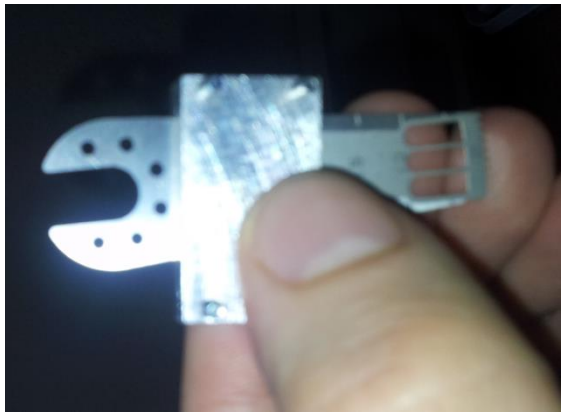
Geht man von Variante B aus, kann man den Schnittblock berechnen, der an der ursprünglichen Fibula an zuvor beschriebener Seite positioniert wird (Bild links). Radius und Ulna dienen hier lediglich der Orientierung.

Zum Alignieren würden Kirschner-Drähte verwendet werden (Pfeile), die wie zuvor beschrieben mittels Guides fixiert werden und bis zum Ende nicht entfernt werden können. Es ist auch möglich einen Guide für Schnitte und Bohrungen für die Kirschner-Drähte zu entwerfen.

forearm; proximal radius resection; fibula

Proximale Guides





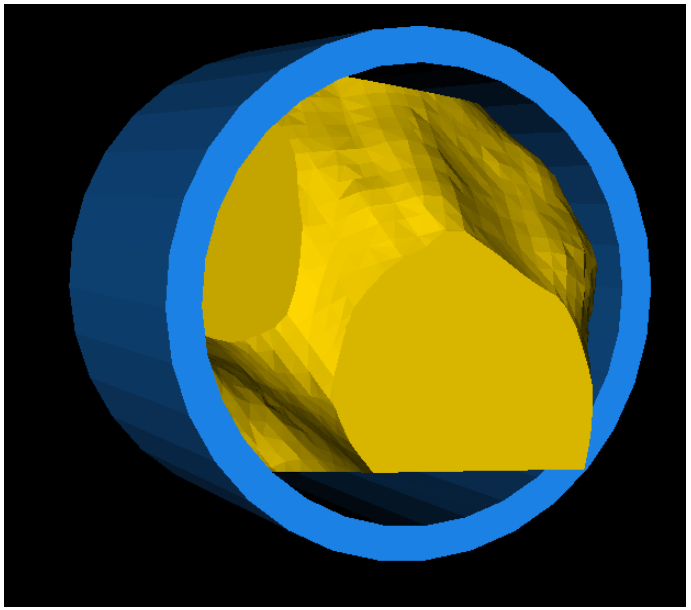
Wenn die Kirschner-Drähte die ursprüngliche Orientierung definiert haben, wird der Knochen durchtrennt (Modellierung vor oder nach dem Durchtrennen?). Der Schnitt-Guide (Bild links) definiert die richtige Position und Neigung

Position der Platte

SarcOmaSurgery

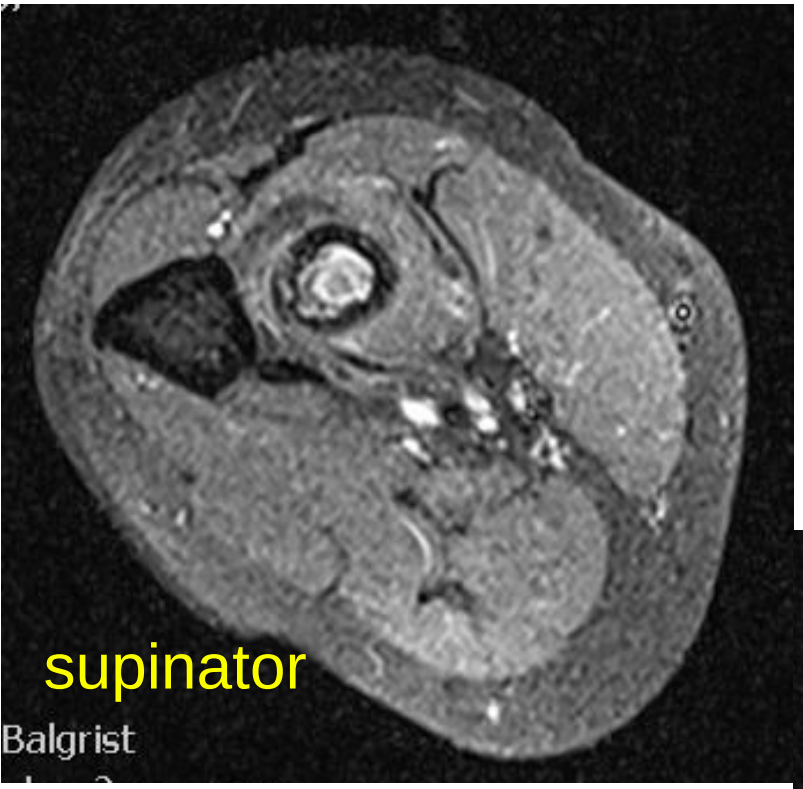
forearm; proximal radius resection; fibula

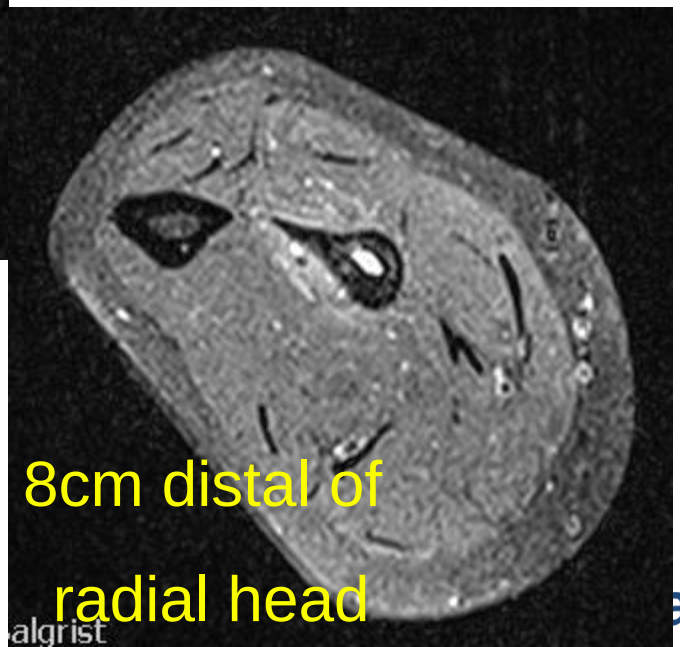
Proximale Guides



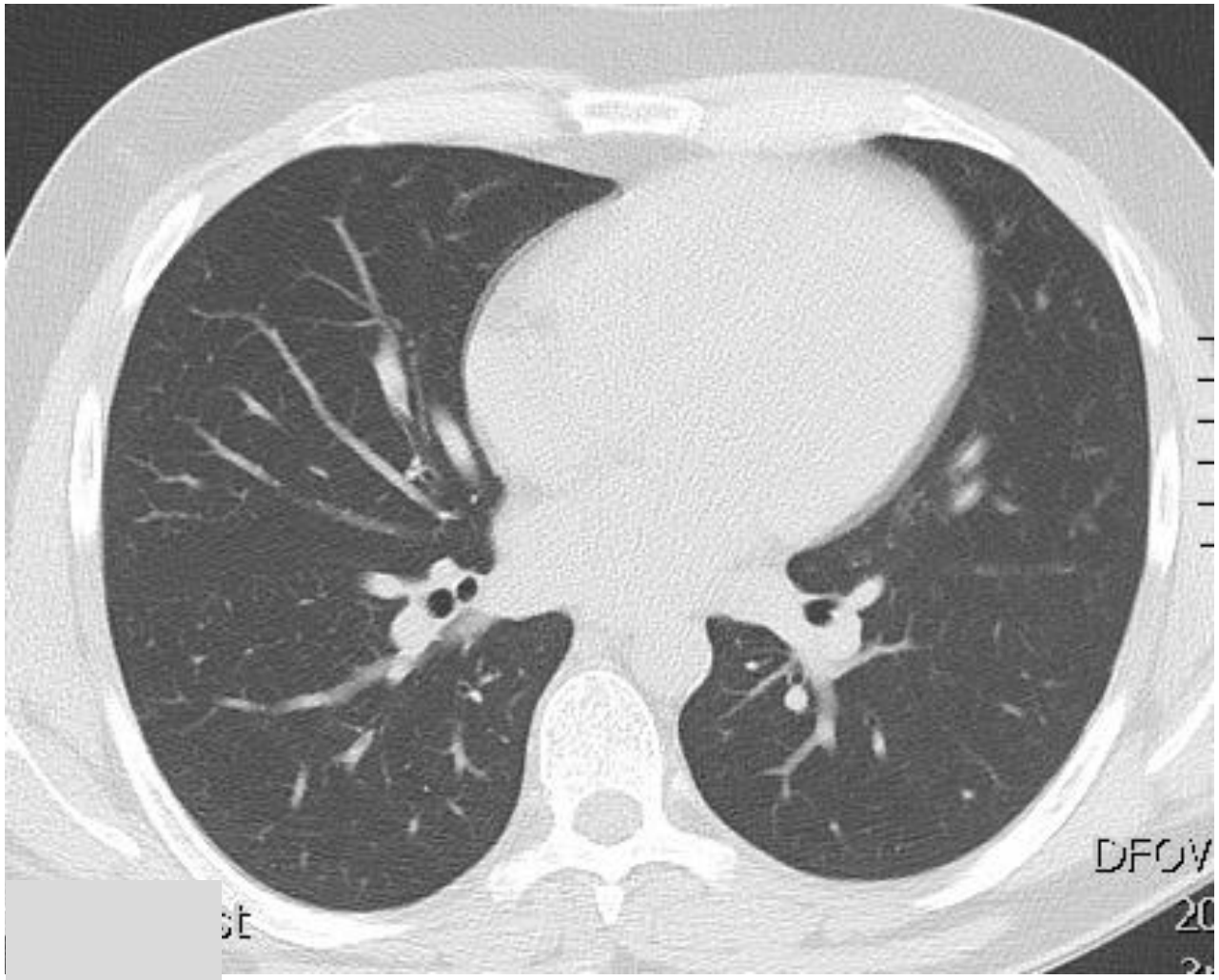
Für die Modellierung wird vorgeschlagen einen 3-d Print eines holen Zylinders zu verwenden, der genau das selbe Innenmass hat wie das ursprüngliche Radiusköpfchen. Dieses kann dann als Hilfe für die Modellierung verwendet werden. Unklar ist mir noch, ob die Modellierung vor oder nach der Durchtrennung stattfindet – dies ist relevant weil entsprechend befindet sich der Kirschner

forearm; proximal radius resection; fibula preop MRI August 22, 2012





forearm; proximal radius resection; fibula
Chest CT August 22, 2012



forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012

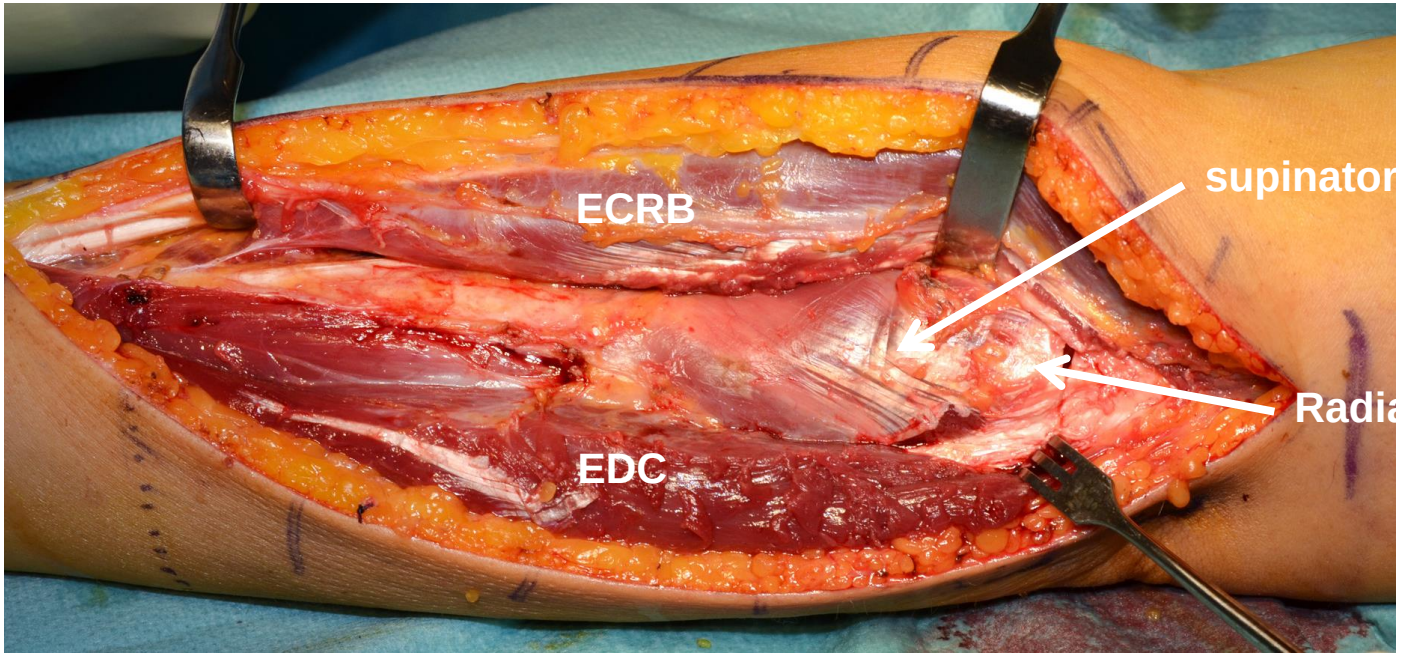
Initially planned for August 28:

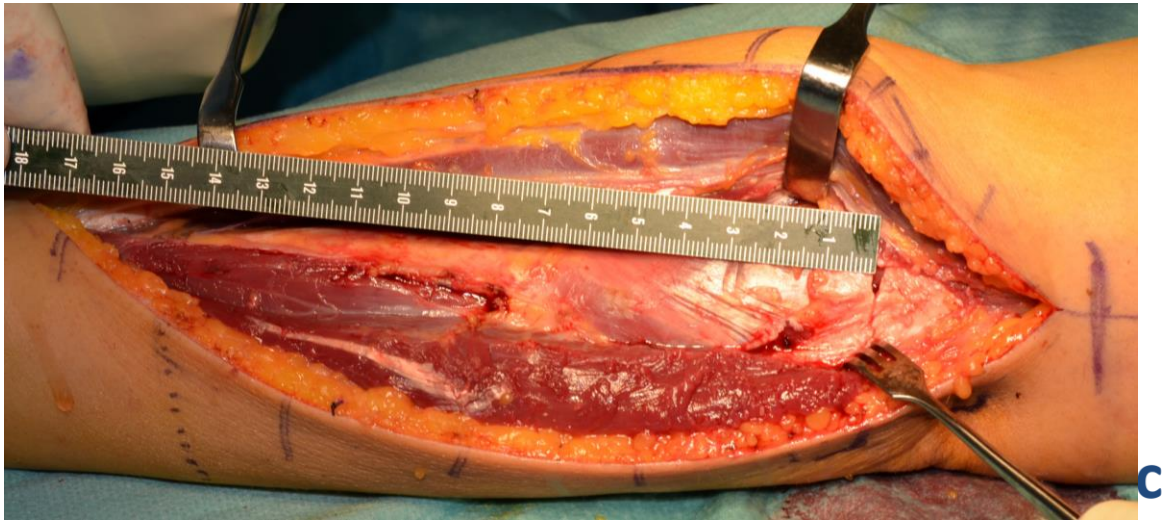
Lc 200 (!!!)

Surgery postponed for 1 more week

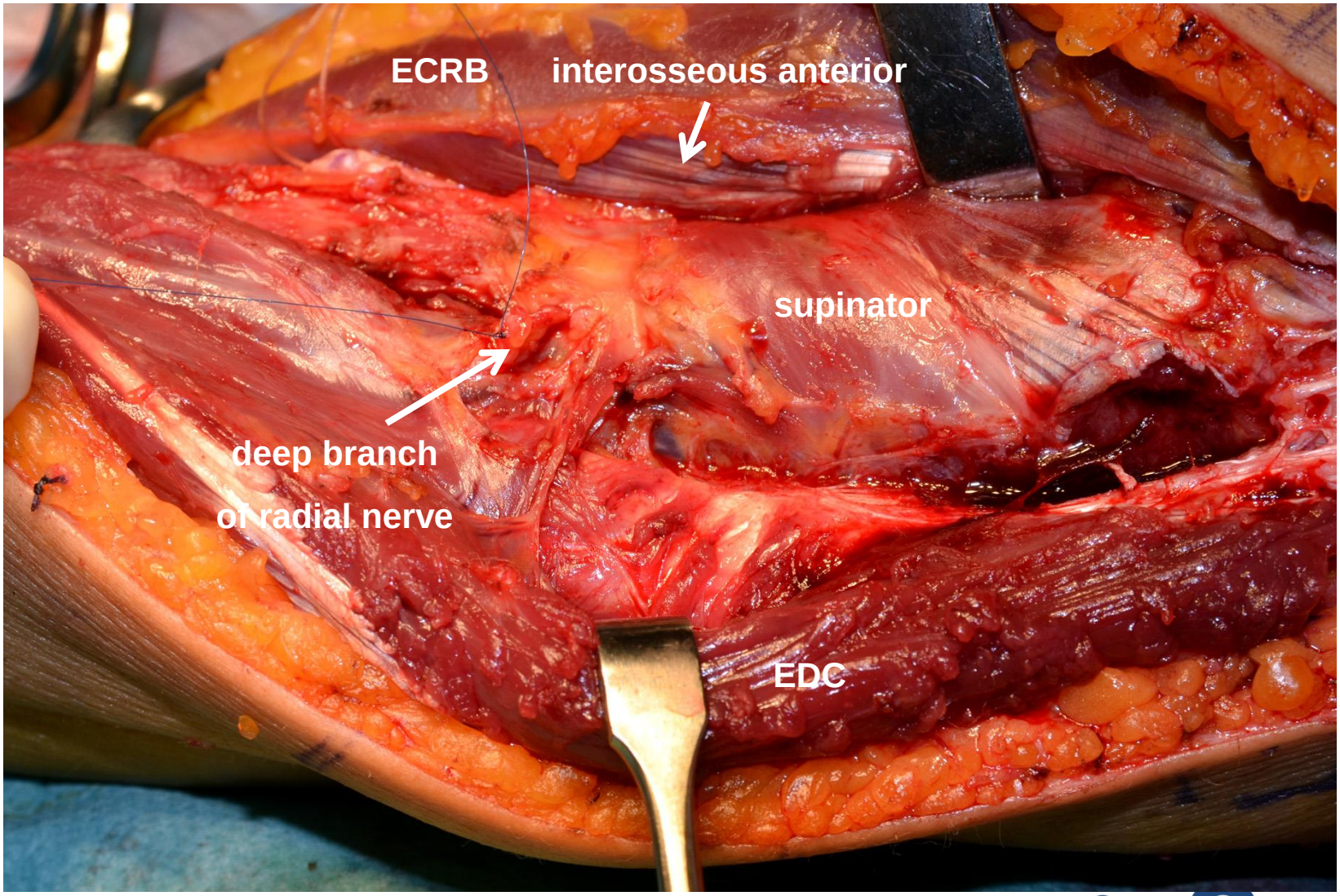
forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012

forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012

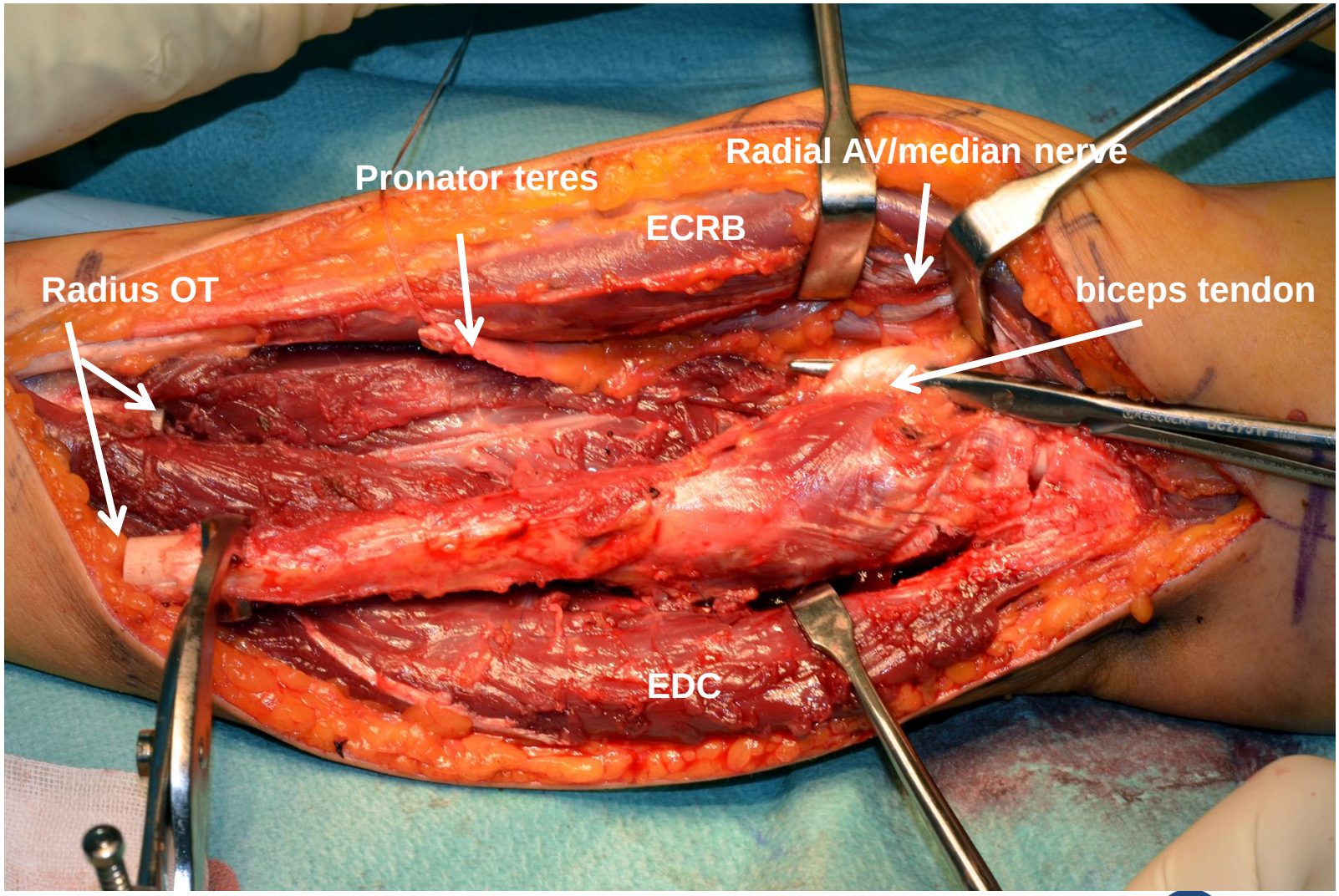




forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012



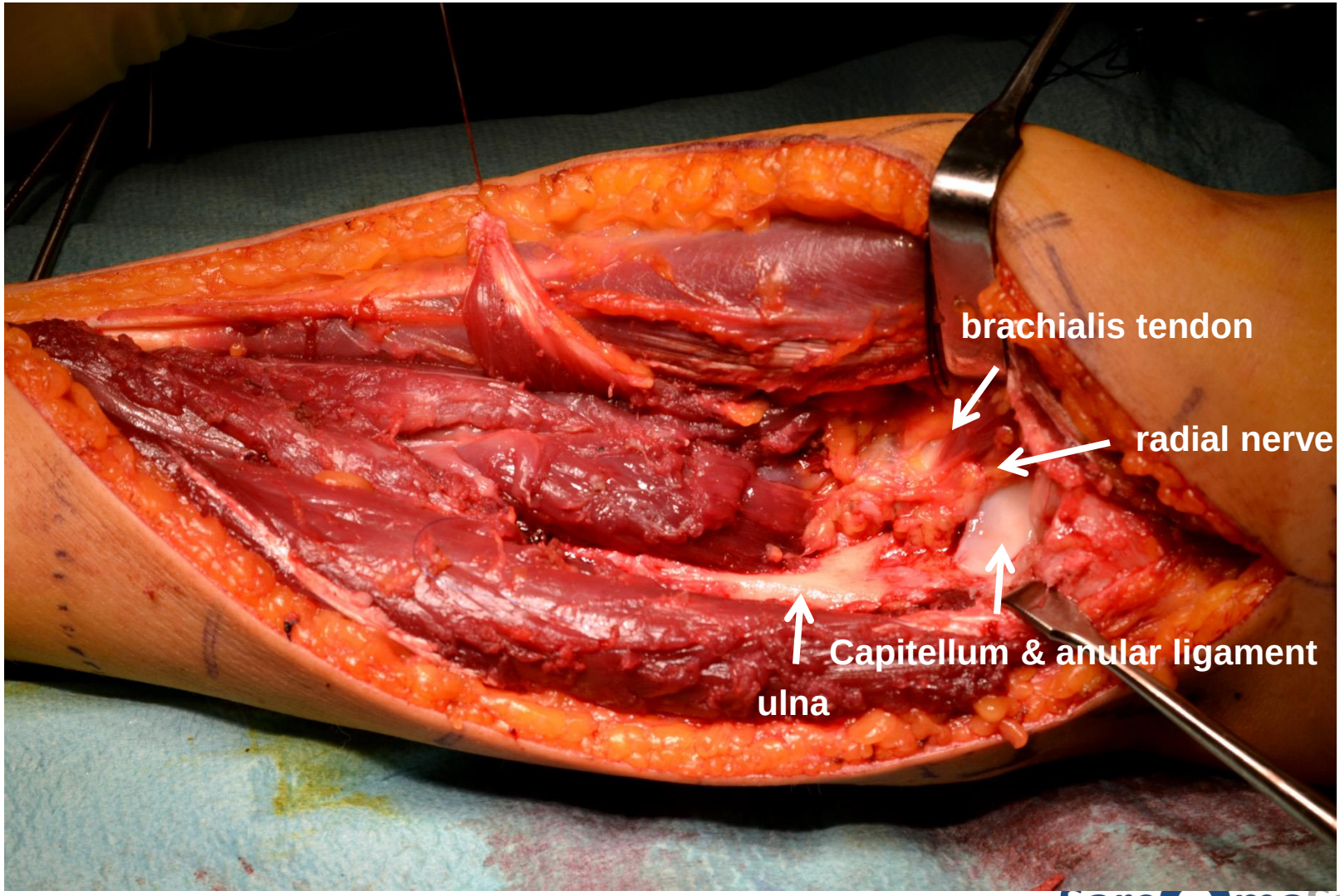
forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012



forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

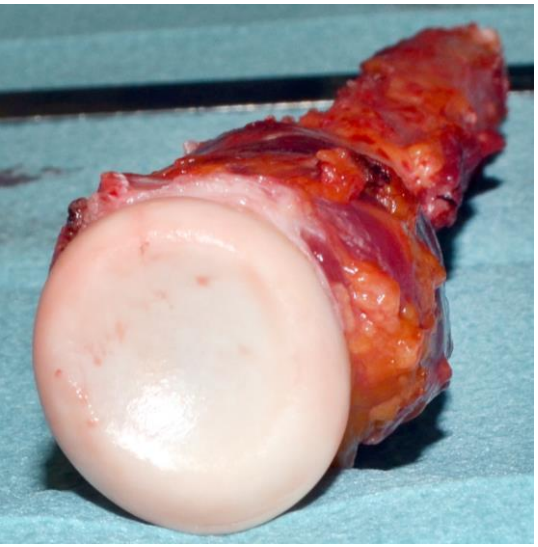
Surgery: Sept. 5, 2012



forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

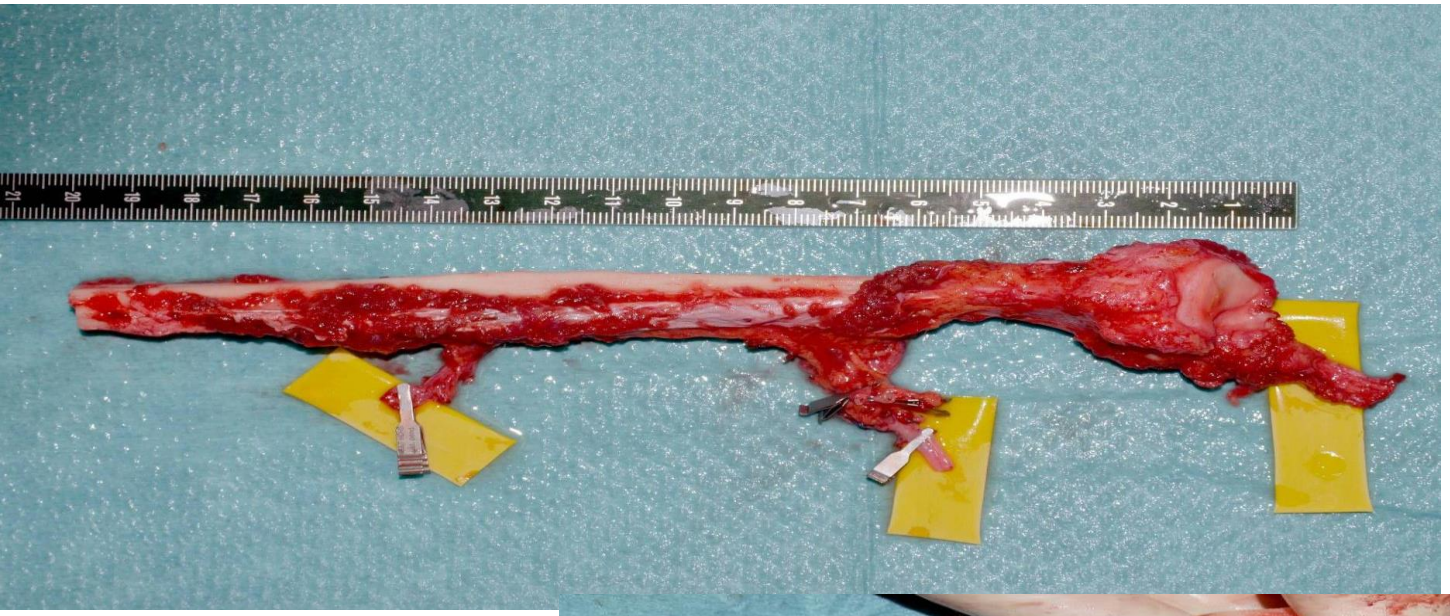
Surgery: Sept. 5, 2012

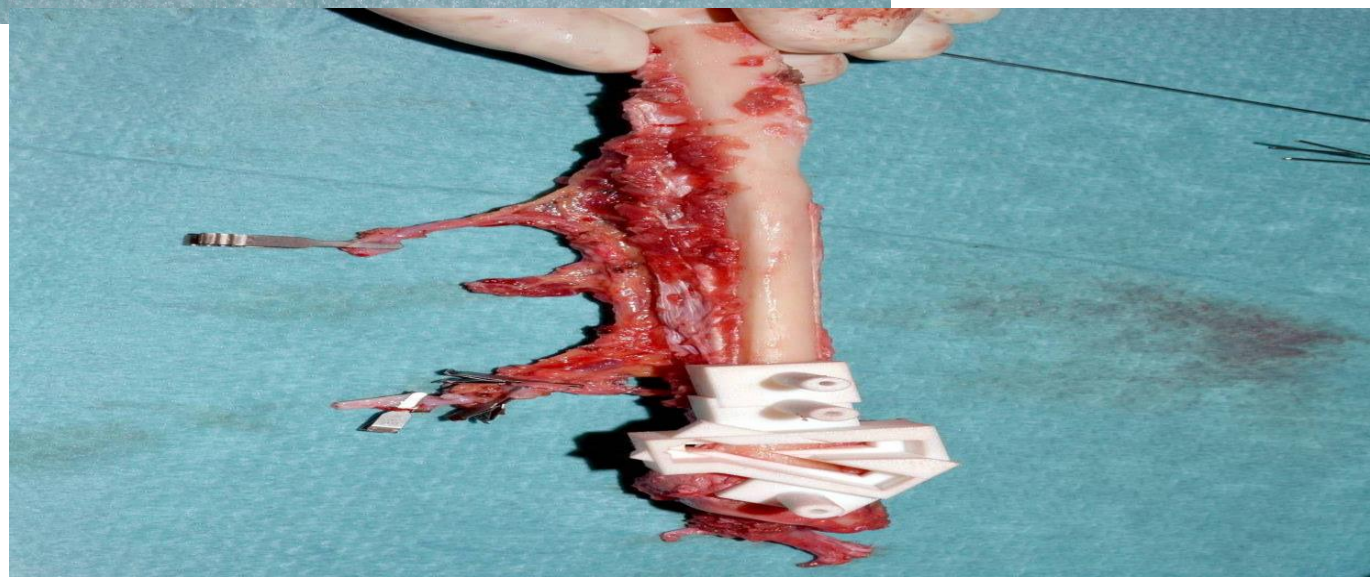


forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012





forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

SarcOmaSurgery

forearm; proximal radius resection; fibula surgery September 05, 2012

forearm; proximal radius resection; fibula surgery September 05, 2012

sarkom board
Hochspezialisierte Medizin (HSM)

1.) harvest of sural nerve through retromalleolar incision

→ to reconstruct radial nerve

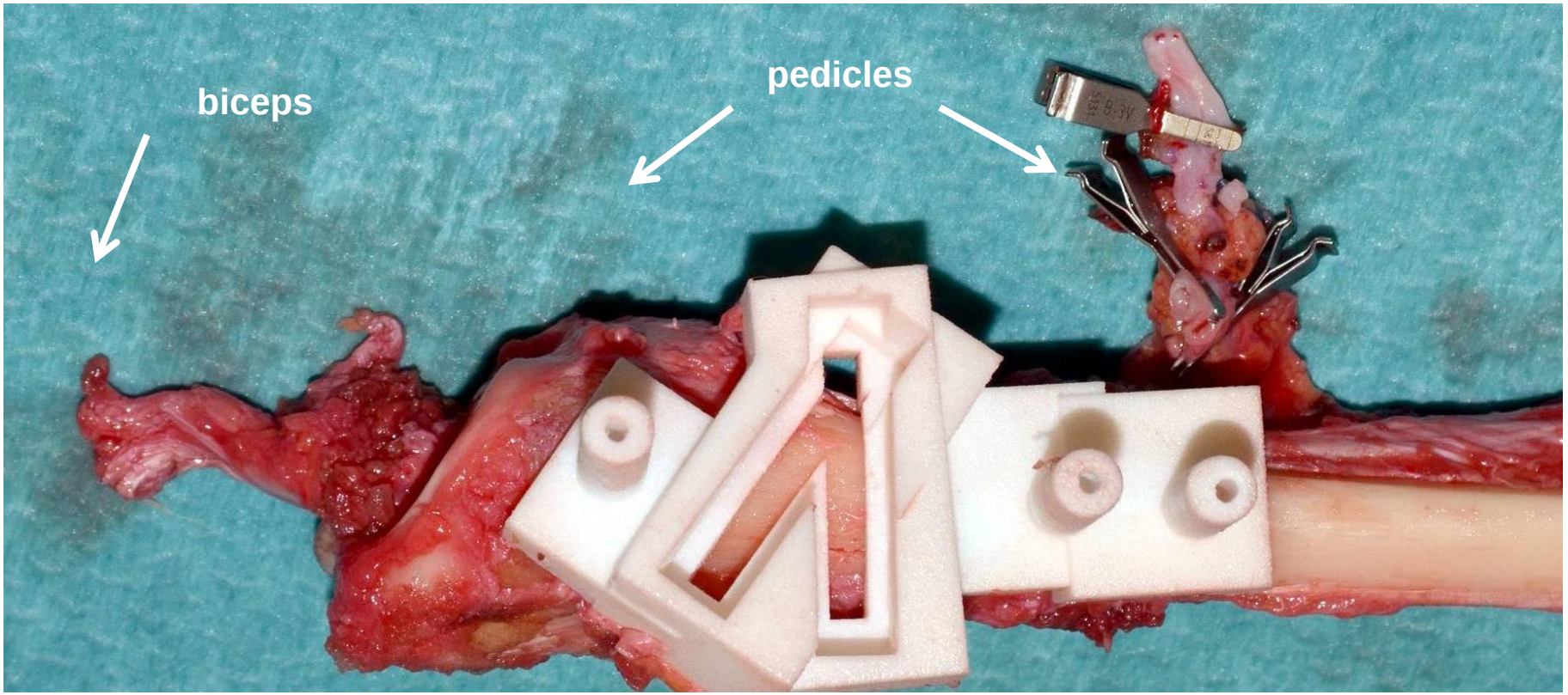
2.) reconstruction of LCL using resorbable anker

3.) harvest of ECRL to reconstruct anular ligament

SarcOmaSurgery

forearm; proximal radius resection; fibula

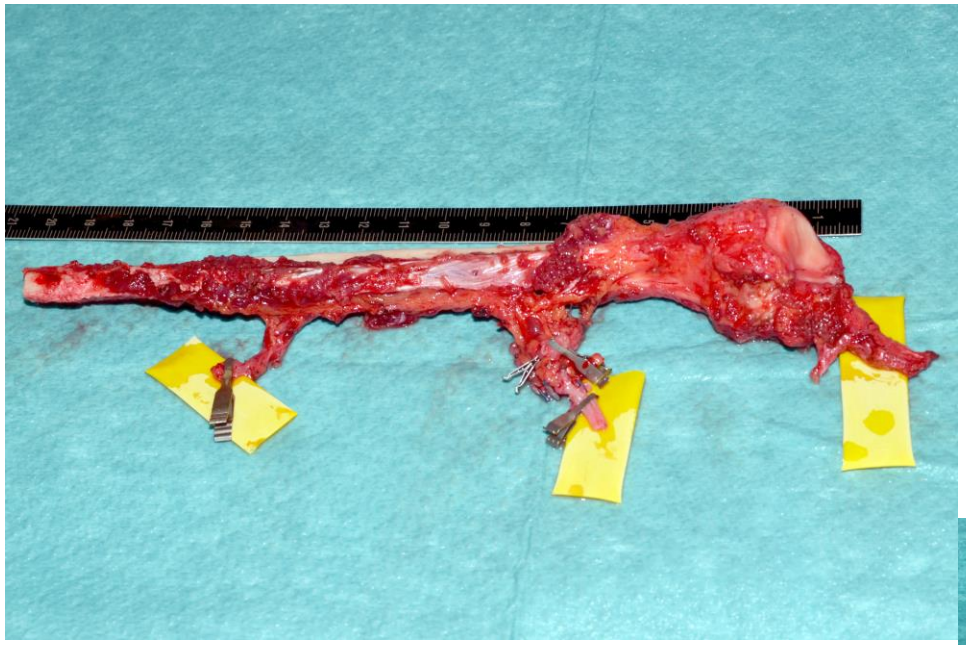
Surgery: Sept. 5, 2012

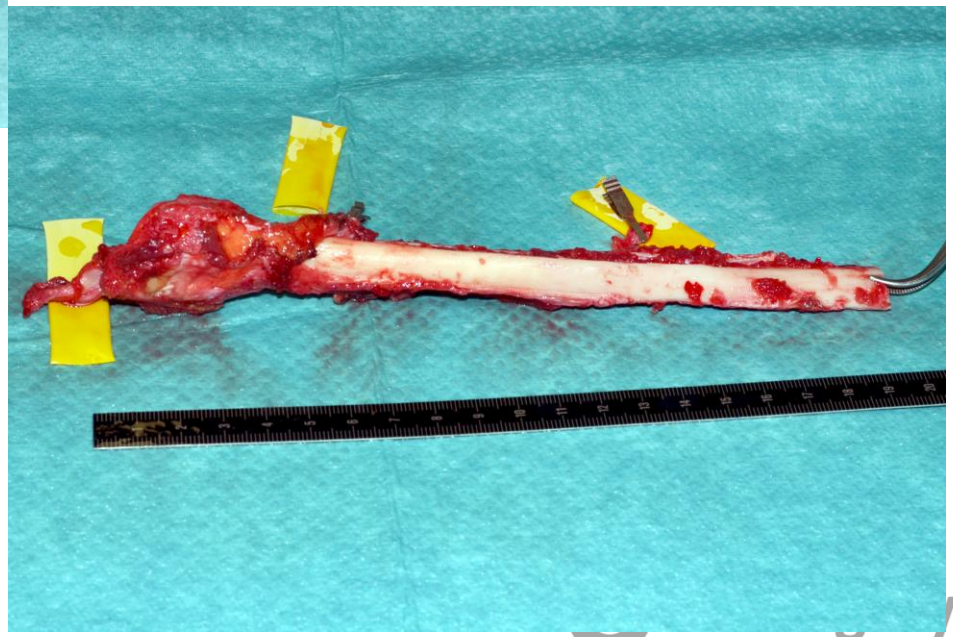


forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

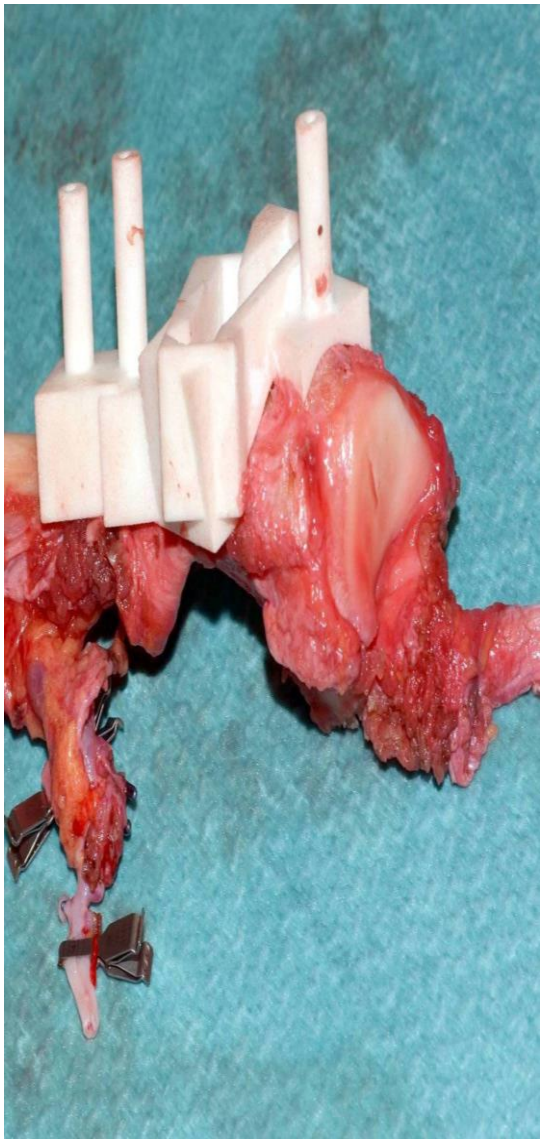


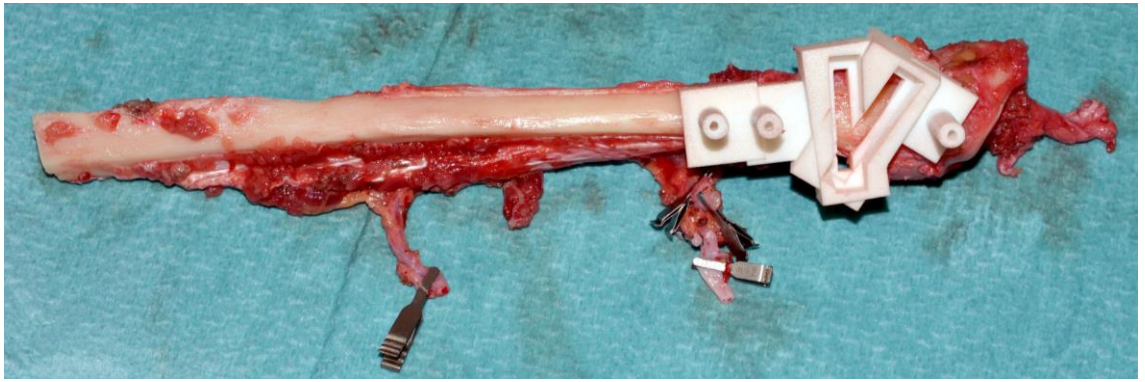


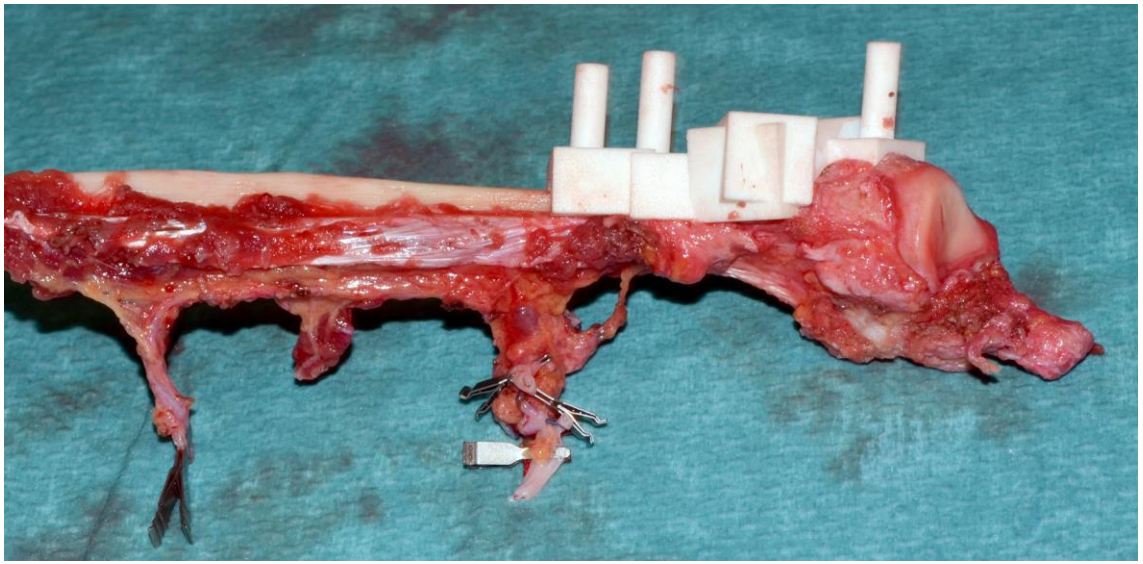
forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012





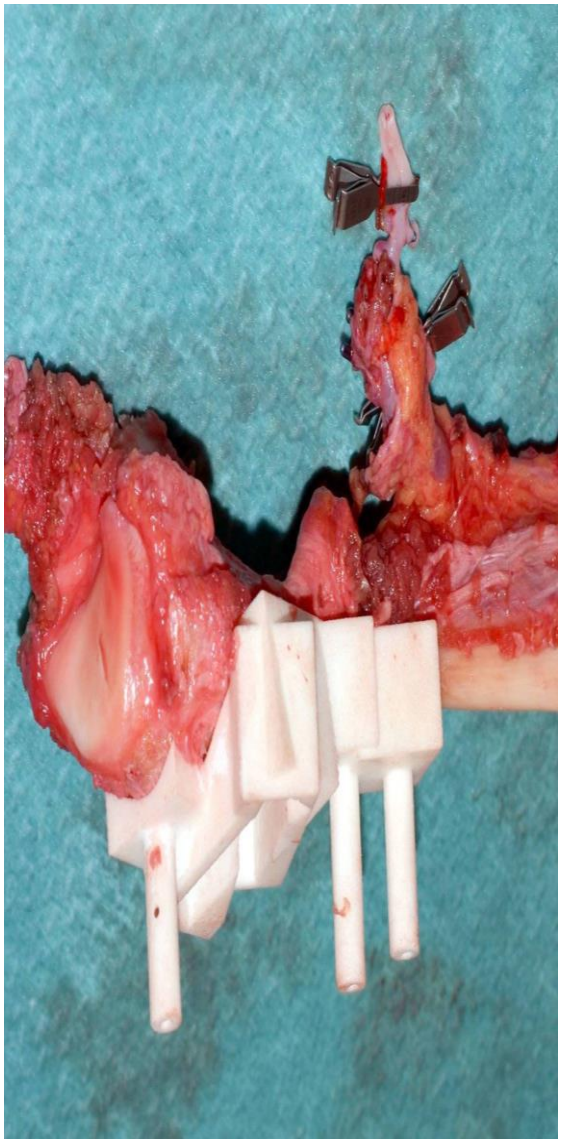


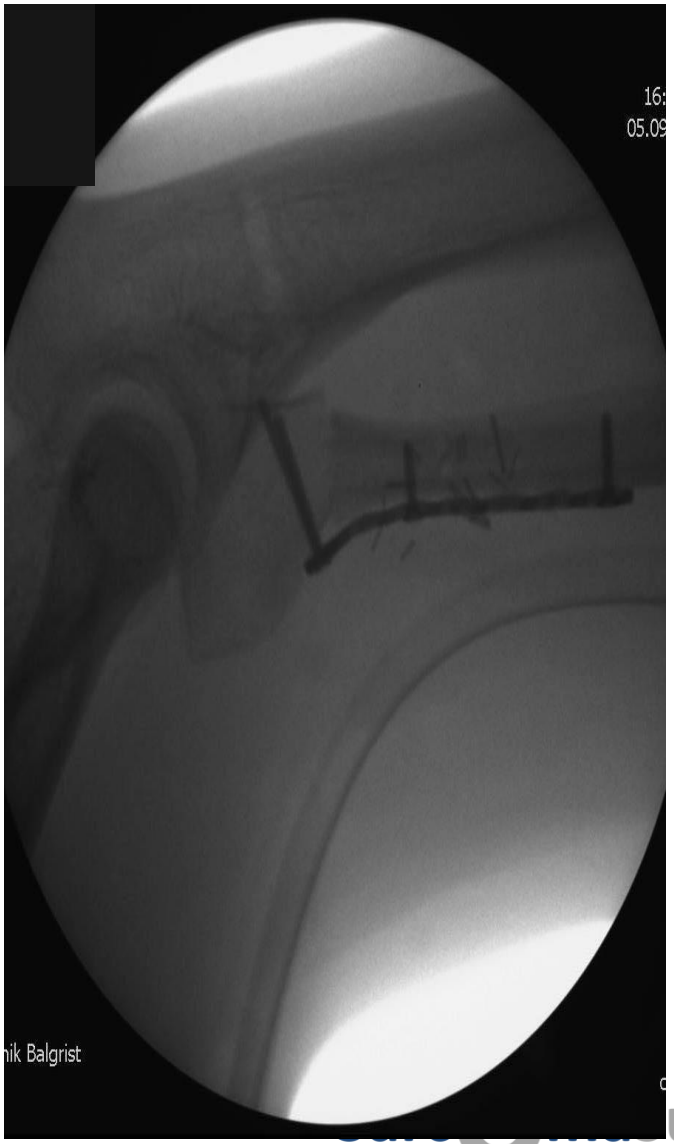
SarcOmaSurgery

forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

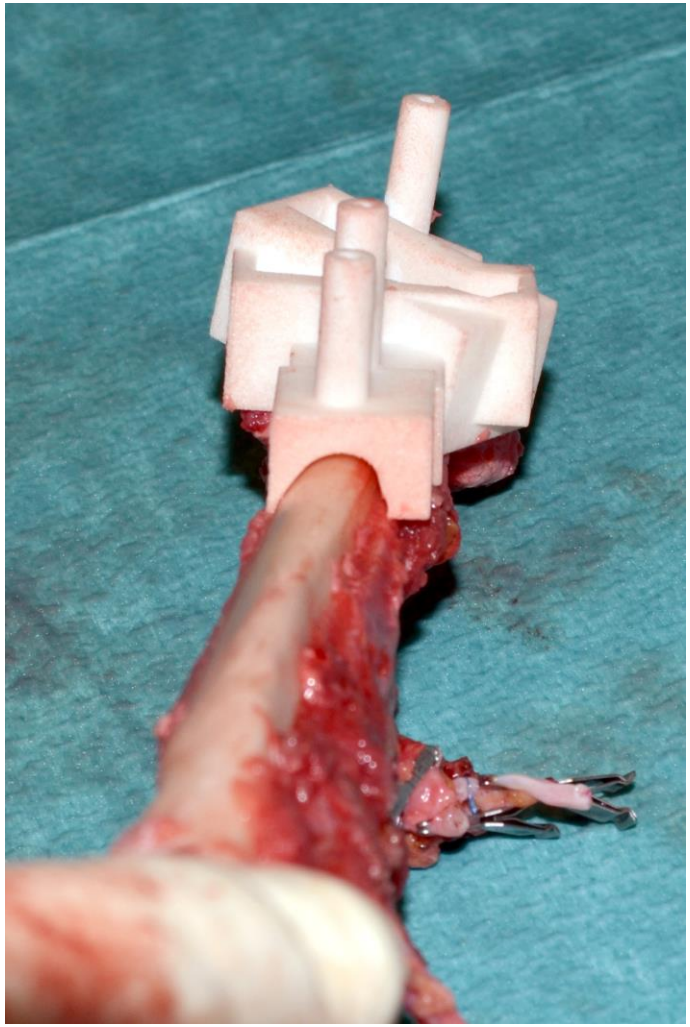
Surgery: Sept. 5, 2012

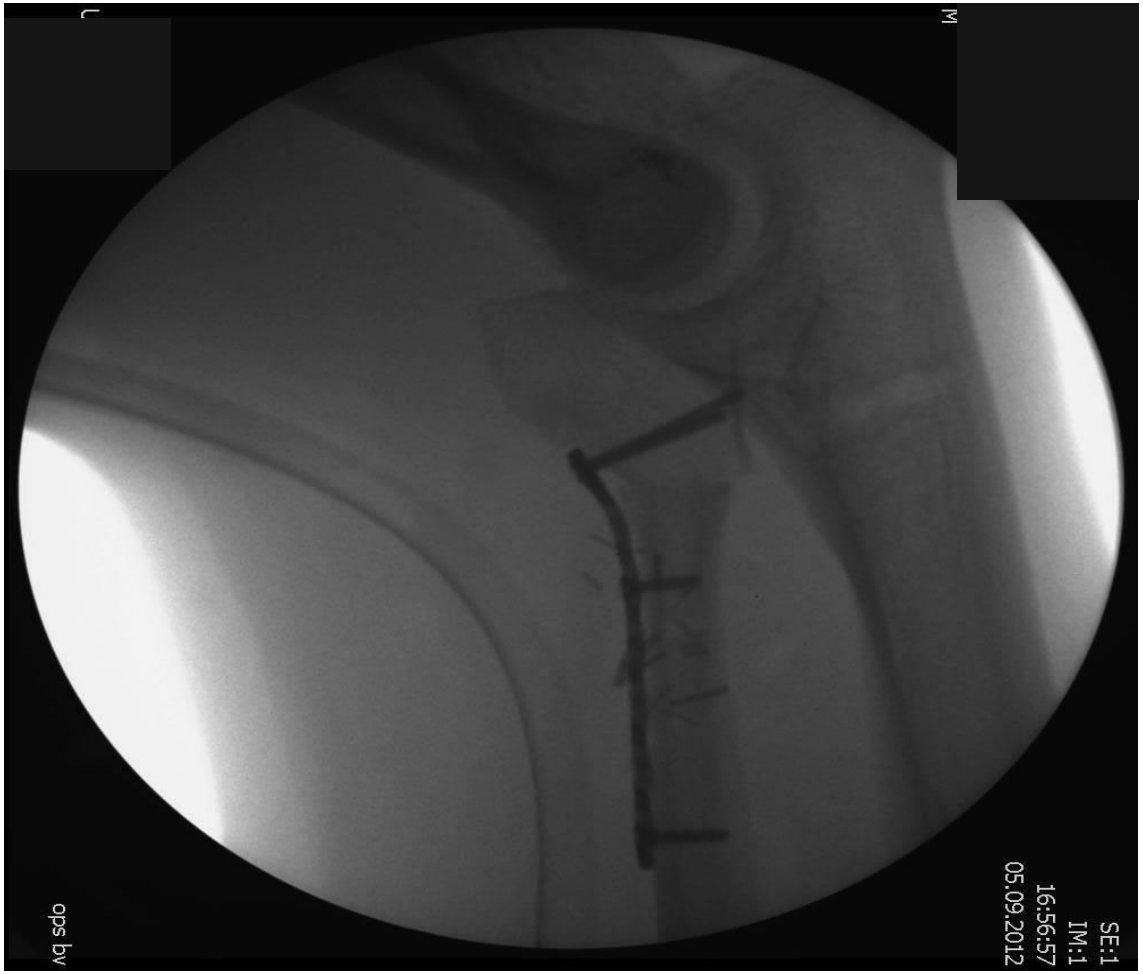




forearm; proximal radius resection; fibula

Surgery: Sept. 5, 2012

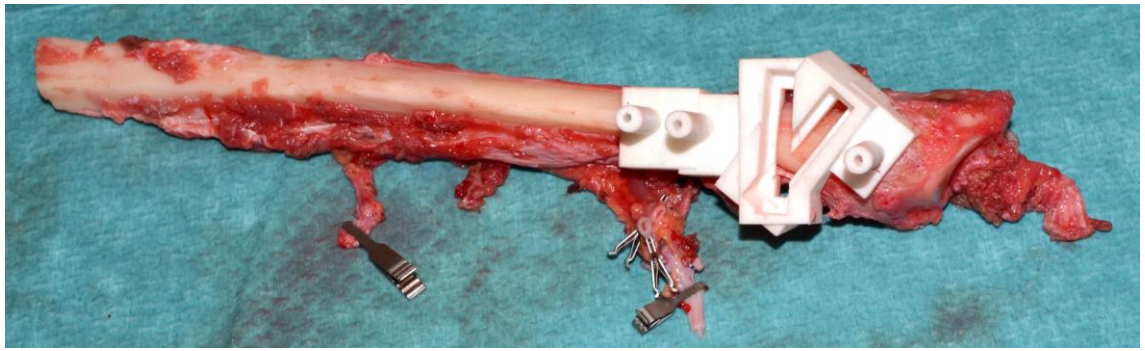


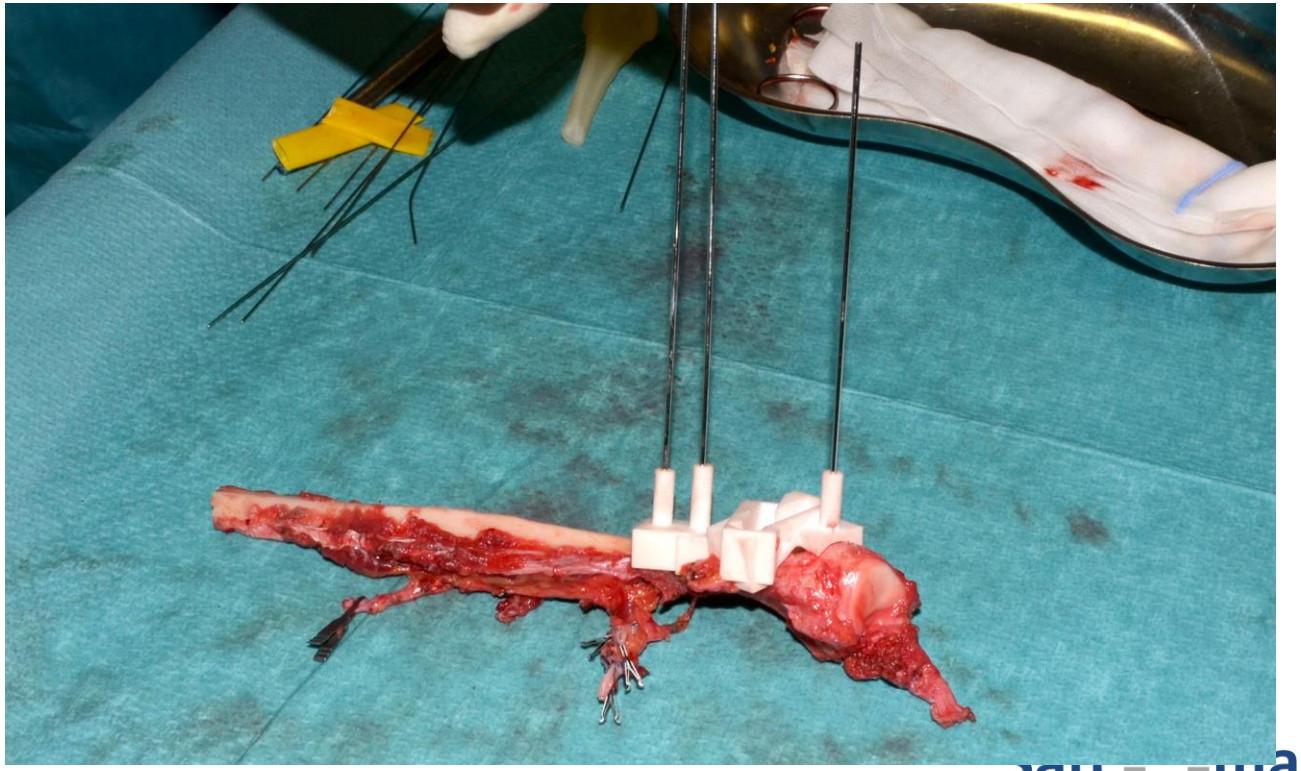


forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

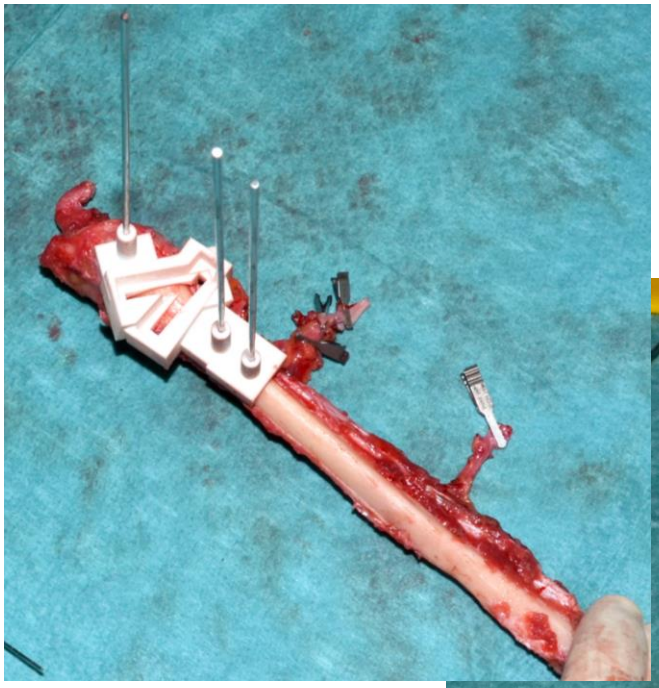


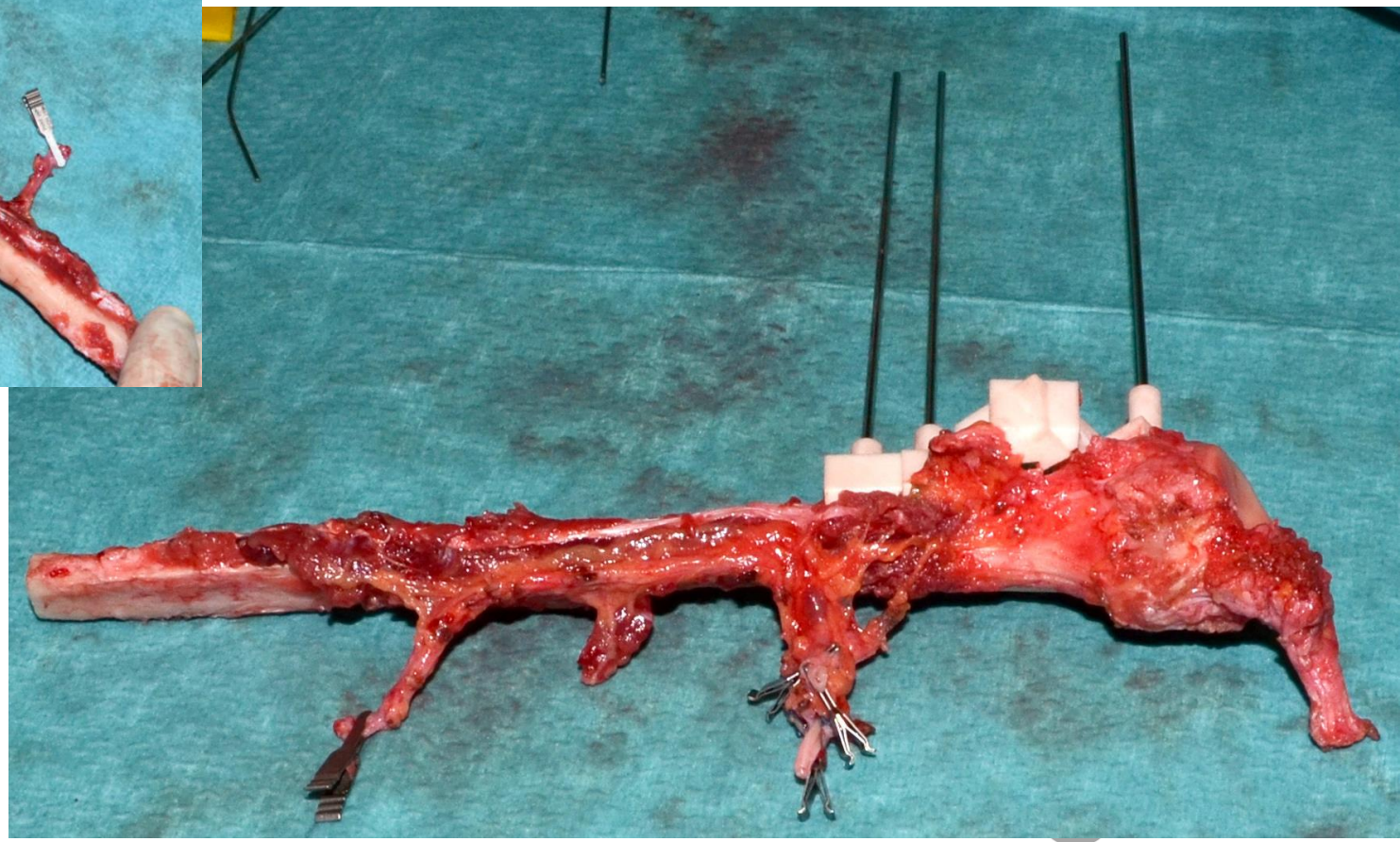


forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012





forearm; proximal radius resection; fibula

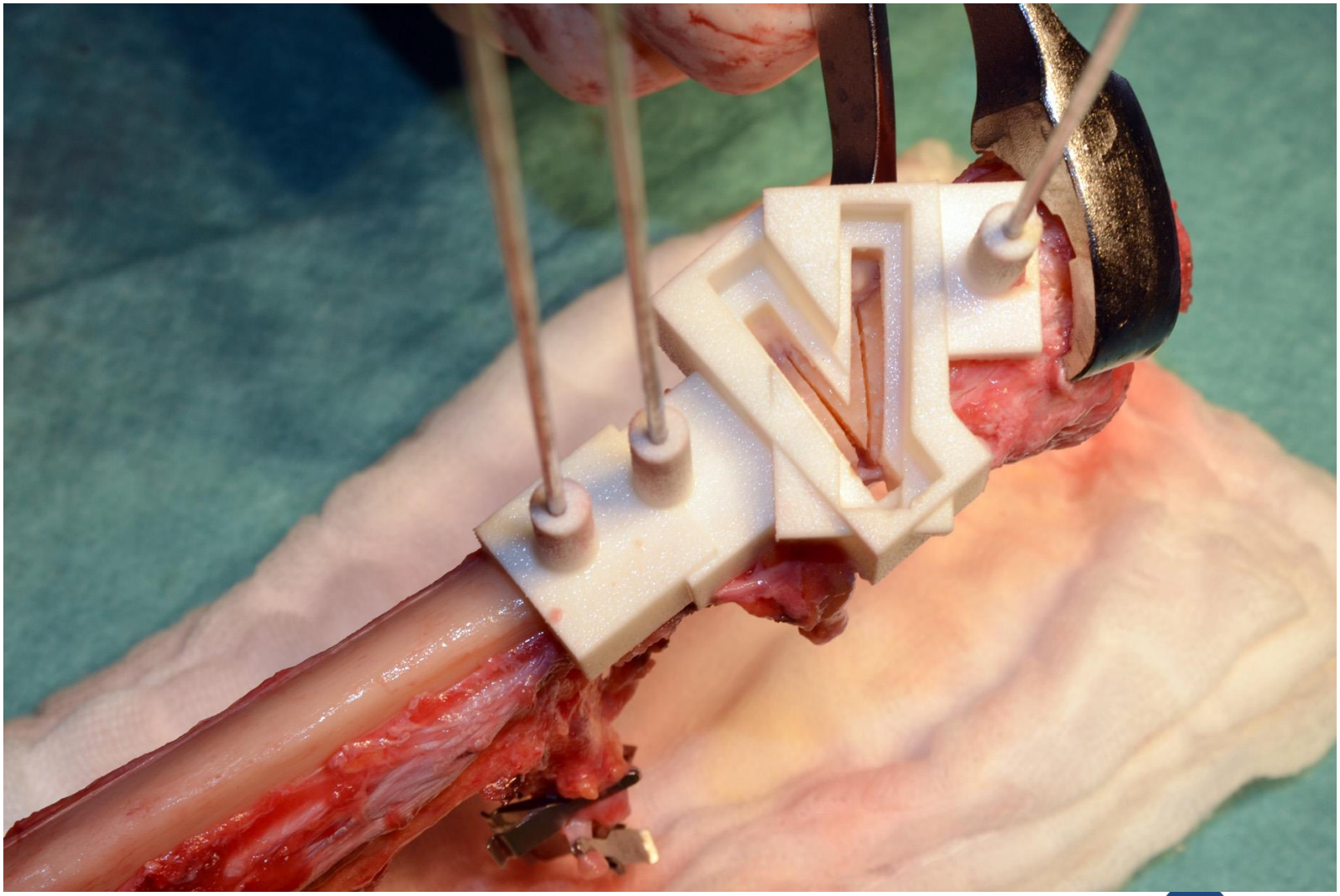
sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

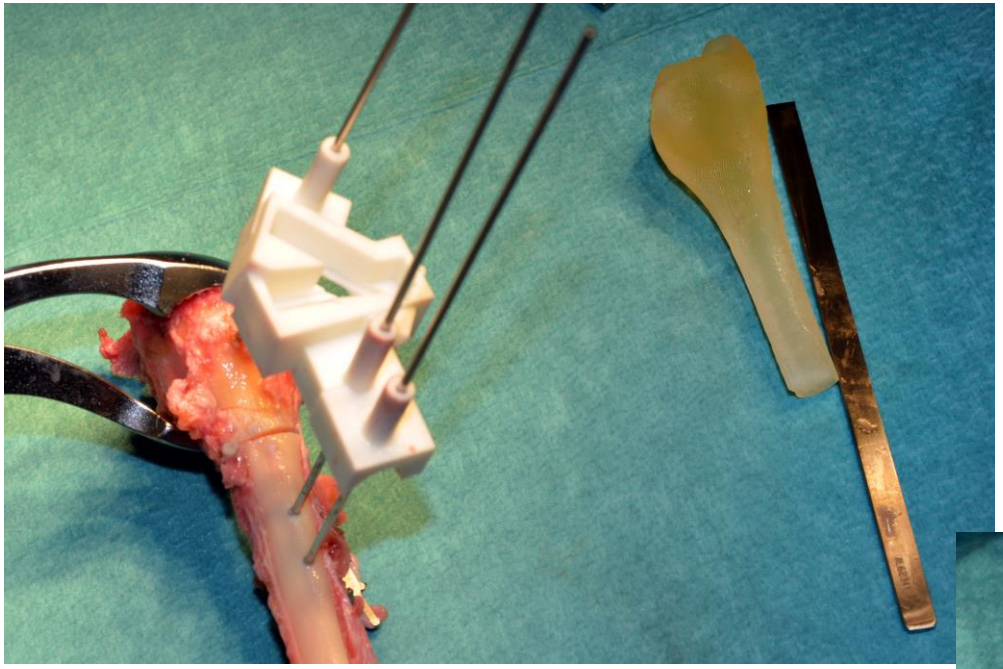


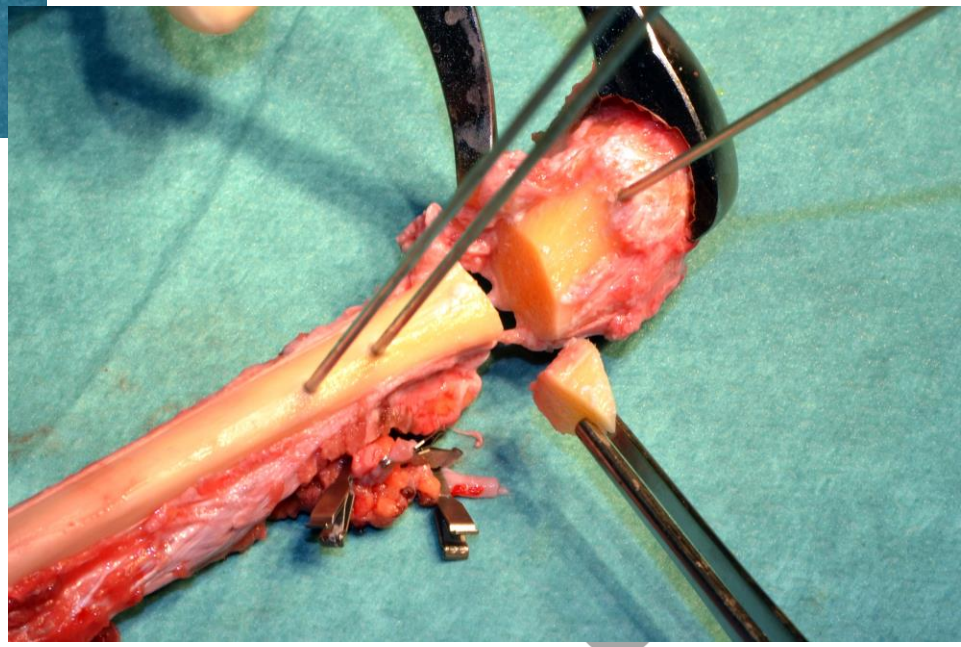
SarcomaSurgery

forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

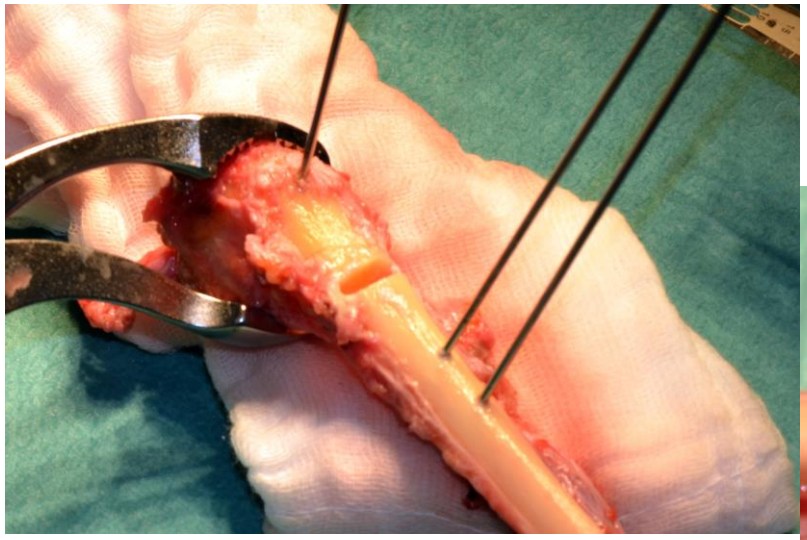


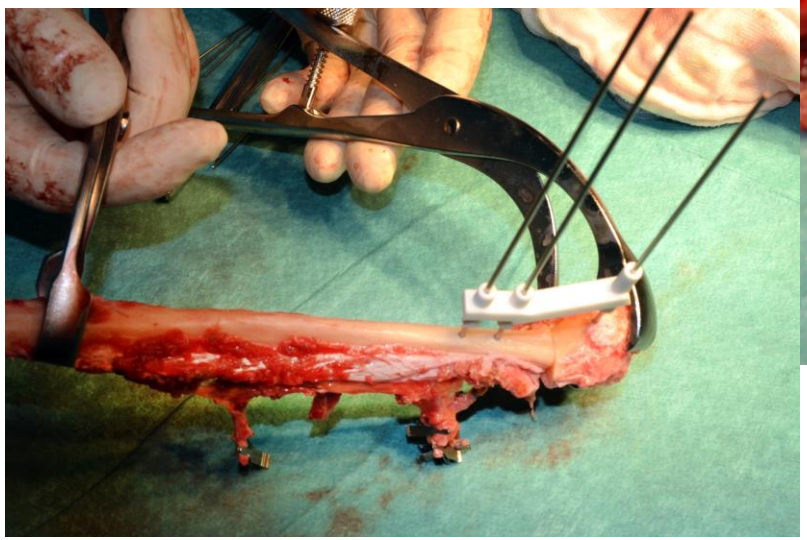


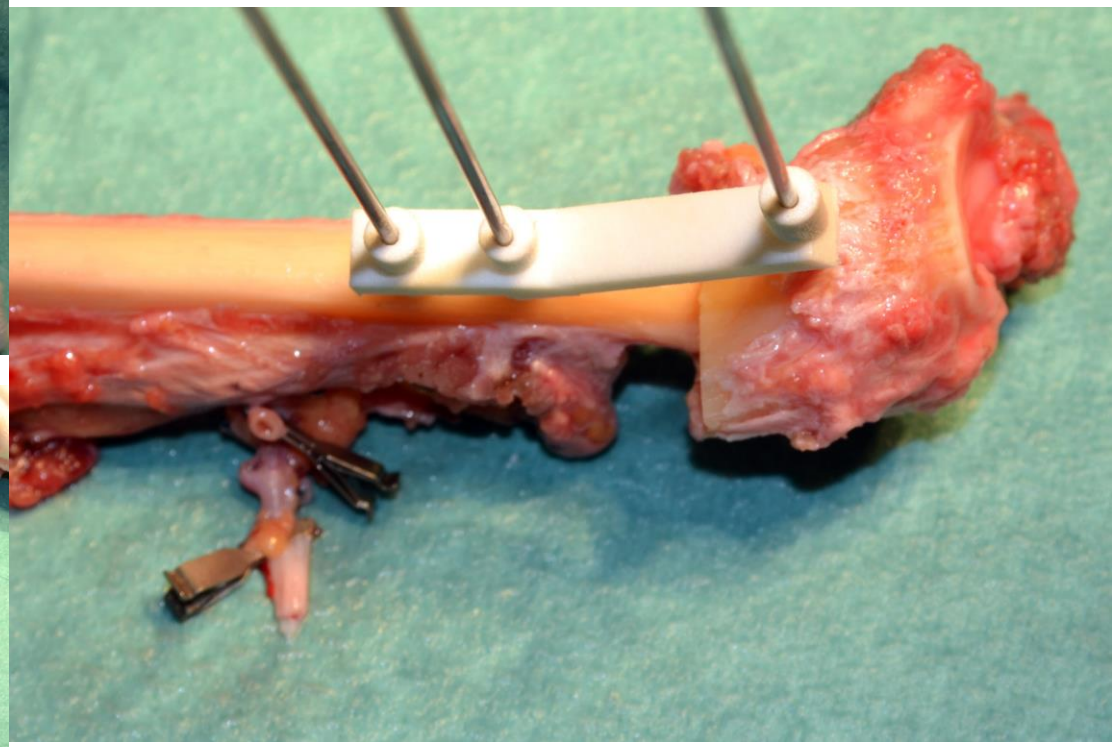
forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012





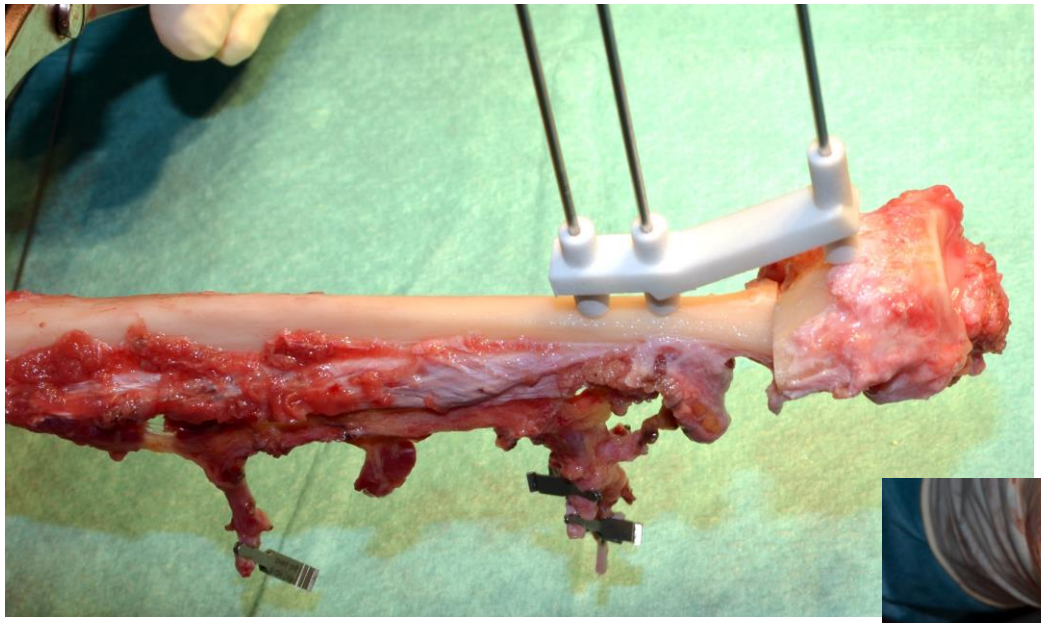


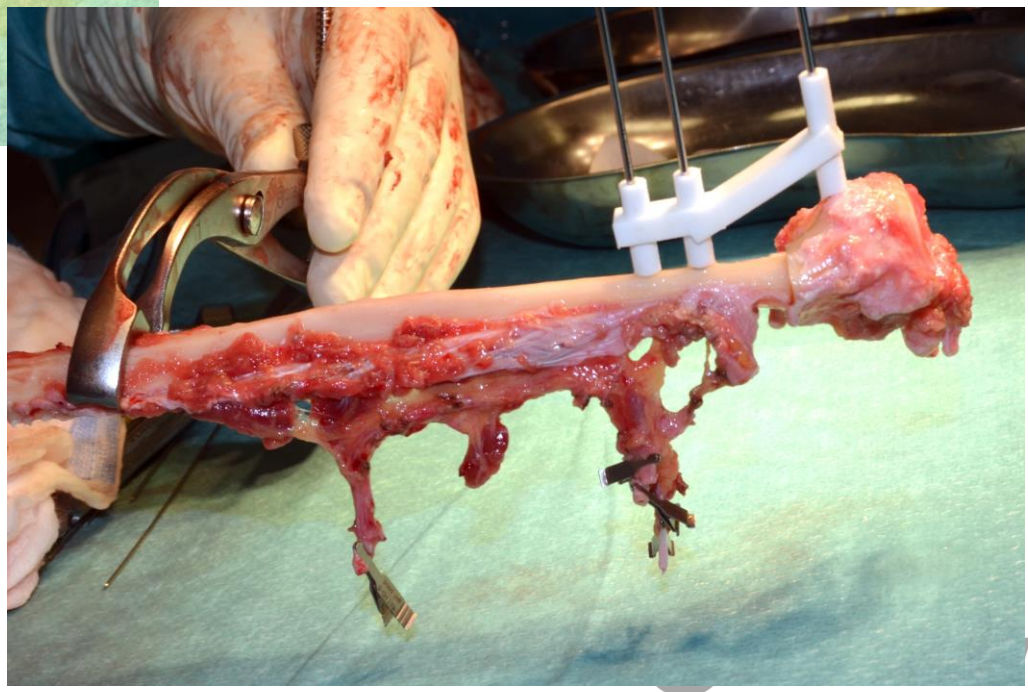
SarcOmaSurgery

forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

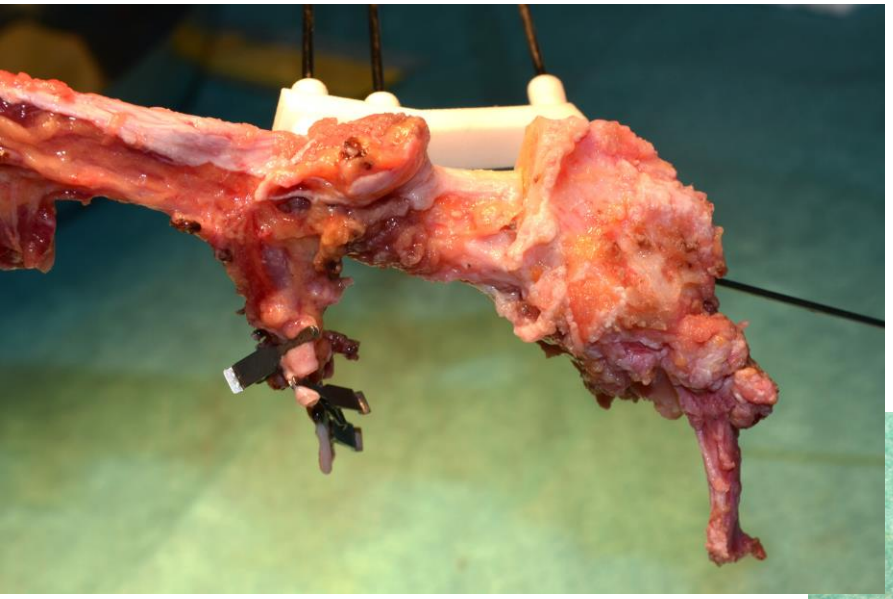


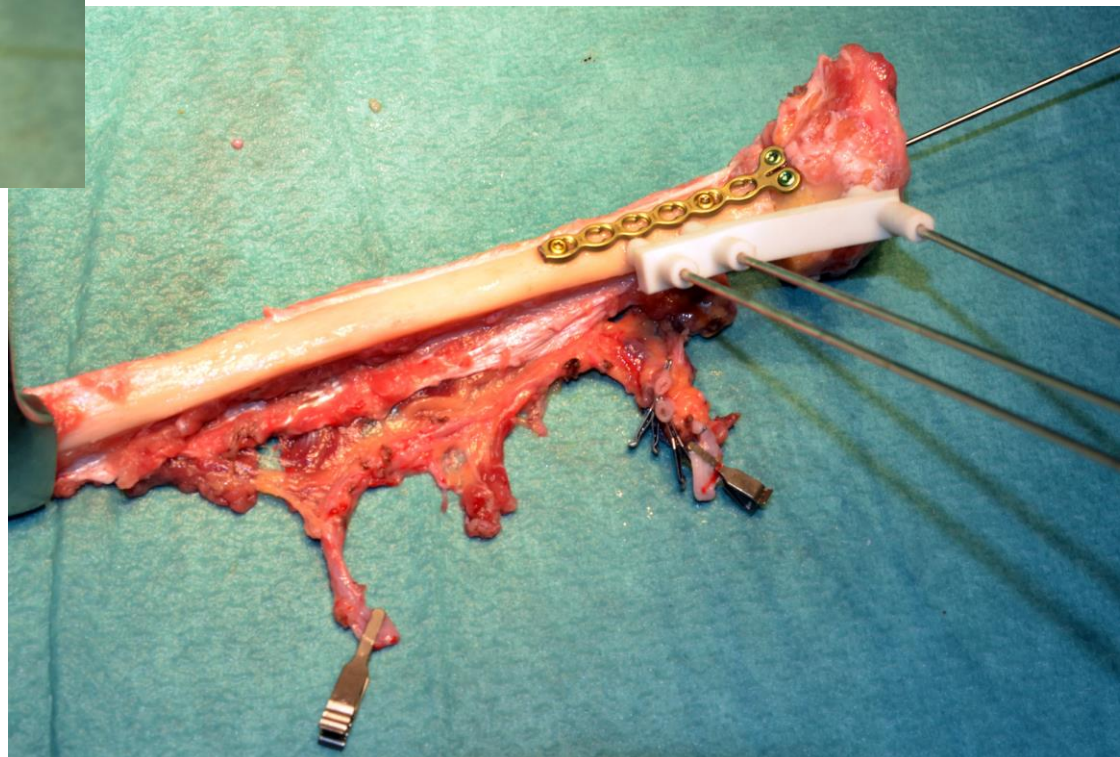


forearm; proximal radius resection; fibula

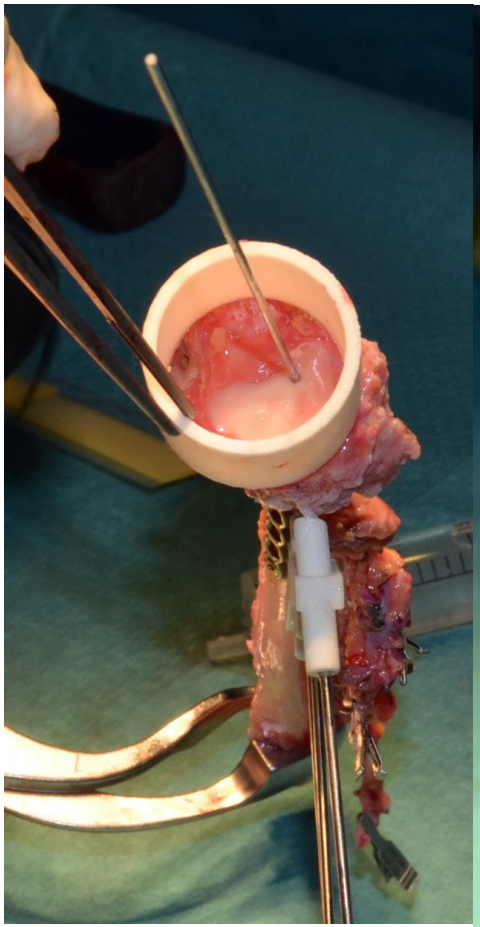
sarkom board
Hochspezialisierte Medizin (HSM)

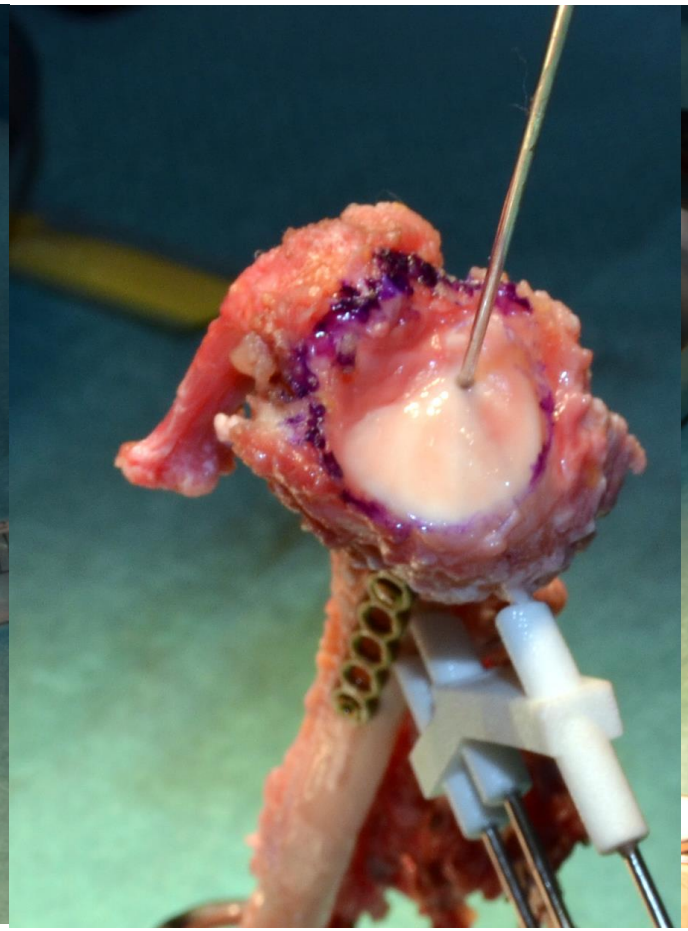
Surgery: Sept. 5, 2012

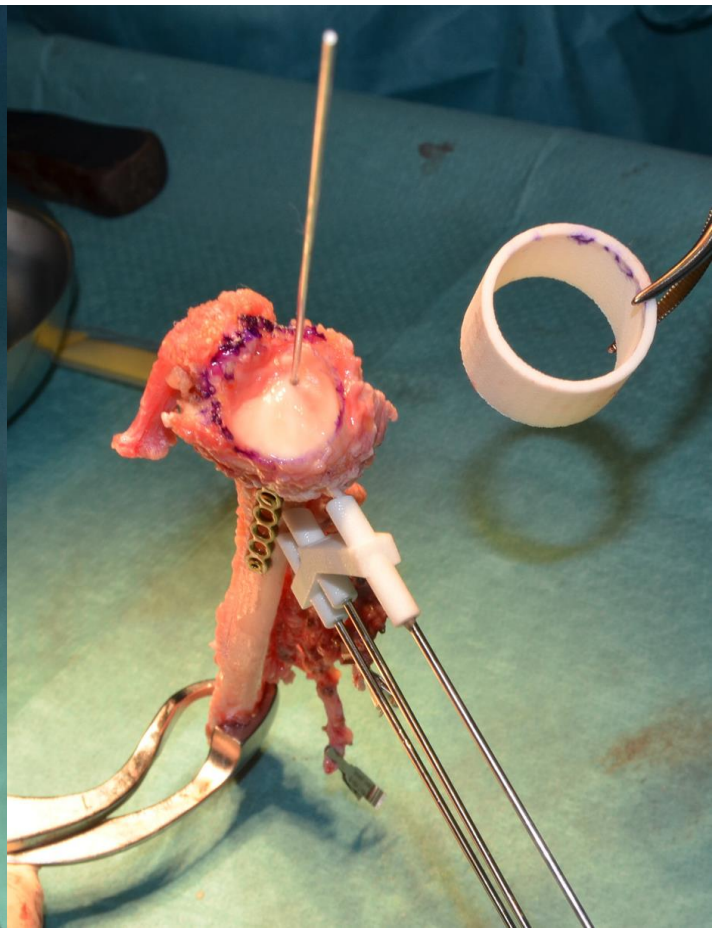




forearm; proximal radius resection; fibula surgery September 05, 2012



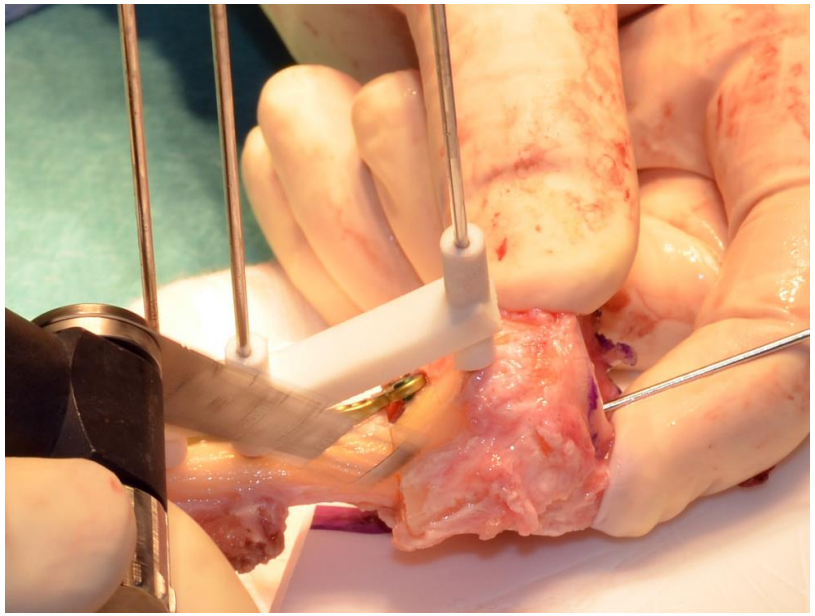


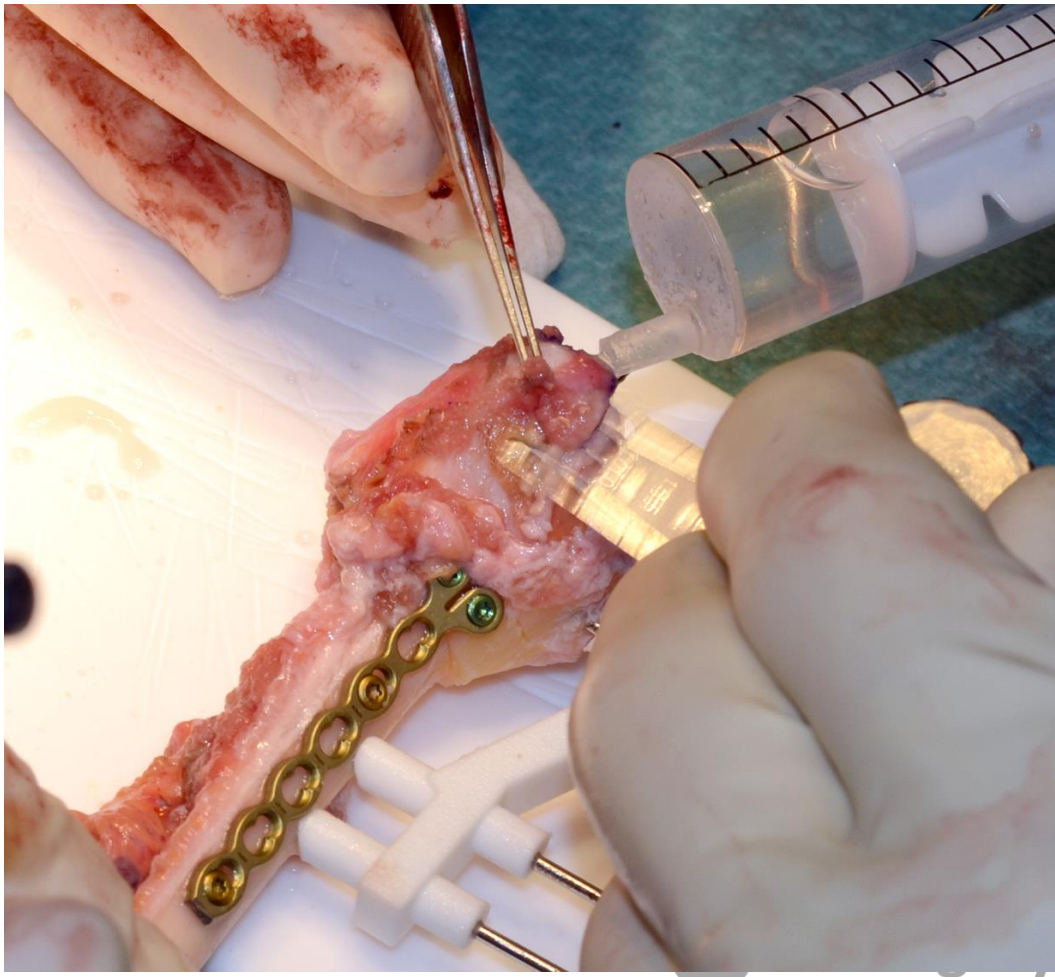


forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

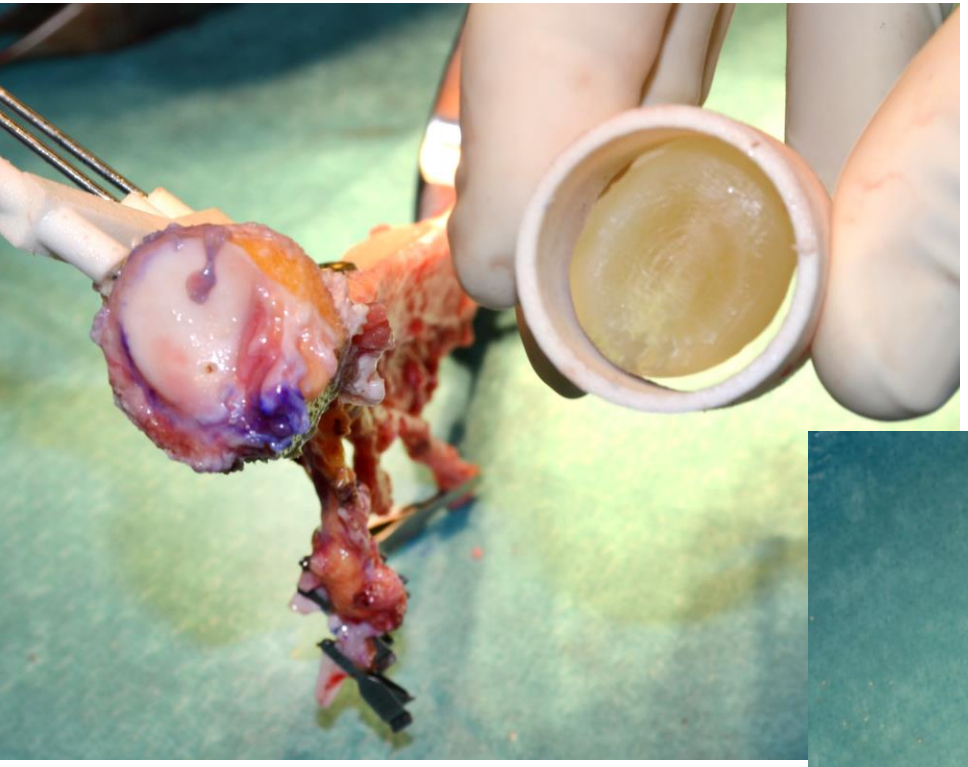


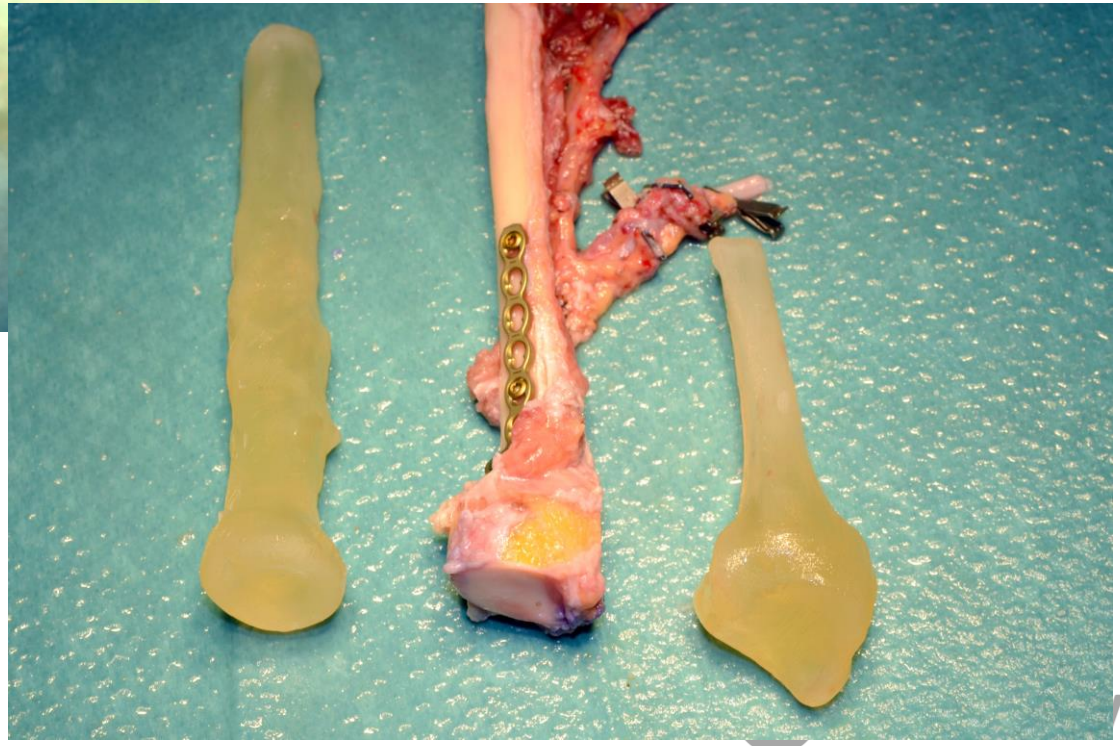


forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

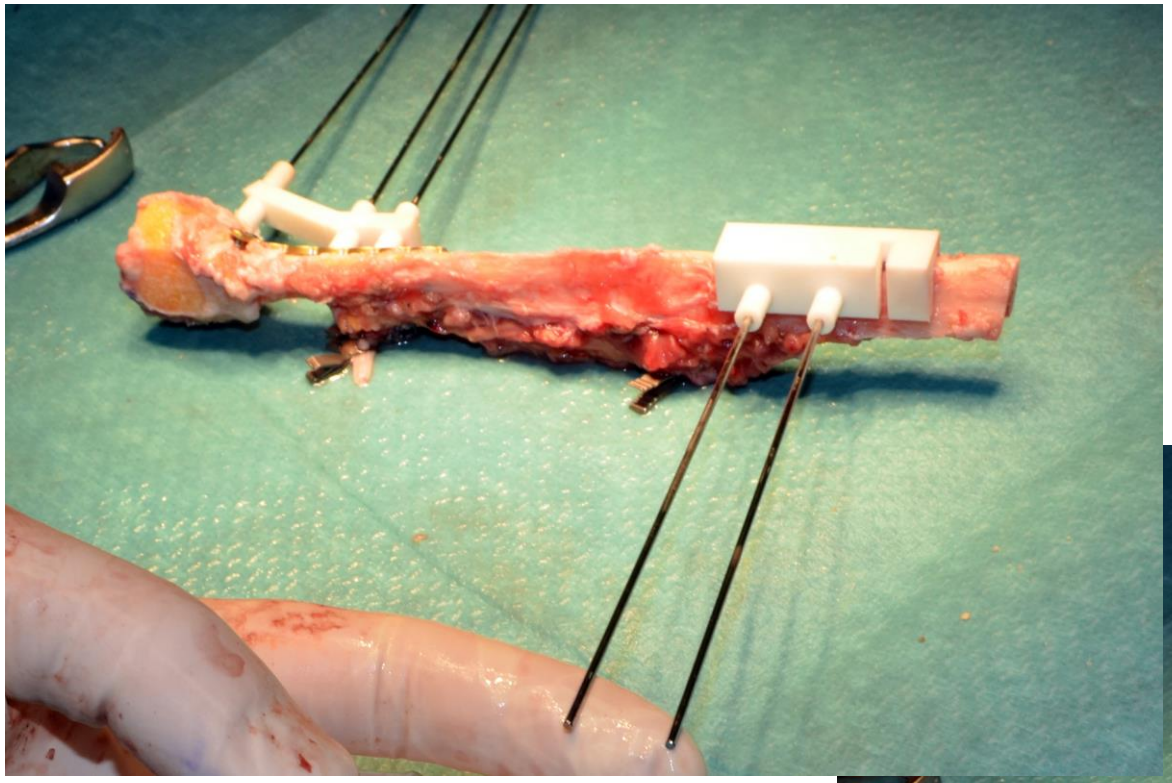


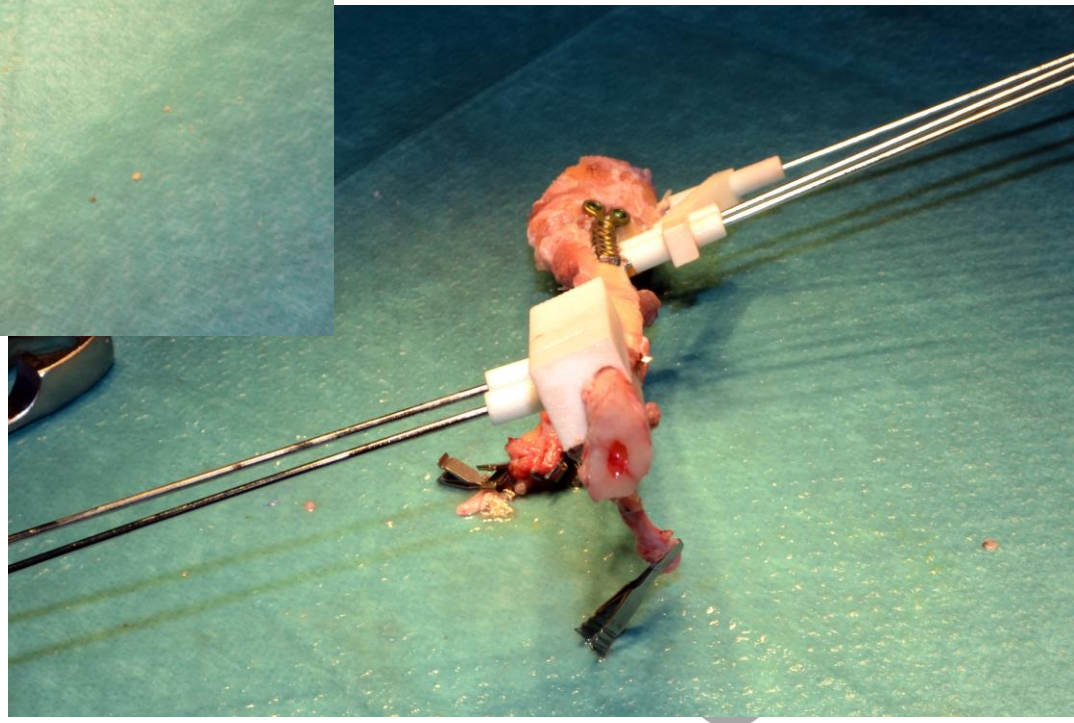


forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012

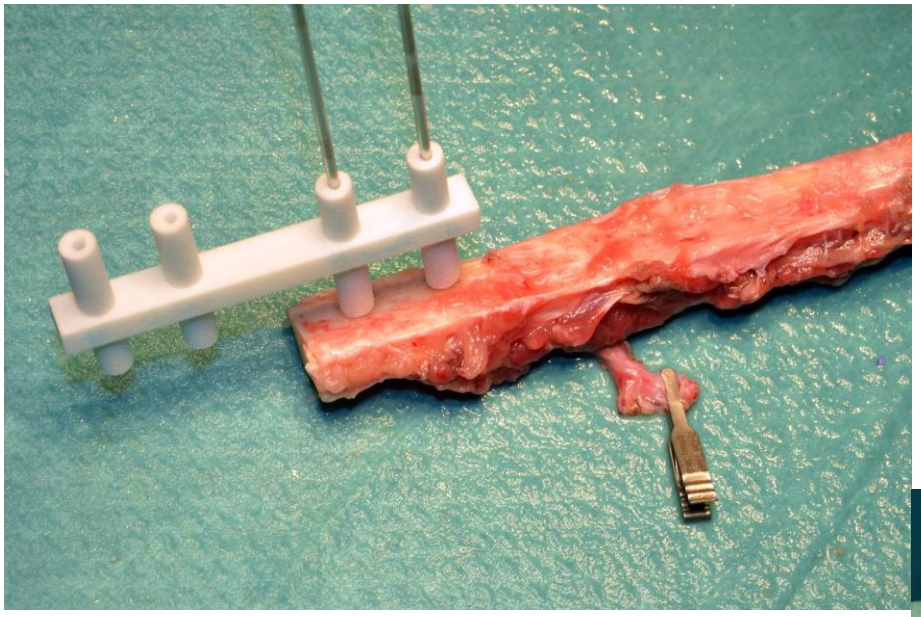


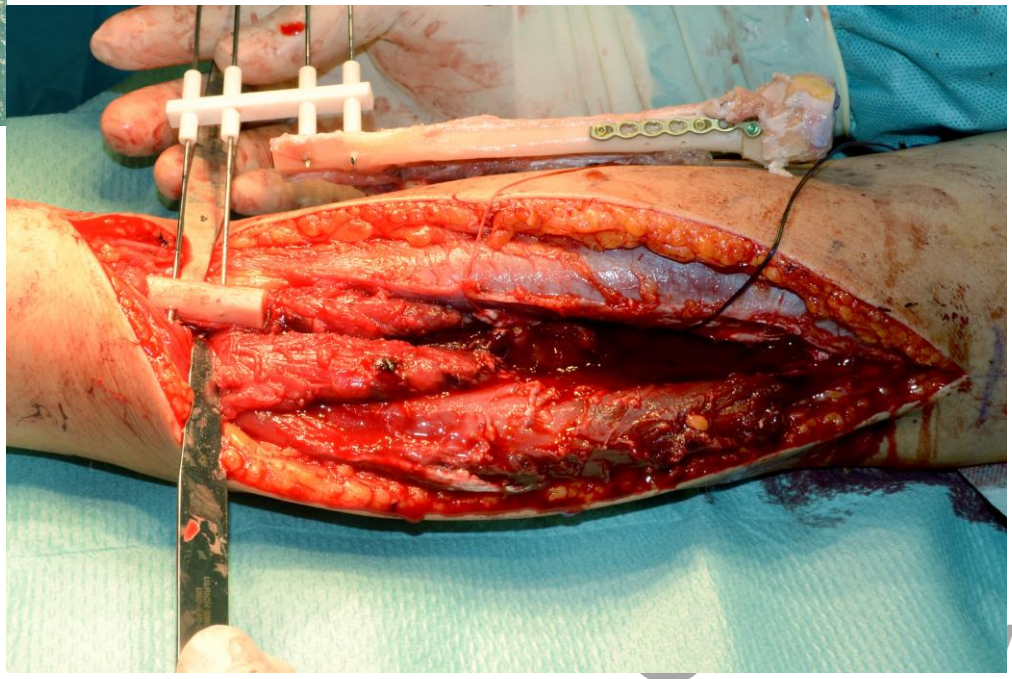


forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

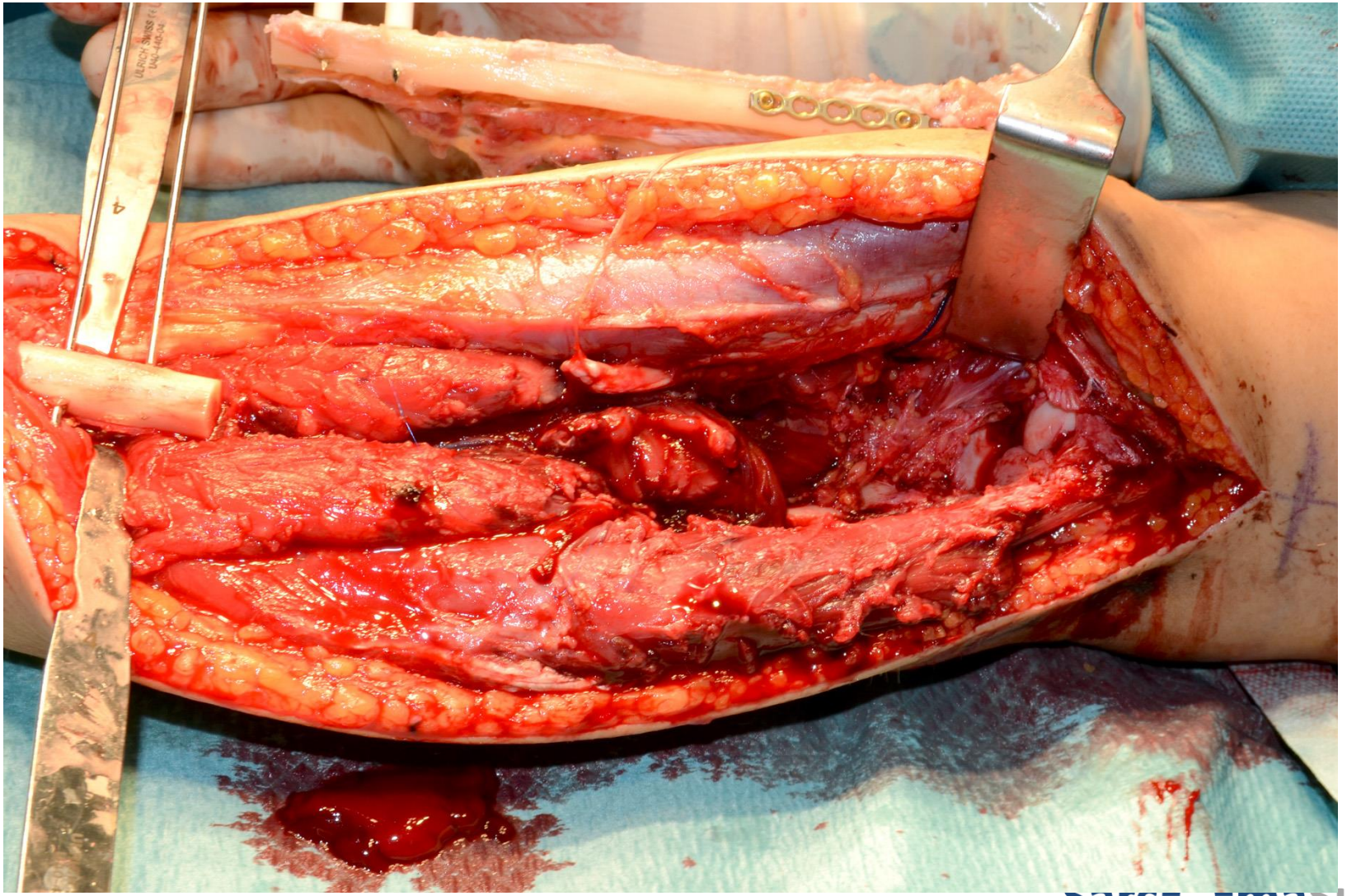
Surgery: Sept. 5, 2012





forearm; proximal radius resection; fibula

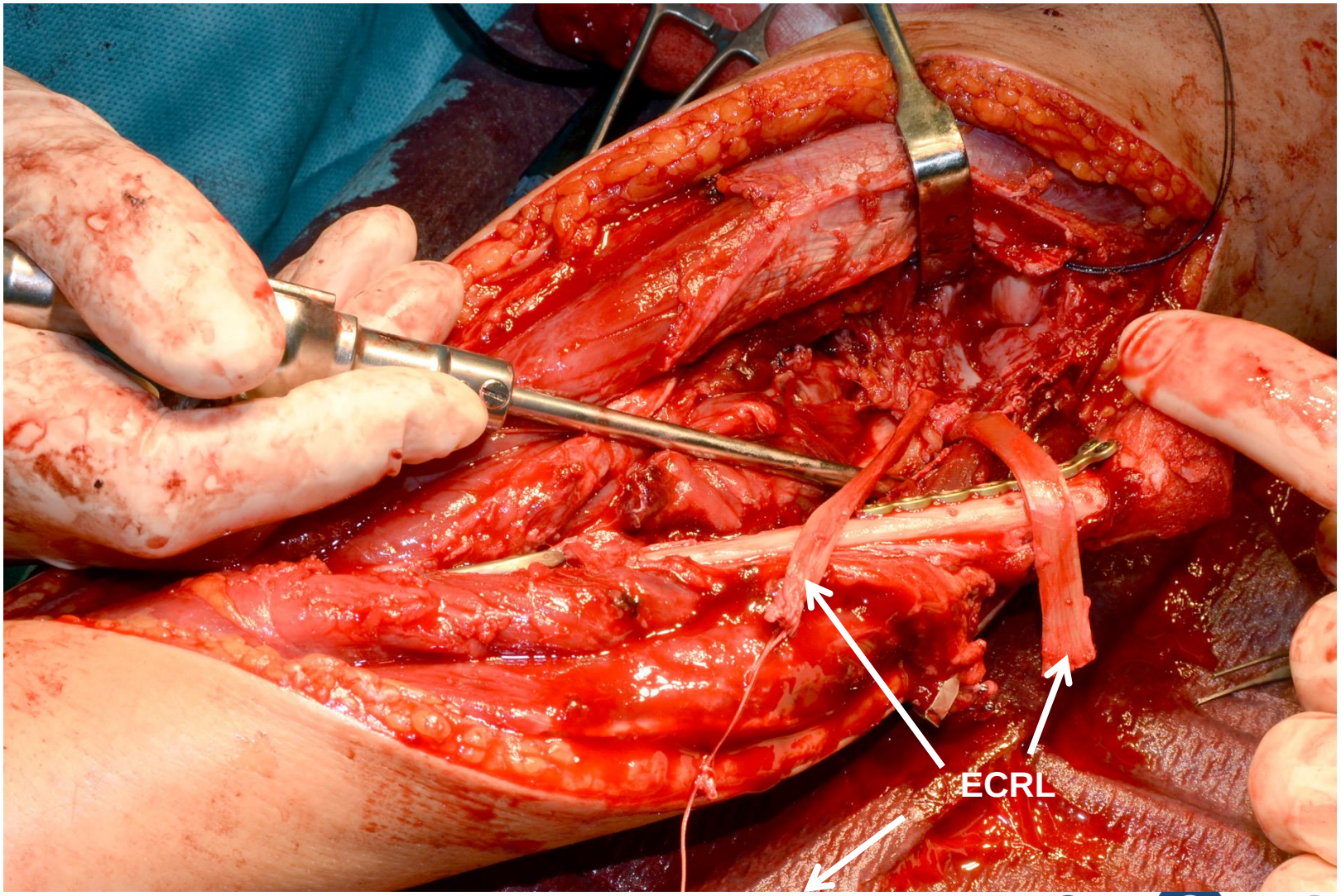
Surgery: Sept. 5, 2012



forearm; proximal radius resection; fibula

sarkom board
Hochspezialisierte Medizin (HSM)

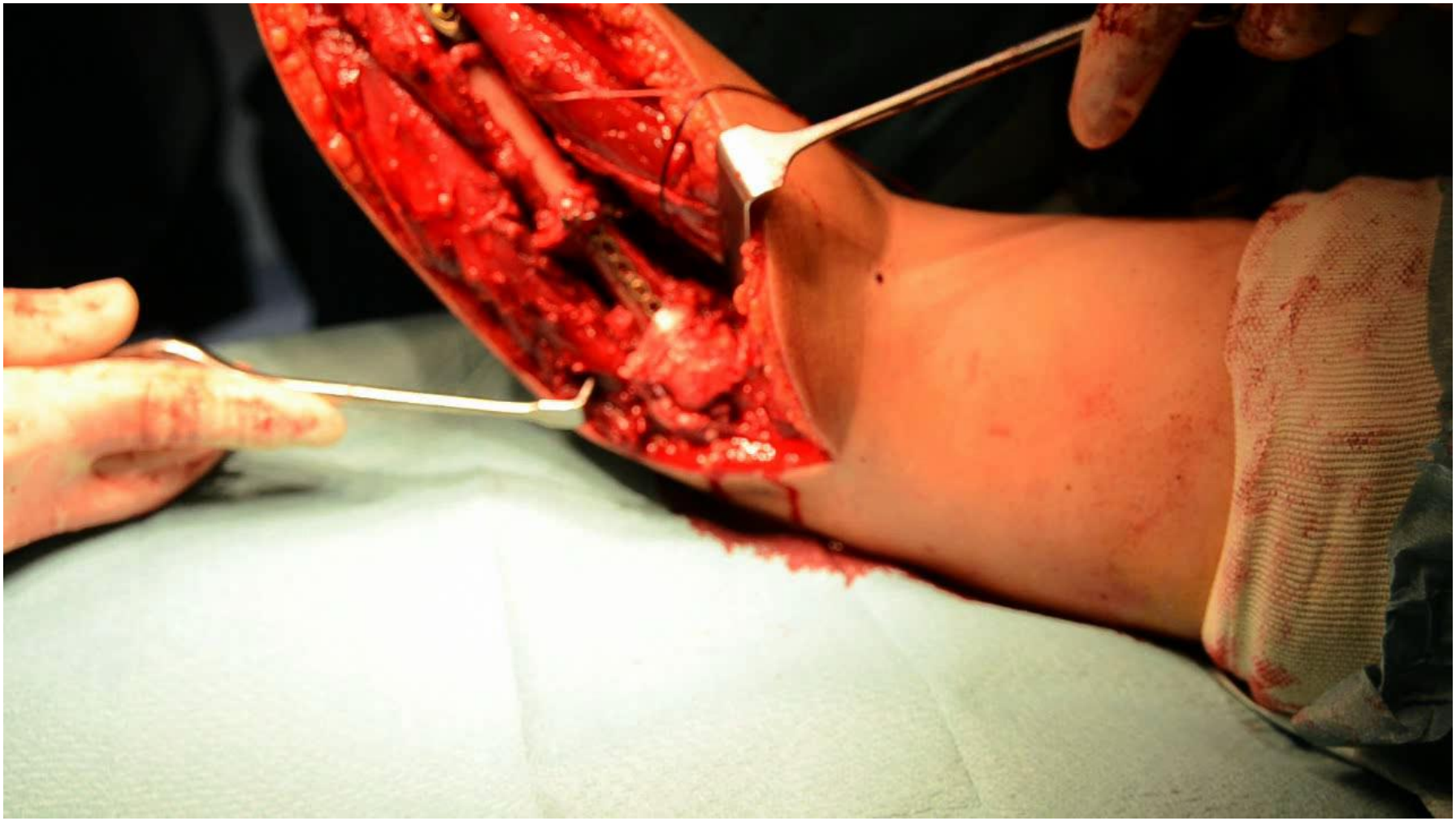
Surgery: Sept. 5, 2012



forearm; proximal radius resection; fibula

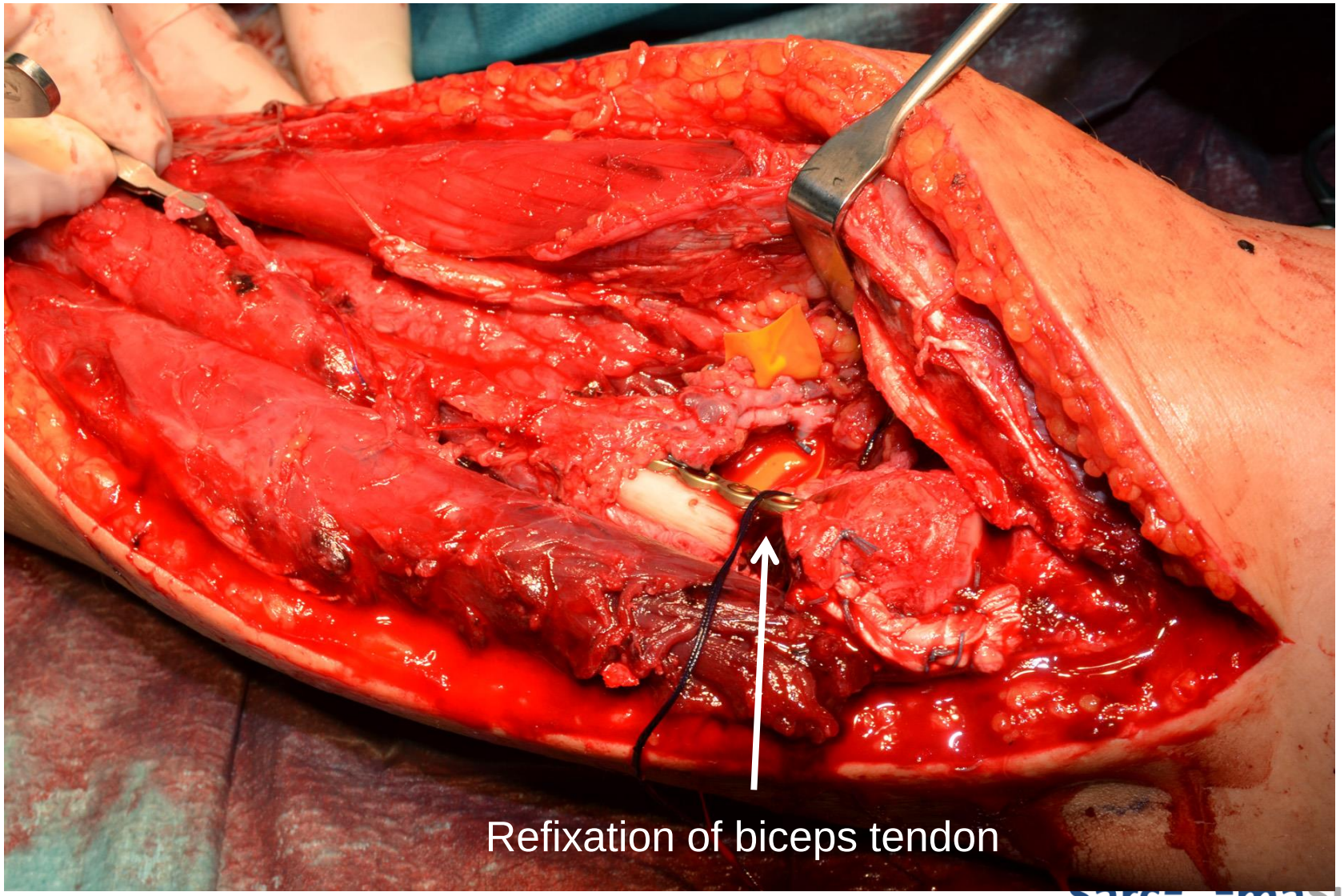
sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012



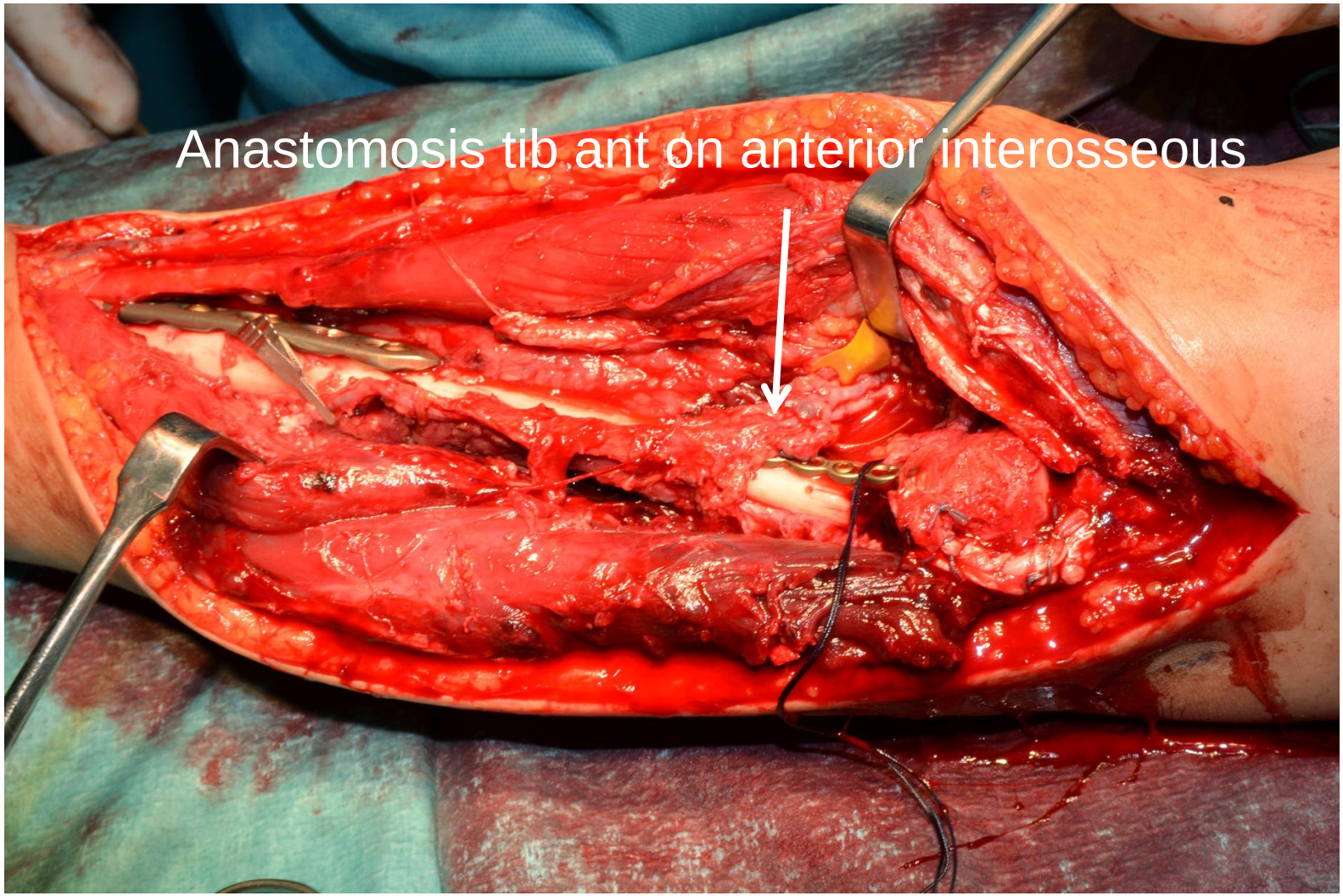
SarcOmaSurgery

forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012



forearm; proximal radius resection; fibula

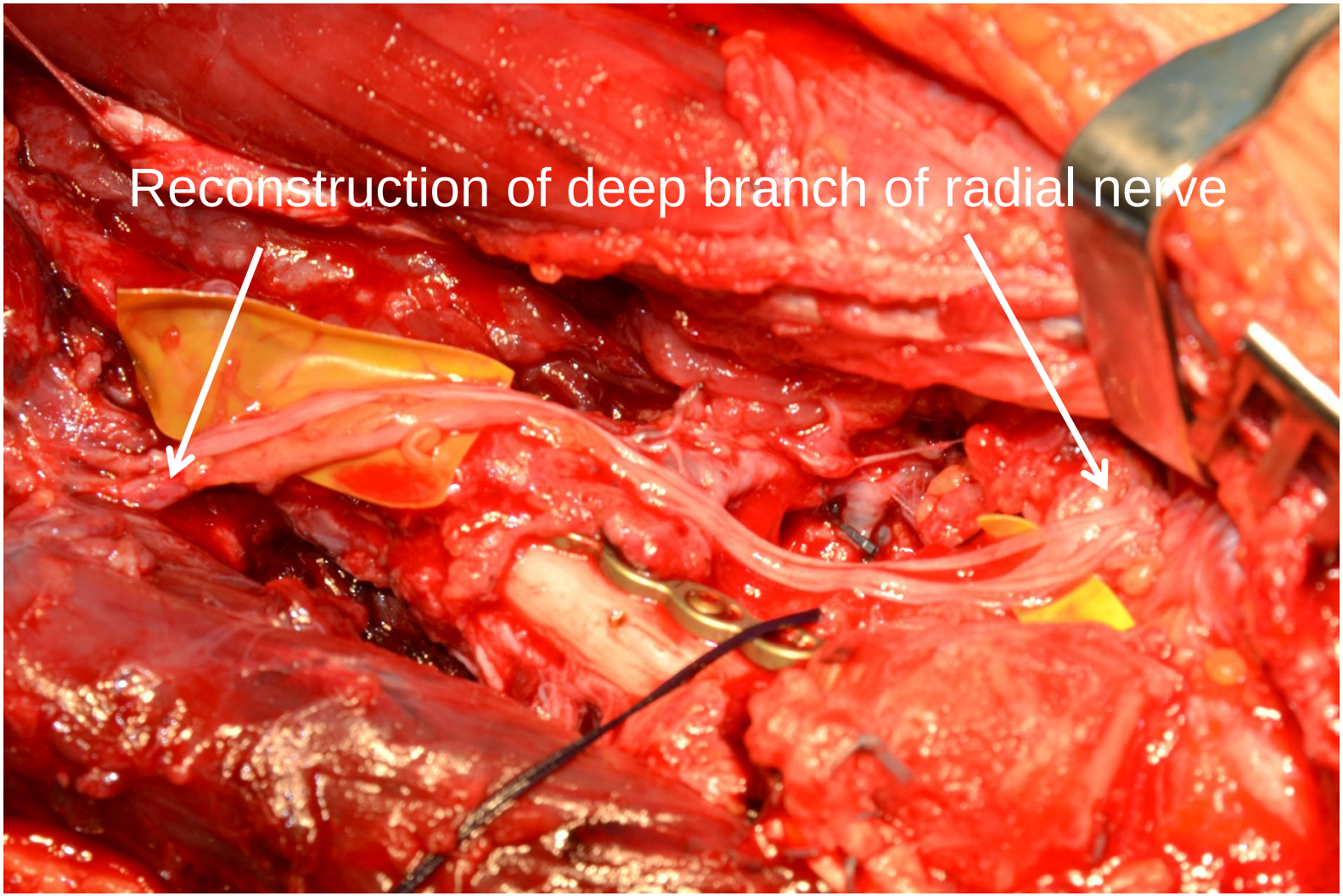
Surgery: Sept. 5, 2012



forearm; proximal radius resection; fibula

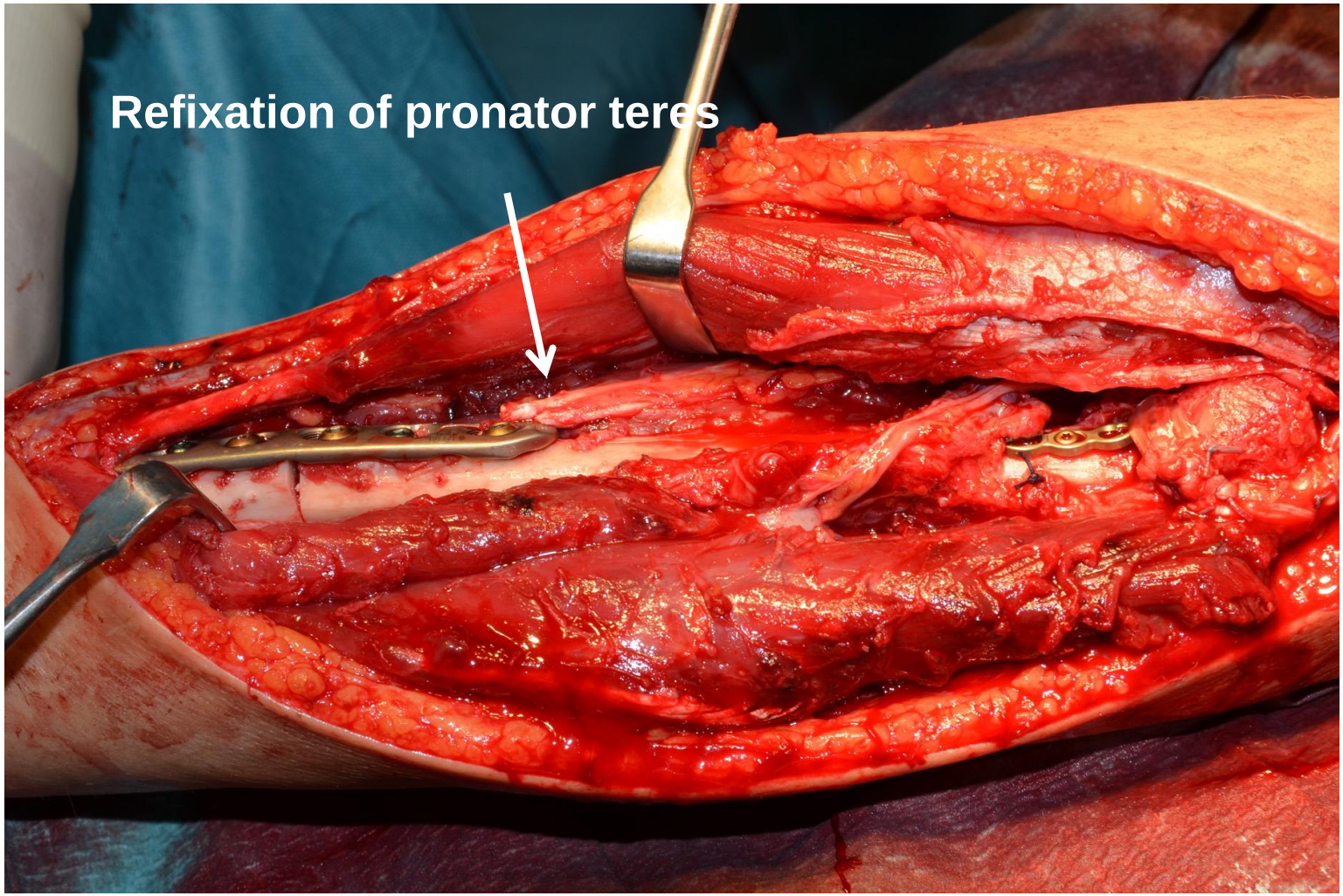
sarkom board
Hochspezialisierte Medizin (HSM)

Surgery: Sept. 5, 2012



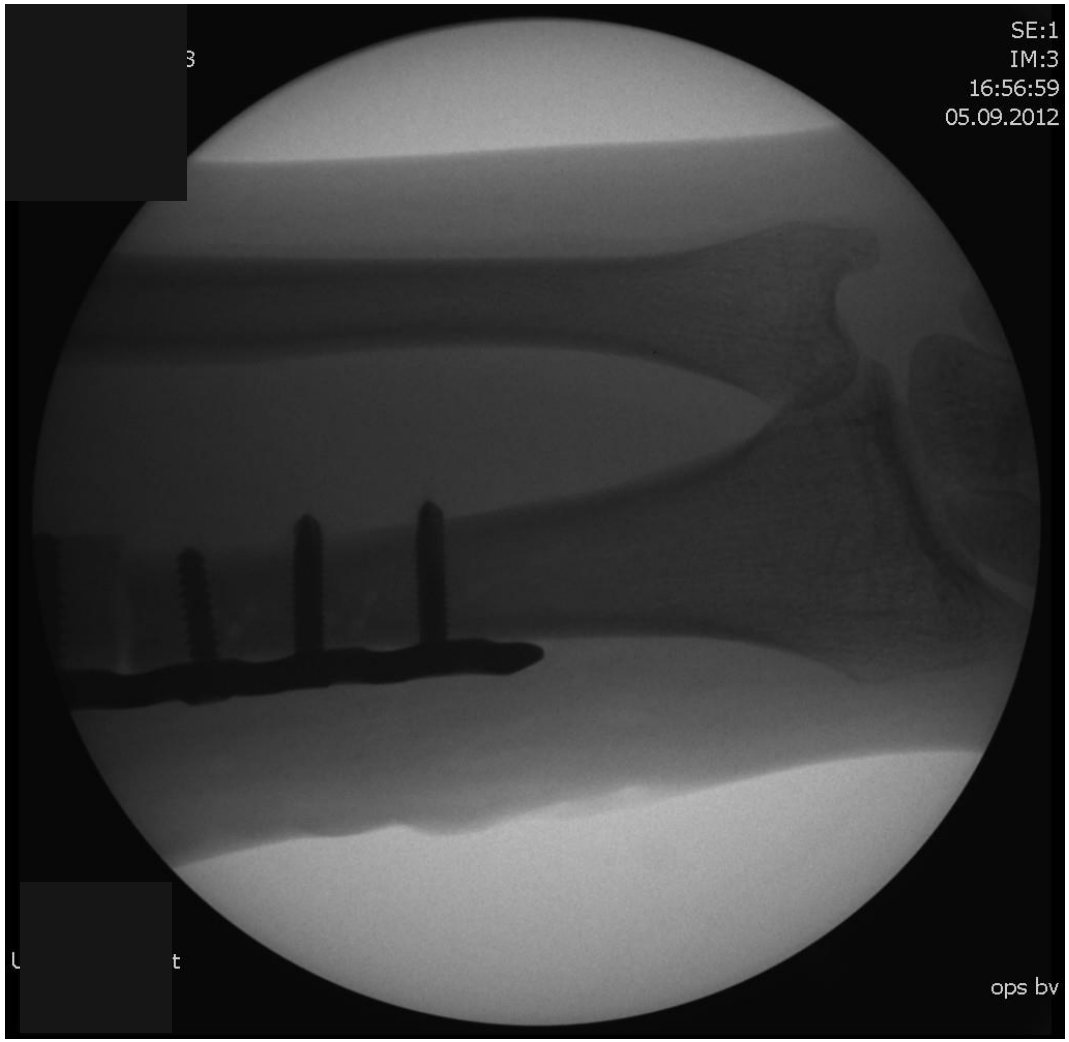
SarcOmaSurgery

forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012



forearm; proximal radius resection; fibula

Surgery: Sept. 5, 2012

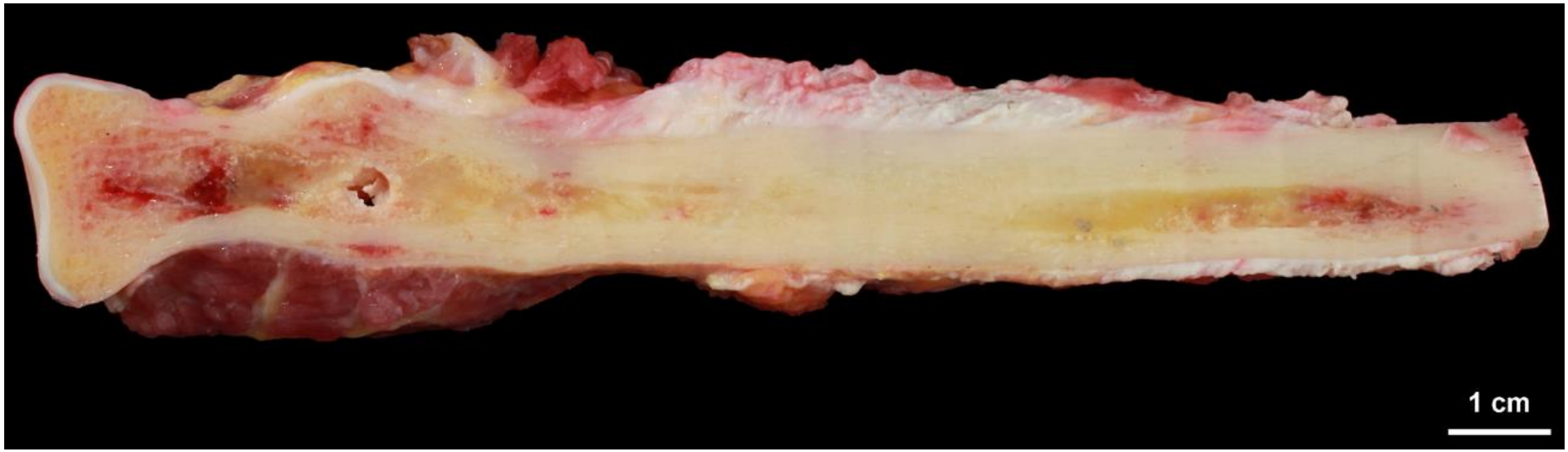


forearm; proximal radius resection; fibula
TEAM APPROACH

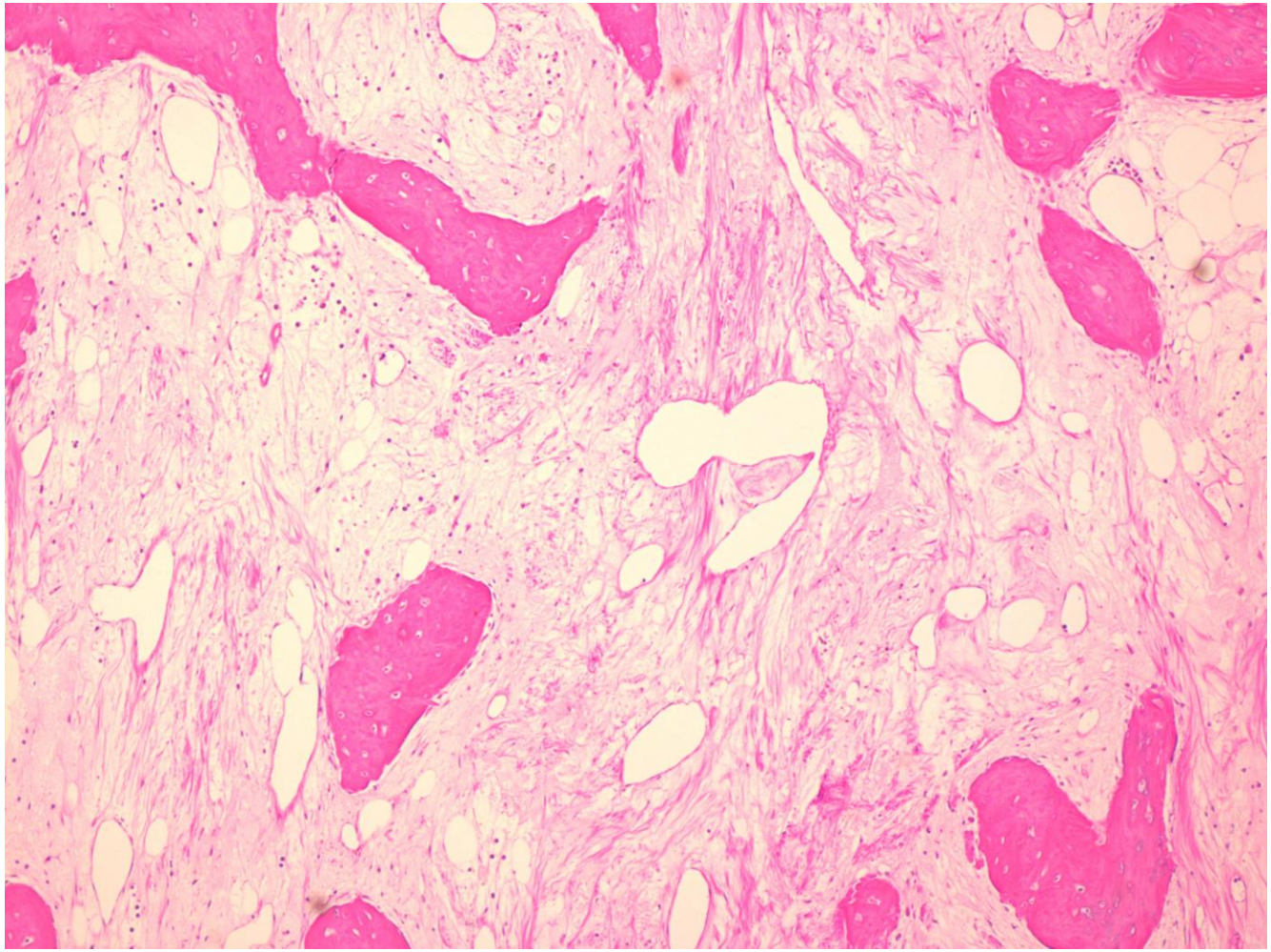
forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012

Klinische Angaben
Ewing-Sarkom proximal Radius links. Status nach neoadjuvanter Chemotherapie (VIDE-Schema).
6 Zyklen 25.4.12 - 20.8.12. Biopsieentnahme durch Bursa bicibitalis.
Resektionsränder? Regressionsgrad?

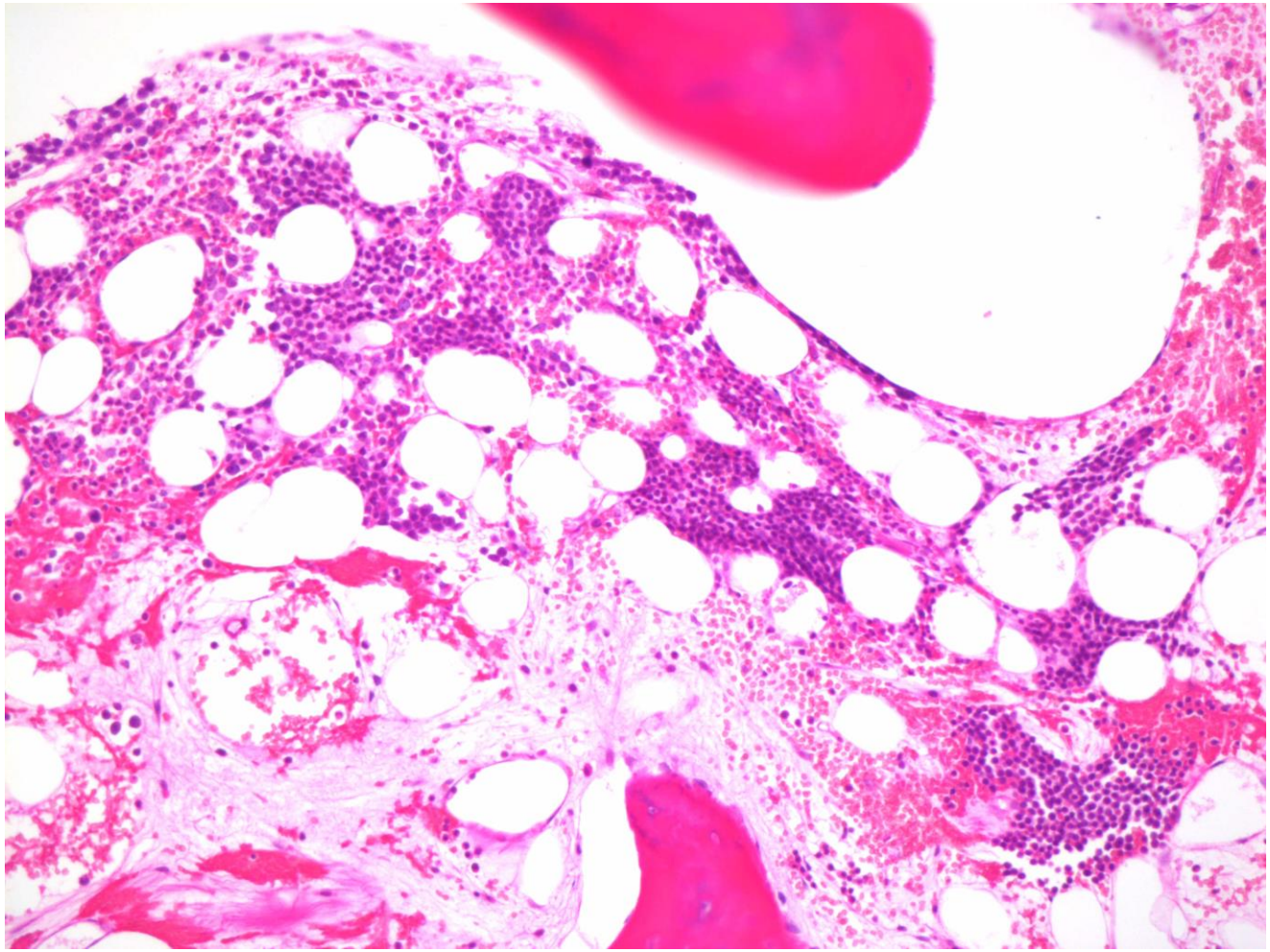
Angaben zur Probe
Prox. Radius links



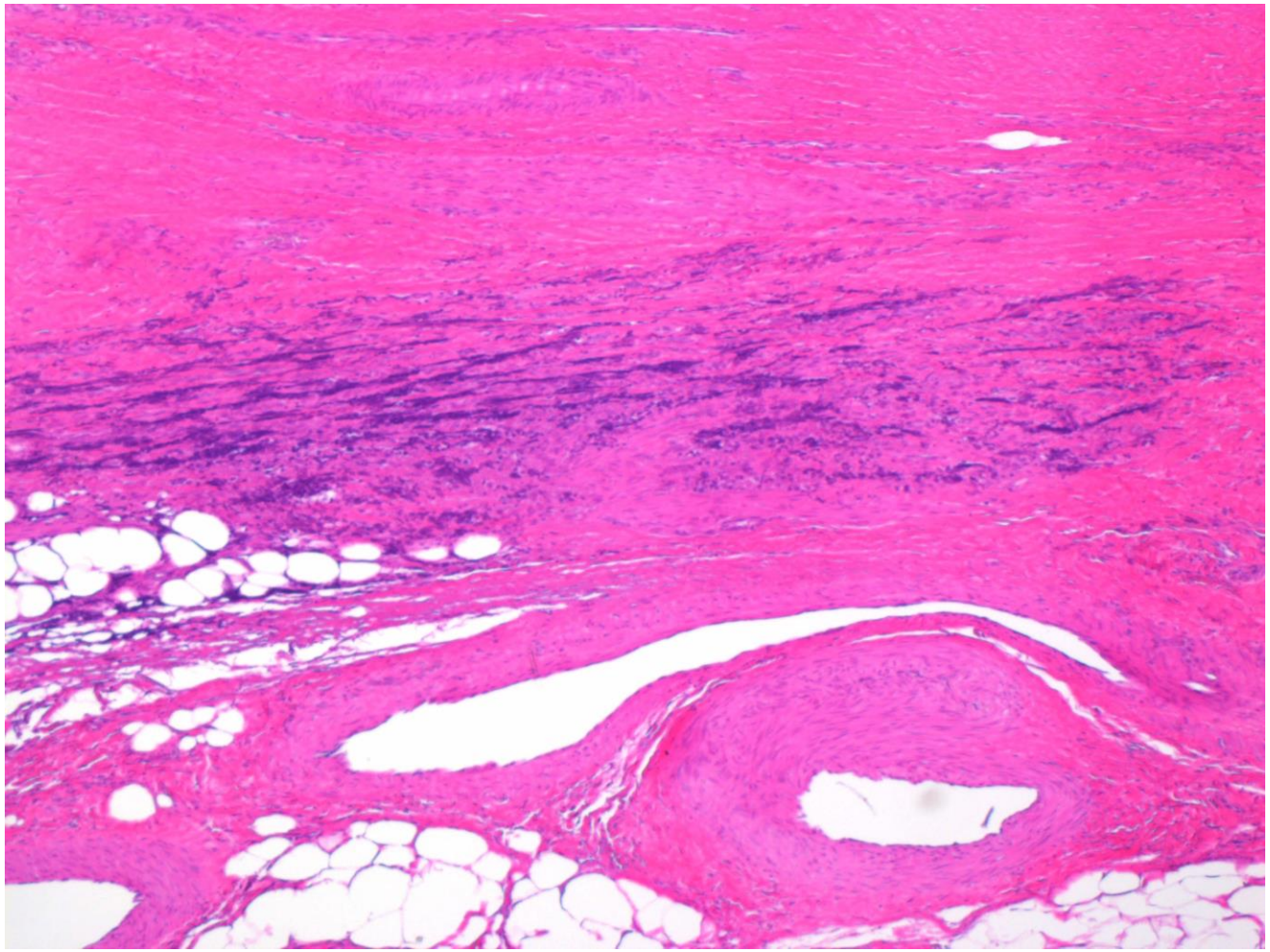
forearm; proximal radius resection; fibula
Surgery: Sept. 5, 2012



forearm; proximal radius resection; fibula surgery September 05, 2012



forearm; proximal radius resection; fibula surgery September 05, 2012



forearm; proximal radius resection; fibula path report Sept. 5, 2012

Diagnose

Resektat des proximalen Radius links mit Ewing-Sarkom bei St. n. vorausgegangener Chemotherapie: wenige, mikroskopisch kleine, vitale Restinfiltrate (deutlich weniger als 5% der ehemaligen Tumorschnittfläche) des vordiagnostizierten Ewing-Sarkoms periostal, entlang der Diaphyse (vgl. Kommentar). Resektion im Gesunden mit tumorfreien Weichteil- und Knochenresektionsrändern mit minimalem Abstand zum zirkumferentiellen Resektionsrand der Weichteile ventrolateral in der Mitte der resezierten Diaphyse von 10 mm.

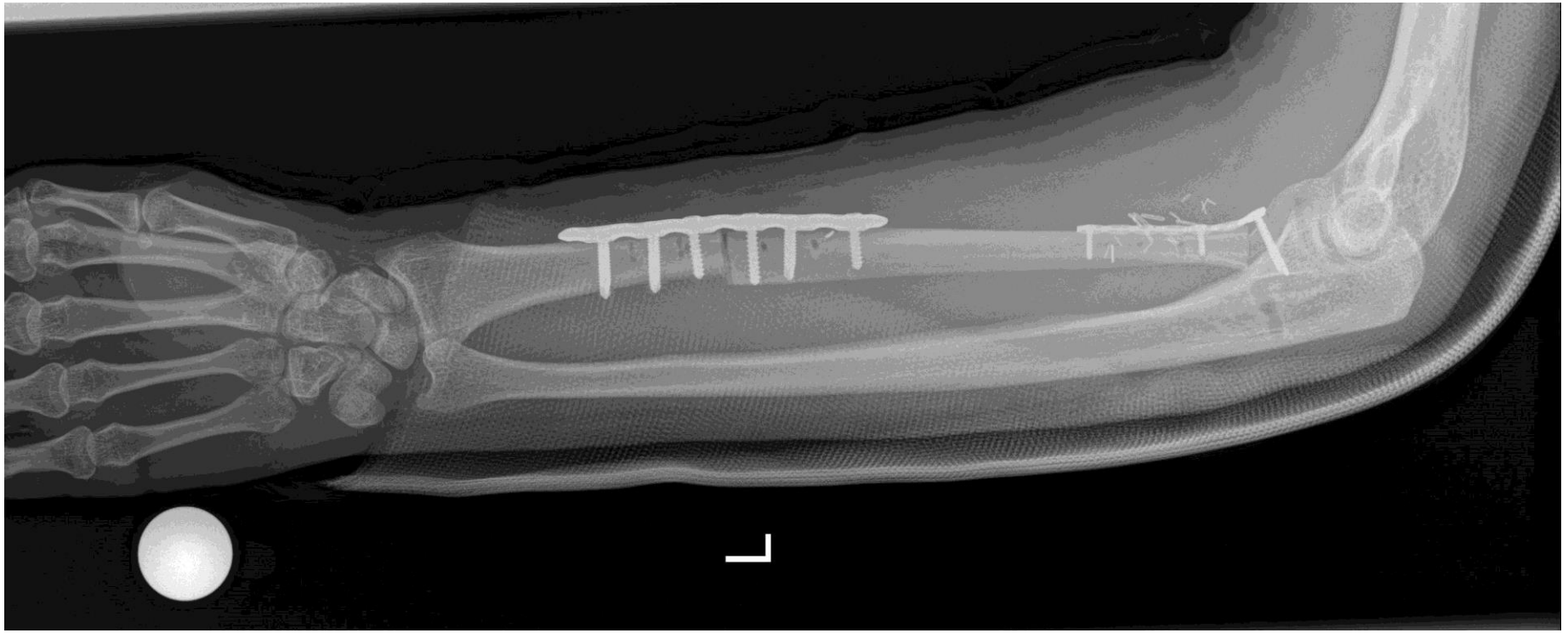
Kommentar

Das Tumorgewebe zeigt ausgeprägte Regressionszeichen mit vitalen Infiltraten ausschliesslich periosteal, entlang der Diaphyse (weniger als 5% der ursprünglicher Tumorschnittfläche).

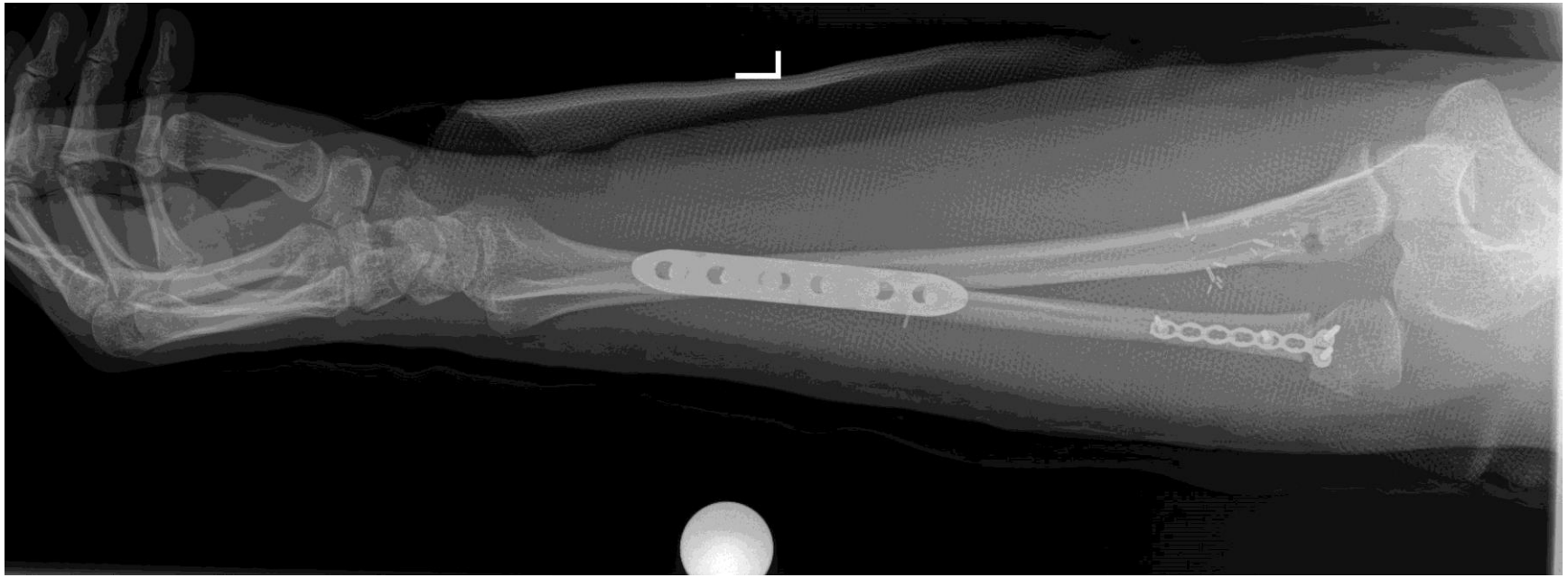
Gemäss Picci handelt es sich um Grad 1 der Chemotherapie-Antwort, da die mehren mikroskopisch kleinen, vitalen Herde des Tumors zusammengesetzt den Durchmesser des 10x Objektives übersteigern.

forearm; proximal radius resection; fibula
Clinical pics: Sept. 7, 2012

forearm; proximal radius resection; fibula
Postoperative x-rays: Sept. 13, 2012

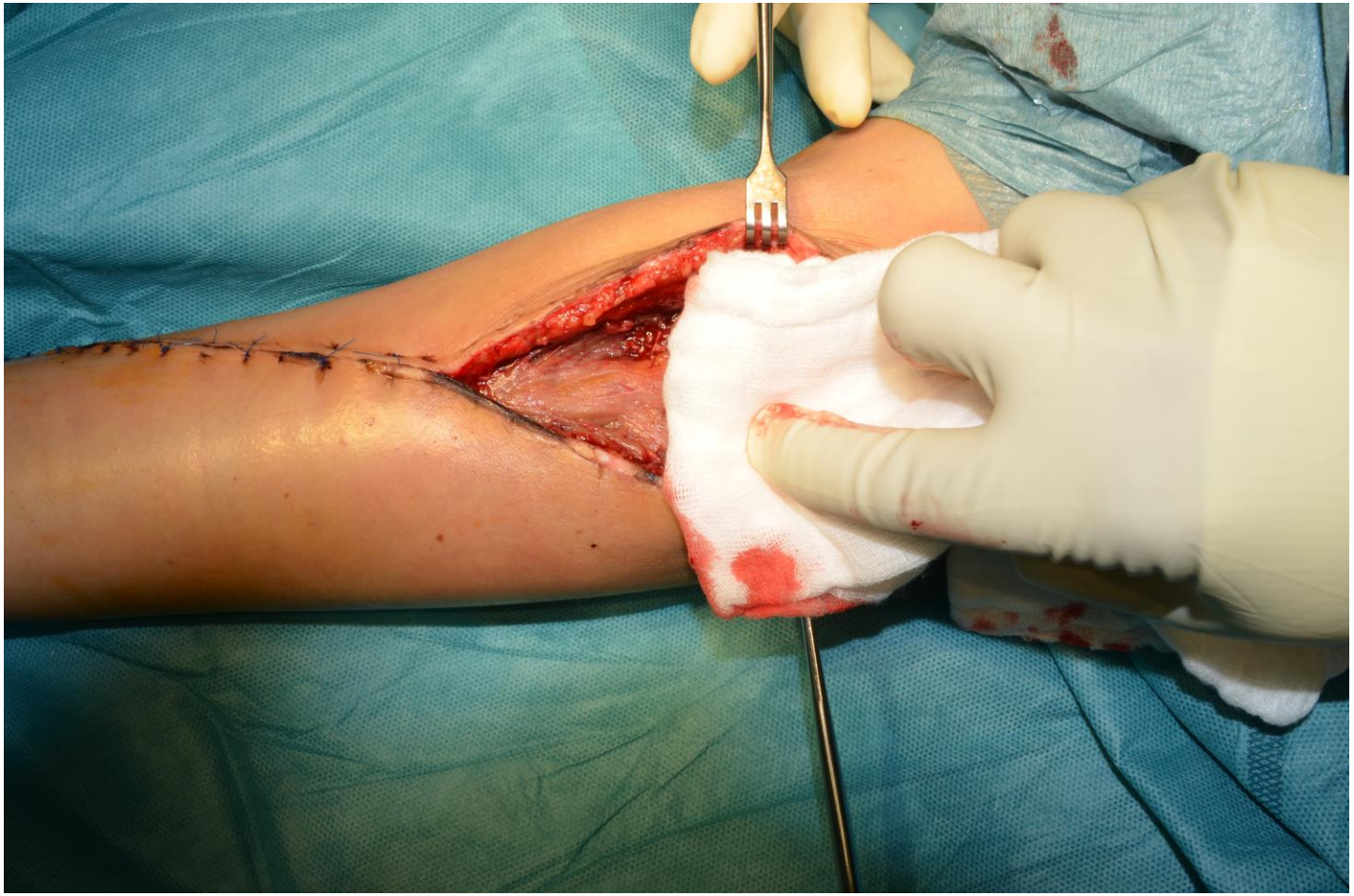


forearm; proximal radius resection; fibula
Postoperative x-rays: Sept. 13, 2012



forearm; proximal radius resection; fibula

Revision with functional testing and debridement: Sept. 17, 2012



forearm; proximal radius resection; fibula

Revision with functional testing and debridement: Sept. 17, 2012

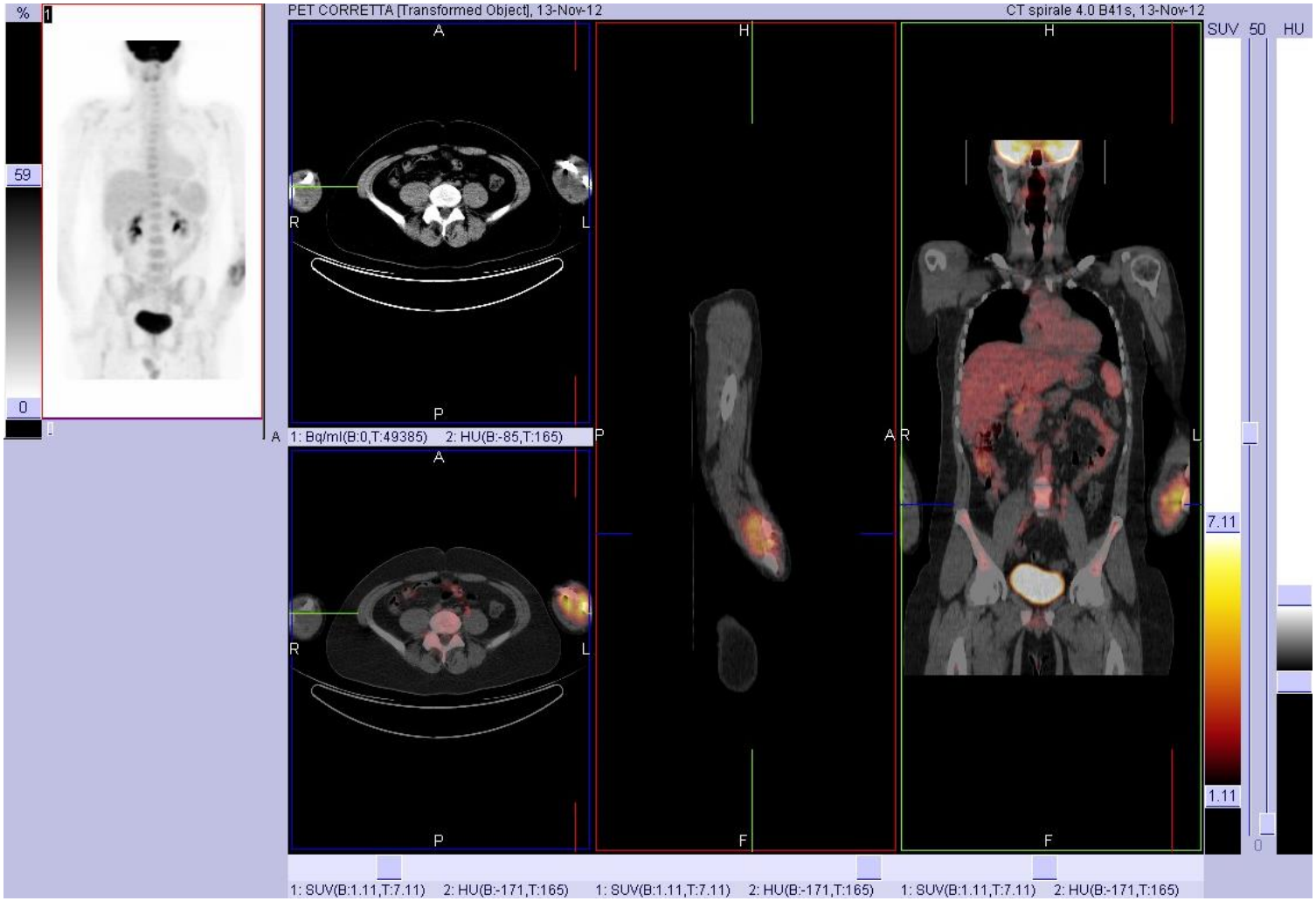
forearm; proximal radius resection; fibula
Postoperative x-rays: Sept. 19, 2012

forearm; proximal radius resection; fibula
Sarcoma- Board: Sept. 27, 2012

- It is planned that the patient receives high-dose chemotherapy (beginning 9/27/12)
- Stem cell collection is provided as an option
- Radiotherapy is not used due to the negative margin

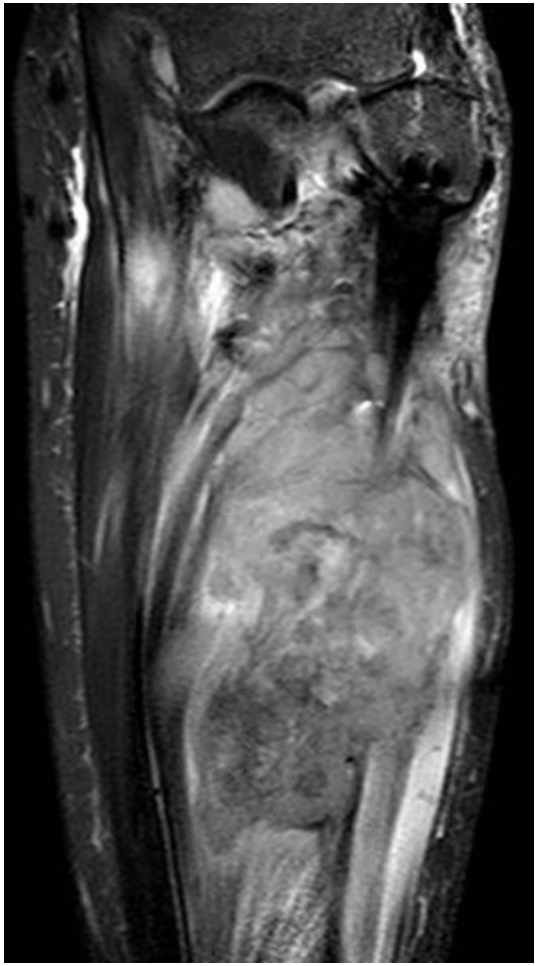
forearm; proximal radius resection; fibula

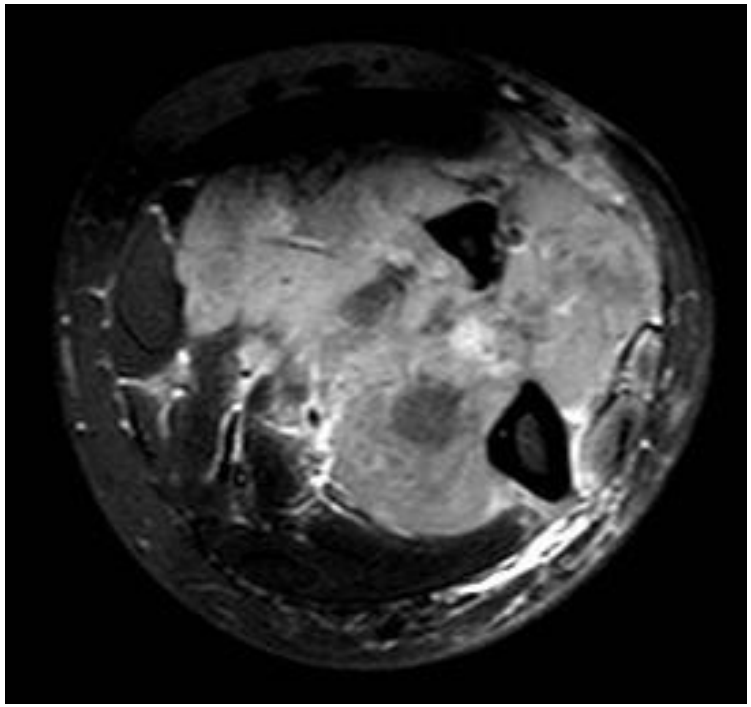
PET/CT: Nov. 13, 2012



SarcomaSurgery

forearm; proximal radius resection; fibula
MRI left forearm: Nov. 22, 2012





forearm; proximal radius resection; fibula
Clinical Pics: Nov. 23, 2012

SarcomaSurgery

forearm; proximal radius resection; fibula
Clinical Pics: Nov. 23, 2012

forearm; proximal radius resection; fibula
Clinical Pics: Nov. 23, 2012

SarcOmaSurgery

forearm; proximal radius resection; fibula US-guided biopsy: Nov. 23, 2012

SarcomaSurgery

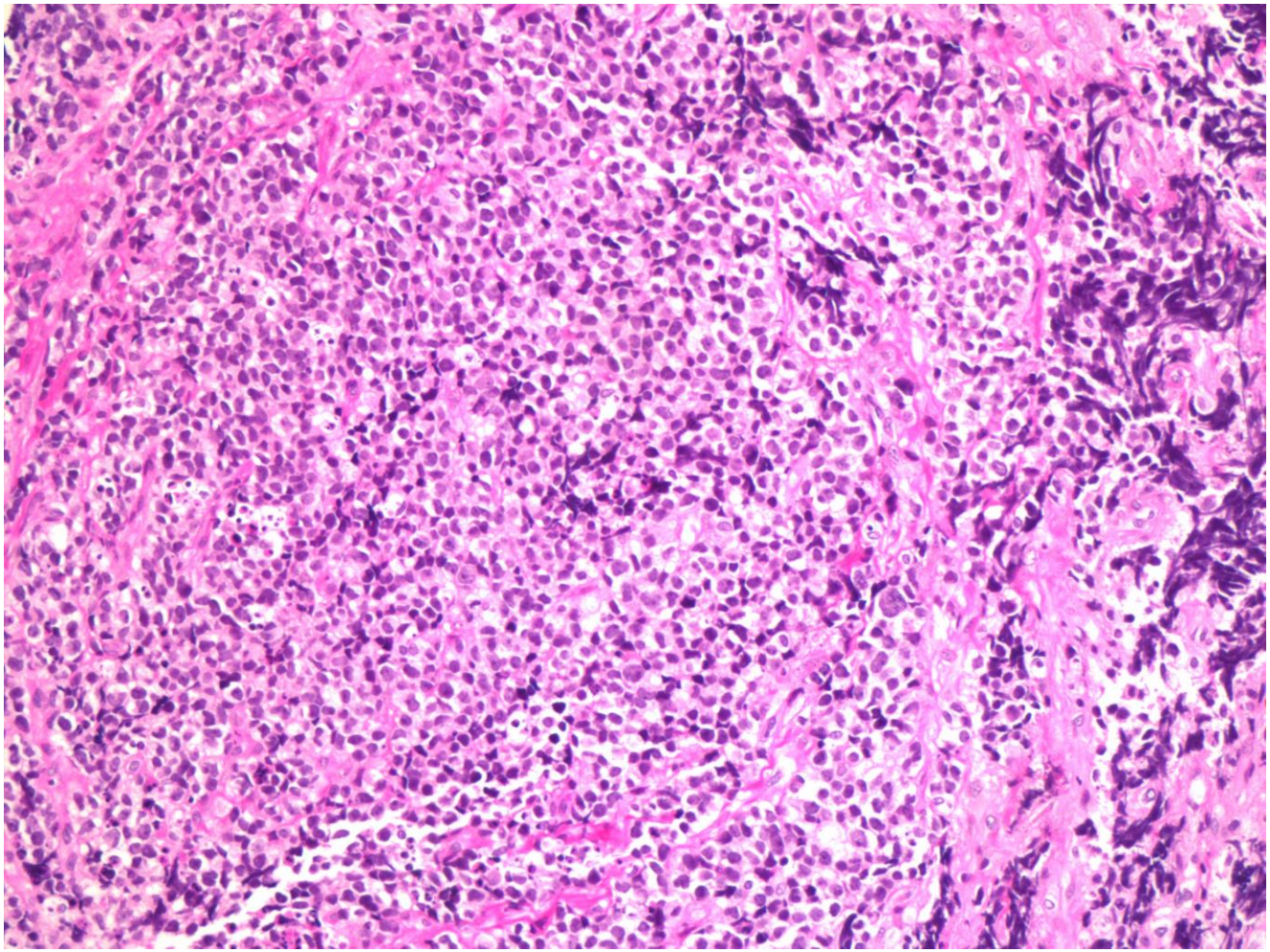
forearm; proximal radius resection; fibula
Result US-guided biopsy: Nov. 23, 2012

Klinische Angaben
Vd.a. Ewing-Sarkom-Rezidiv.

Angaben zur Probe
Unterarm links (siehe MRI-Bild)

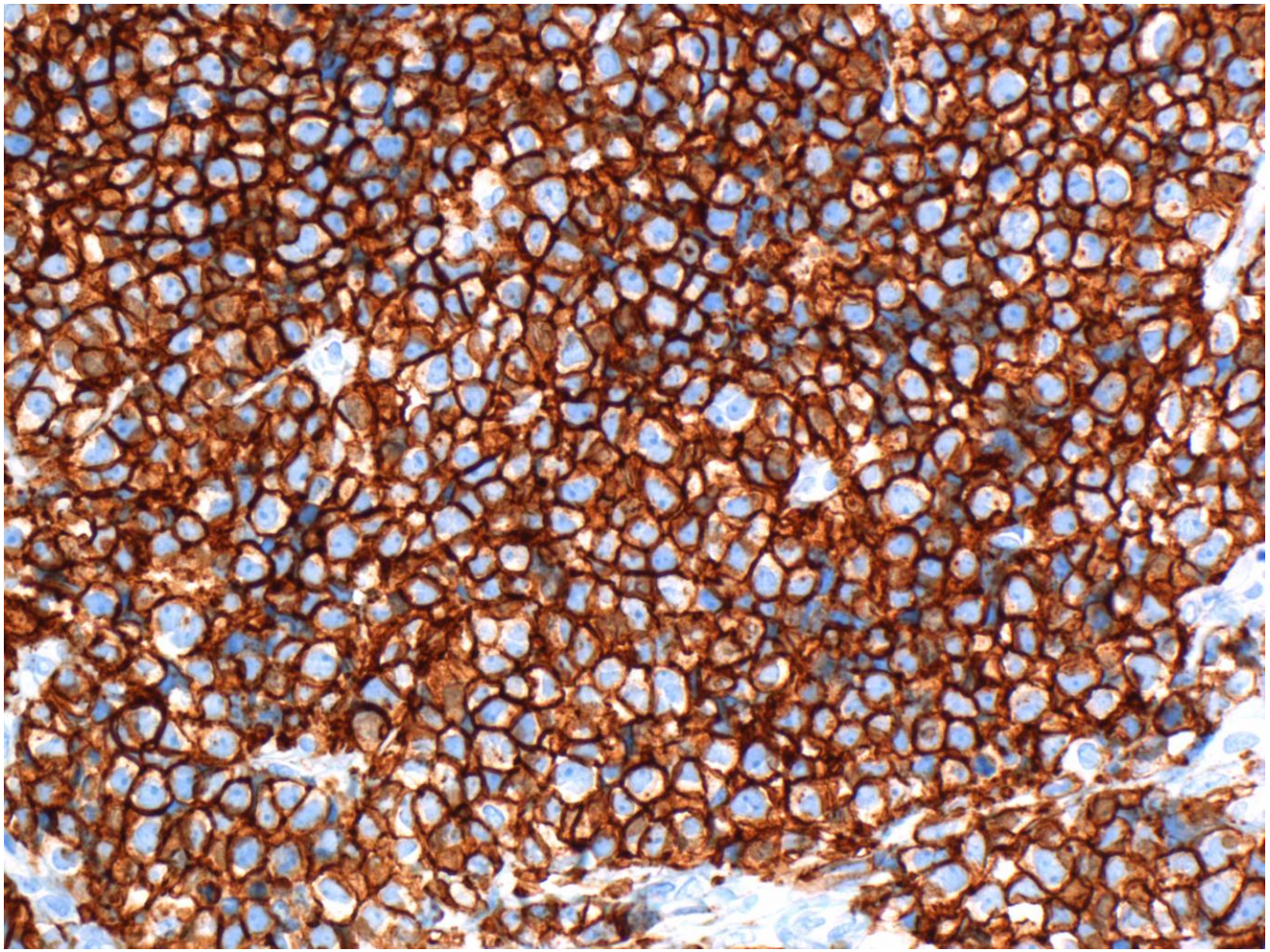
Makroskopischer Befund
Zwei beige feine Stanzen von 18mm Länge BLE/baumn

forearm; proximal radius resection; fibula
Result US-guided biopsy: Nov. 23, 2012

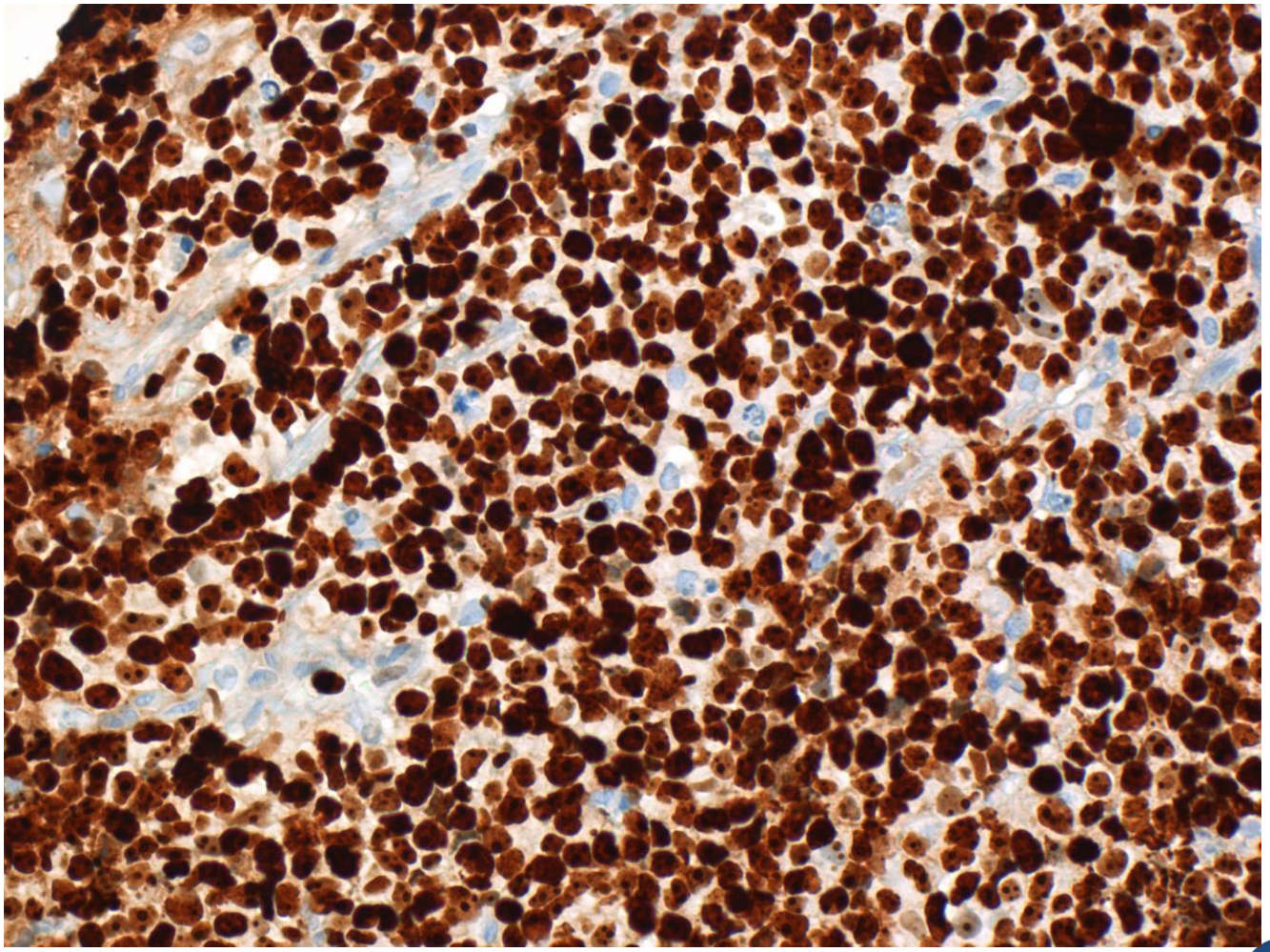


forearm; proximal radius resection; fibula

Result US-guided biopsy: Nov. 23, 2012



forearm; proximal radius resection; fibula
Result US-guided biopsy: Nov. 23, 2012



forearm; proximal radius resection; fibula
Result US-guided biopsy: Nov. 23, 2012

Diagnose
Manifestation (Rezidiv) des bekannten Ewing-Sarkoms (Unterarm links).

forearm; proximal radius resection; fibula
Result US-guided biopsy: Nov. 23, 2012

- **If radiotherapy: local palliative situation**
- **Chemotherapy: Contacting Euro Ewing Germany**
- **The surgical treatment is planned for clarification of the above-mentioned recommendations**

forearm; proximal radius resection; fibula

Clinical pics: Follow –up: January 08, 2013

SarcOmaSurgery

forearm; proximal radius resection; fibula

Patient dies on April 22, 2013