

Shoulder; Tikhoff-Linberg

♂ 71 yo,

1st referral: July 8, 2013

HPI:

- Increasing pain of right shoulder
- Especially pain at night
- No improvement with physiotherapy

PMH:

- Dyslipidemia

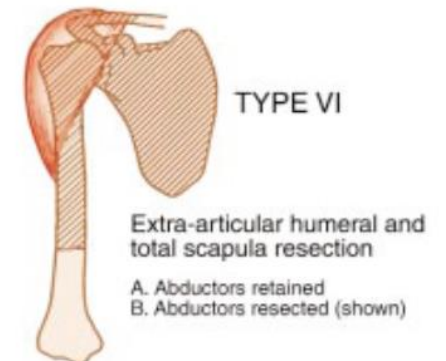
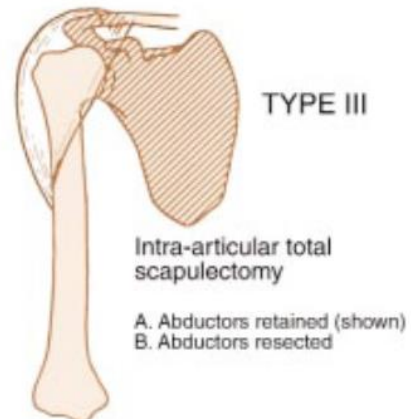
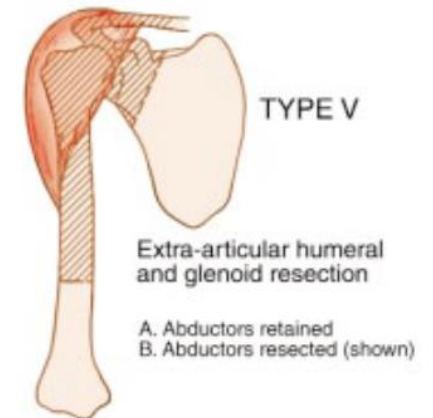
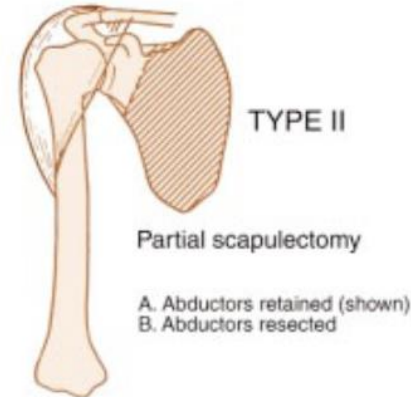
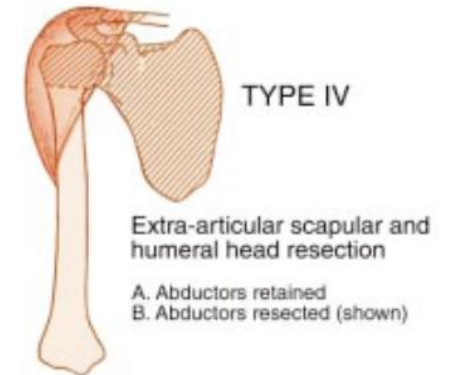
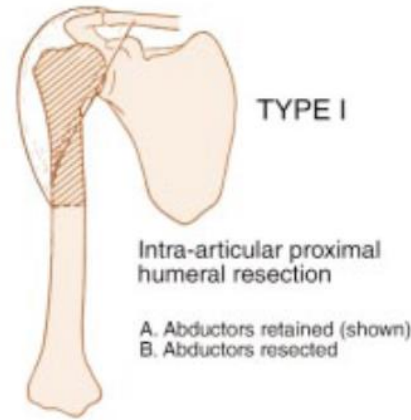
• **WITNESS JEHOVAH !!!**

(→ absolutely no blood/products at all!)

axillary nerve?

intra- / transarticular?

level of OT & abductor?



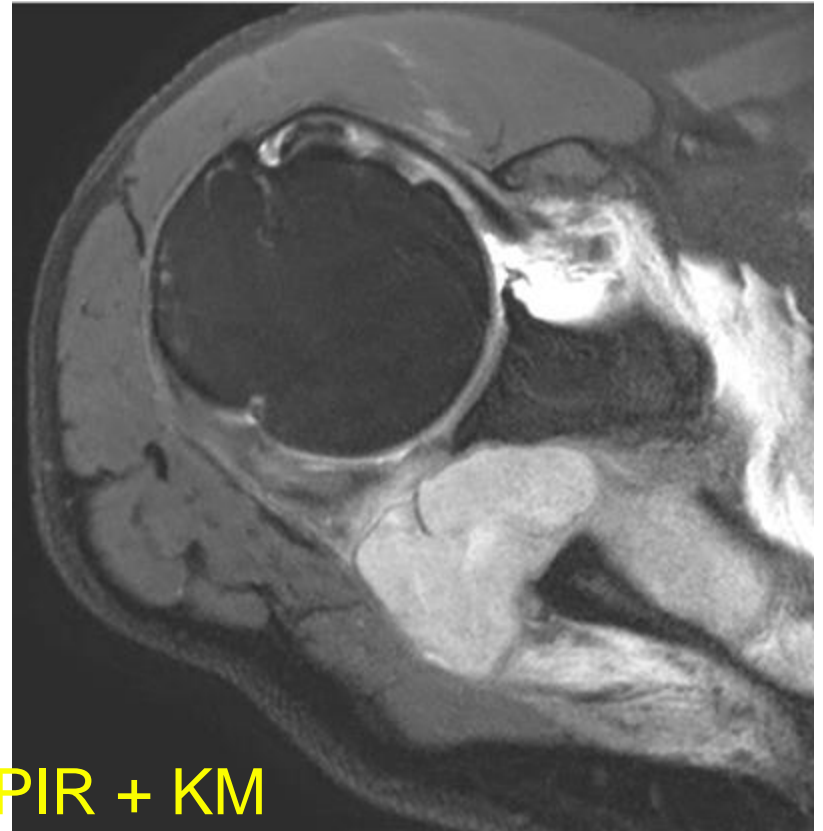
Shoulder; Tikhoff-Linberg

Clinical findings:

- Slightly decreased shoulder ROM (flexion), otherwise symmetrical
- Jobe-Test painful, positive lift-off

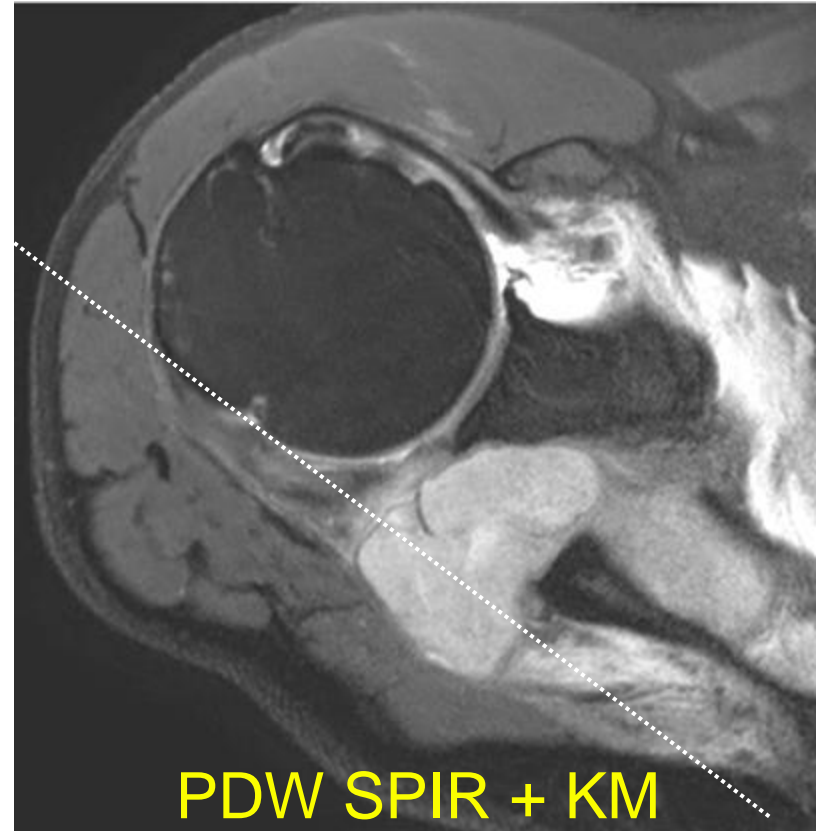
Shoulder; Tikhoff-Linberg

MRI April 12th 2013



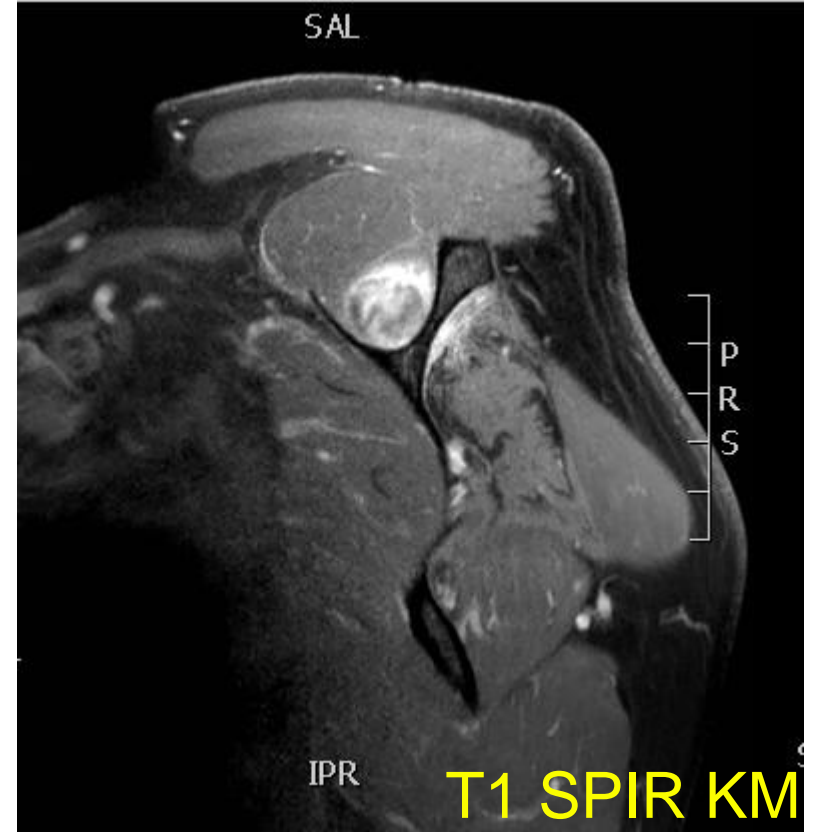
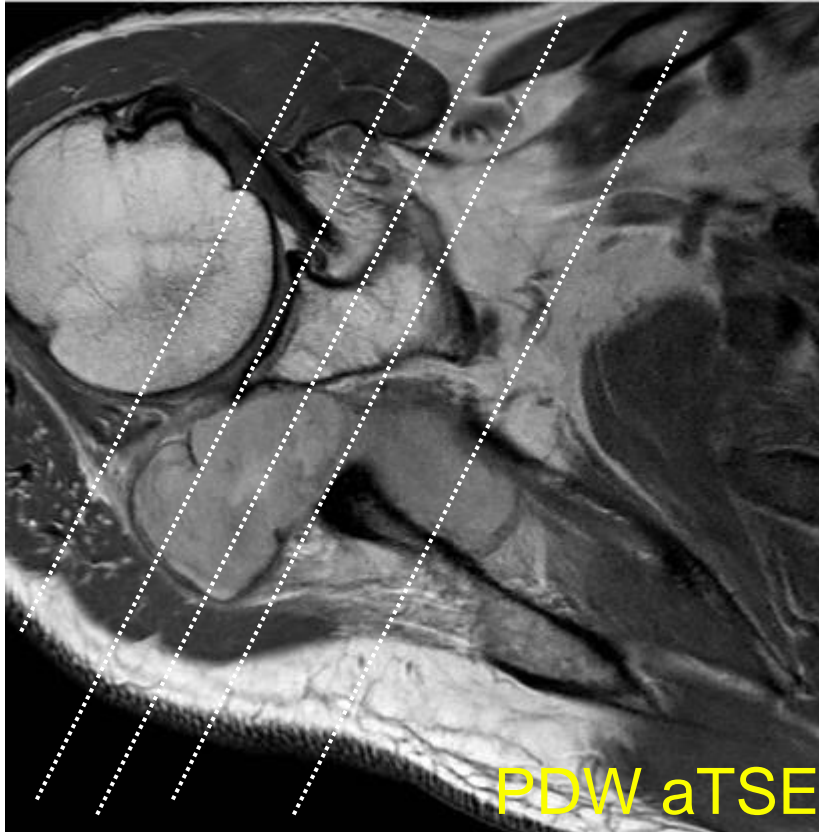
PDW SPIR + KM

Shoulder; Tikhoff-Linberg MRI April 12th 2013



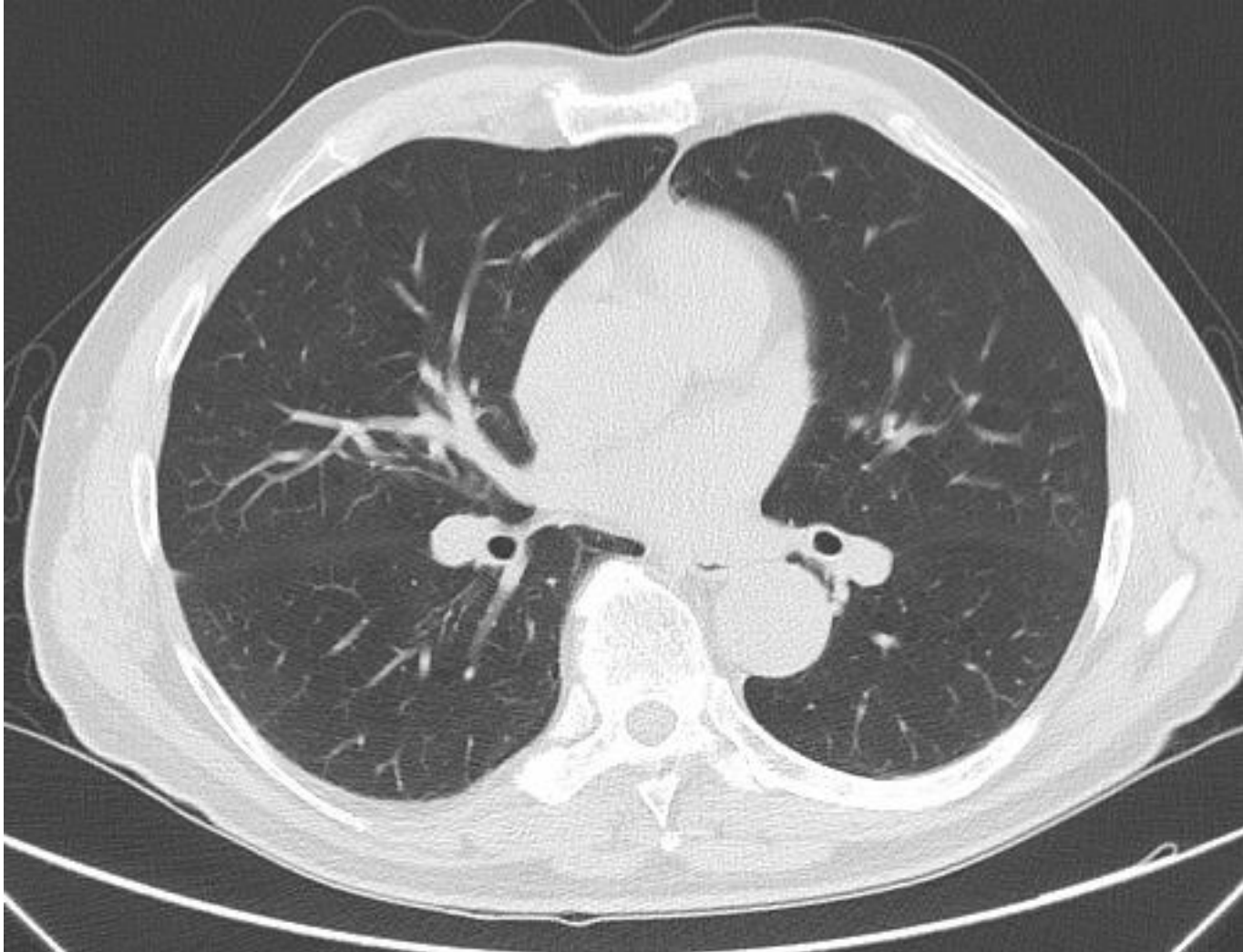
Shoulder; Tikhoff-Linberg

MRI April 19th 2013



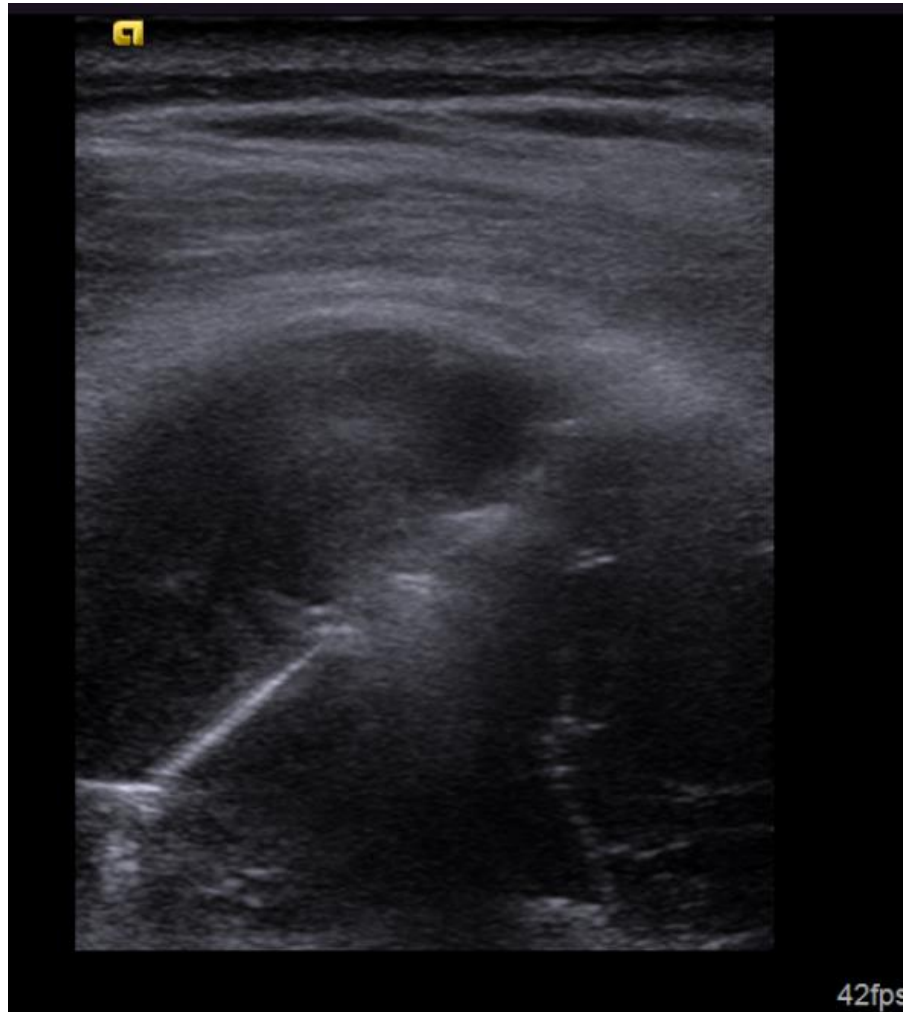
Shoulder; Tikhoff-Linberg

CT Chest July 18, 2013



no evidence of metastasis

Shoulder; Tikhoff-Linberg Biopsy July 18th 2013



Shoulder; Tikhoff-Linberg

Biopsy July 18th 2013

Diagnose (nach Abschluss der mdm2 FISH)

Stanzylinder (M. infra-/supra-spinatus rechts) mit Anteilen eines teils spindelzelligen, teils pleomorphzelligen Sarkoms. Siehe Kommentar.

Codierung

B 2013.37698: P11410 (Exzizat);T1X000; M88003

Klinische Angaben

Unklare, teils zystische, teils solide Läsion retroskapulär rechts.
Diagnose? Malignität? Sarkom?

Angaben zur Probe

3 Zylinder M. infra-/supra-spinatus rechts

Makroskopischer Befund

4 Weichteilexzisate, gelb, beige, 3 cm, 2,5 cm, 2 cm, 1,3 cm, je 0,1 cm Durchmesser.
KHVO/sre

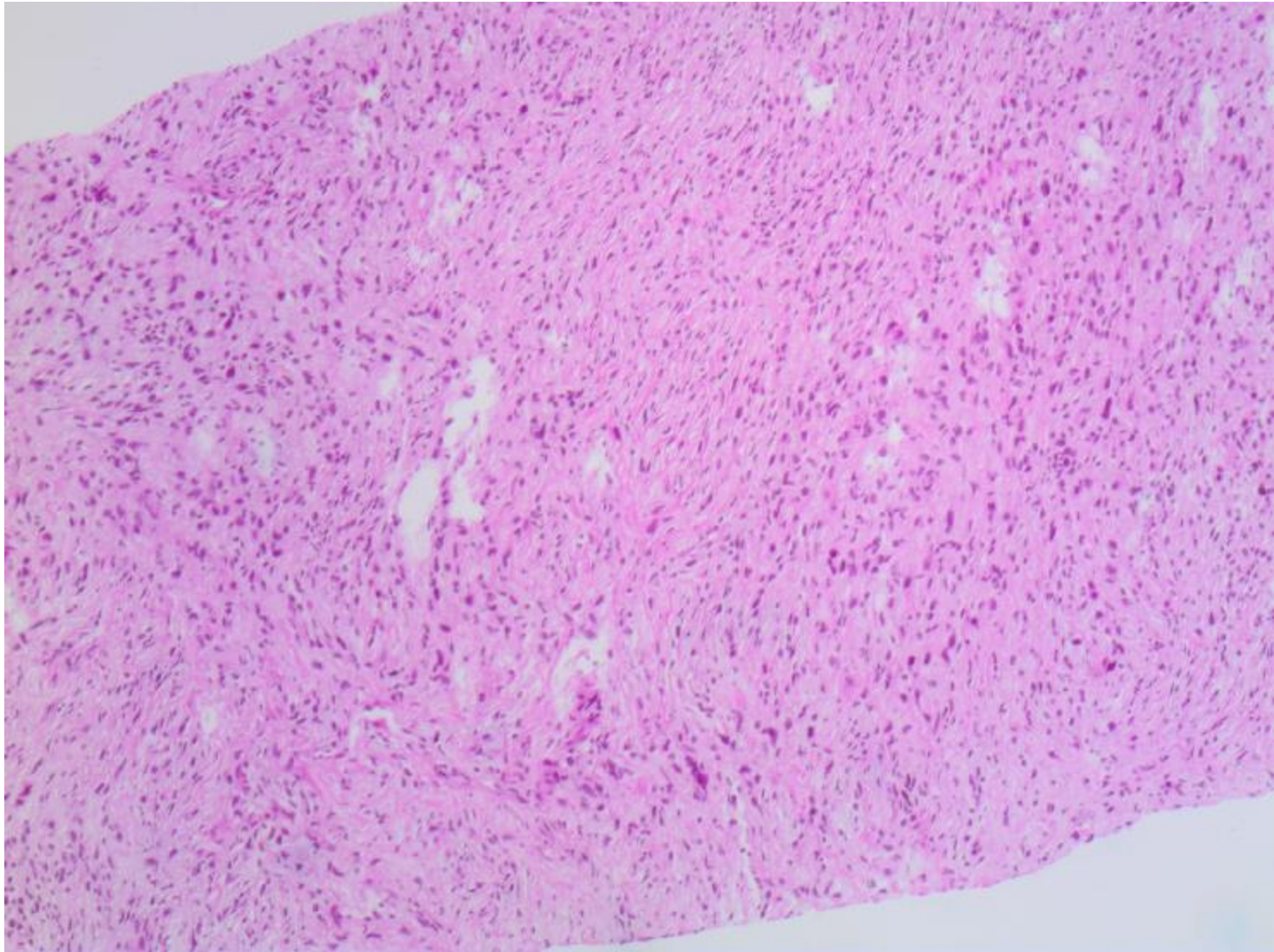
Spezialuntersuchungen

Die **Interphasen-FISH-Untersuchung** wurde mittels einer SPEC MDM2/CEN12 Dual-Color Probe (Zytovision) durchgeführt. Es wurden 60 Zellen analysiert. Die Kerne der Tumorzellen enthalten jeweils 2 mdm2- und CEP12-Signale (keine Amplifikation).

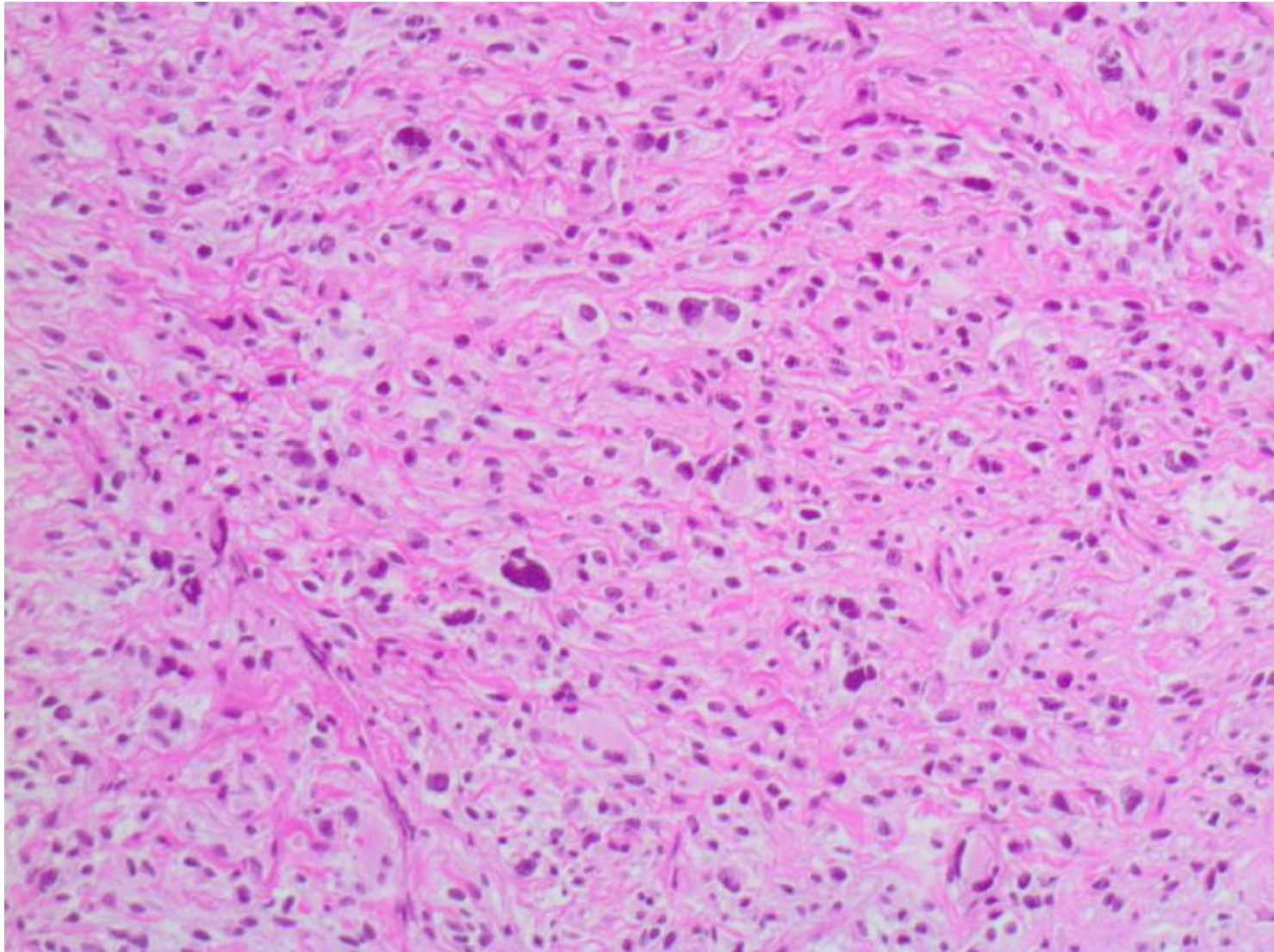
Kommentar

Die mdm2 FISH ist erwartungsgemäss negativ ausgefallen, somit keine Befundänderung.

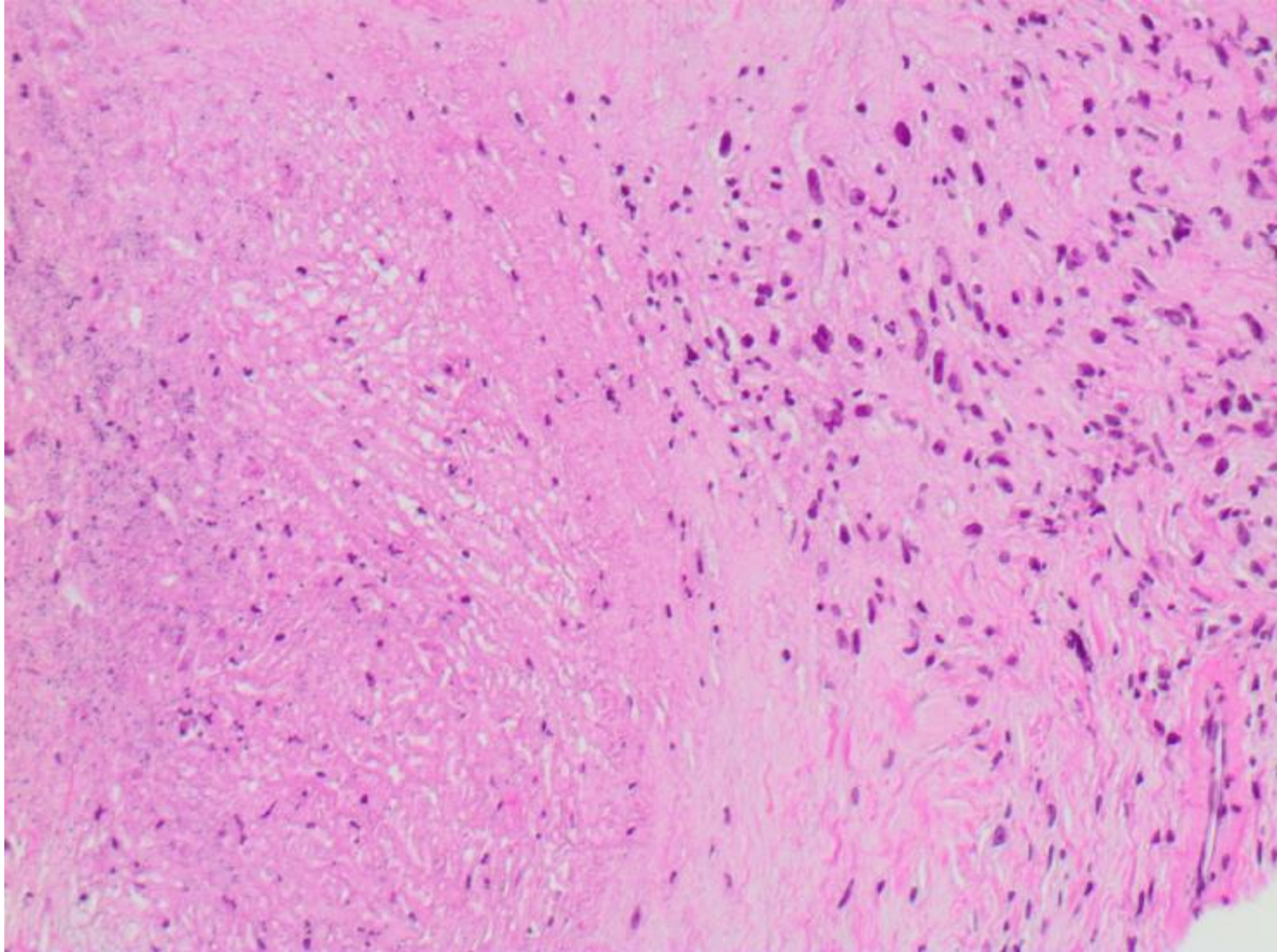
Shoulder; Tikhoff-Linberg



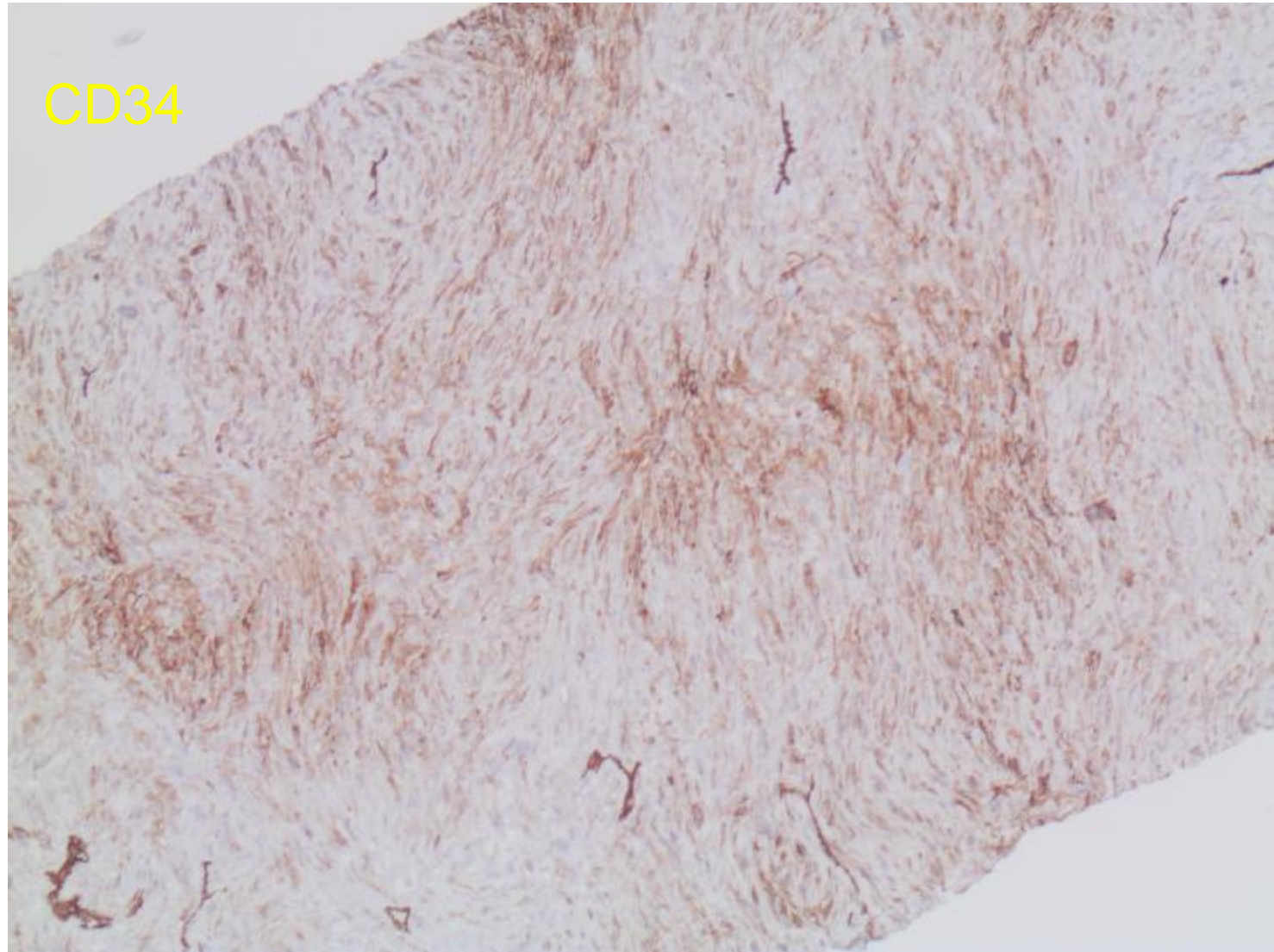
Shoulder; Tikhoff-Linberg



Shoulder; Tikhoff-Linberg

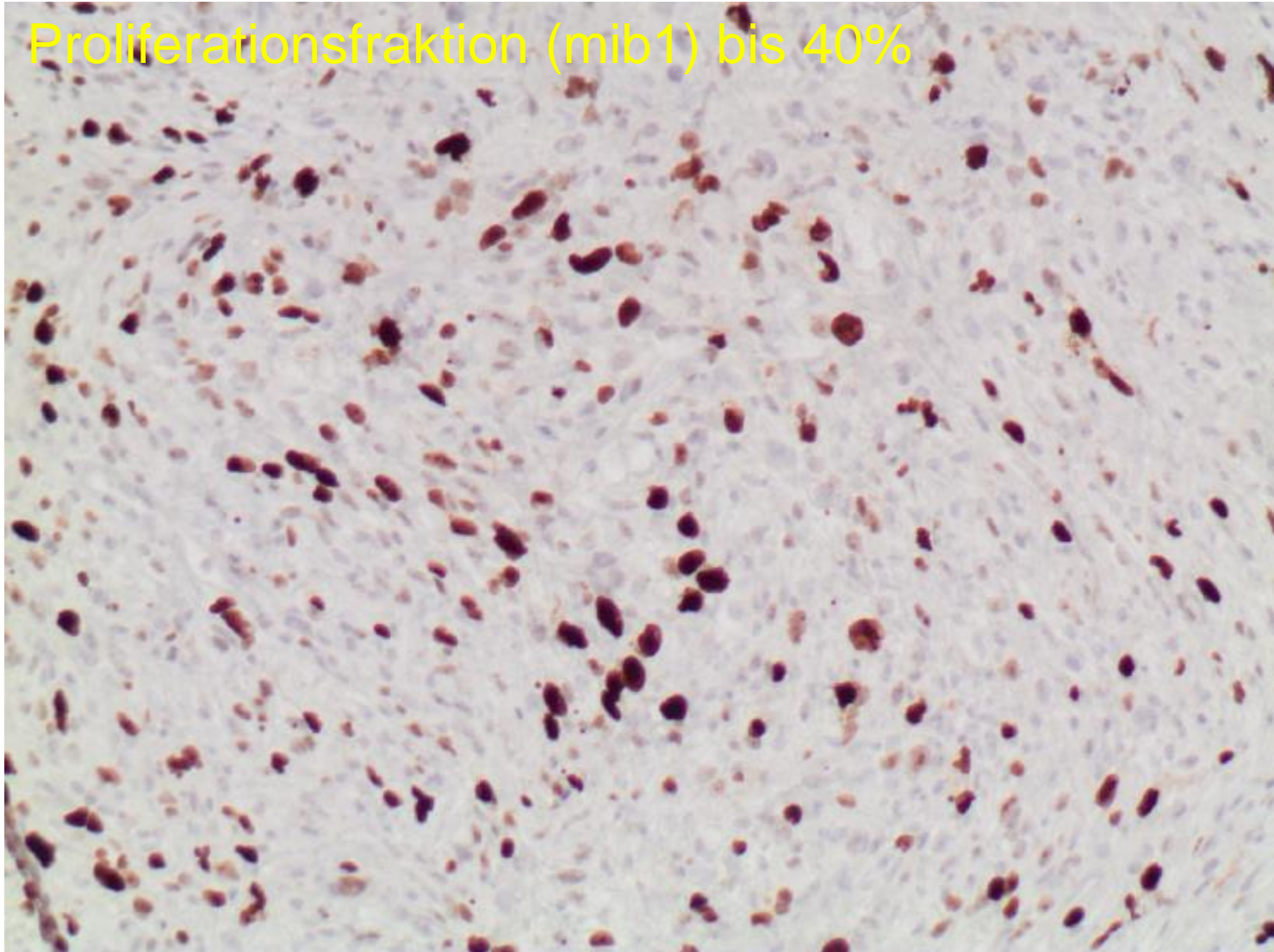


Shoulder; Tikhoff-Linberg



Shoulder; Tikhoff-Linberg

Proliferationsfraktion (mib1) bis 40%



Shoulder; Tikhoff-Linberg

Result Biopsy, July 18, 2013

Diagnose

Stanzylinder (M. infra-/supra-spinatus rechts) mit Anteilen eines teils spindelzelligen, teils pleomorphzelligen Sarkoms. Siehe Kommentar.

Codierung

B 2013.37698: P11410 (Exzizat); T1X000; M88003

Klinische Angaben

Unklare, teils zystische, teils solide Läsion retroskapulär rechts.
Diagnose? Malignität? Sarkom?

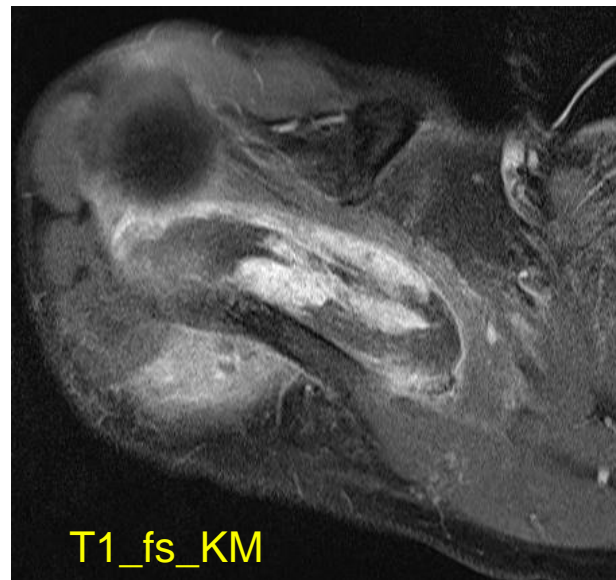
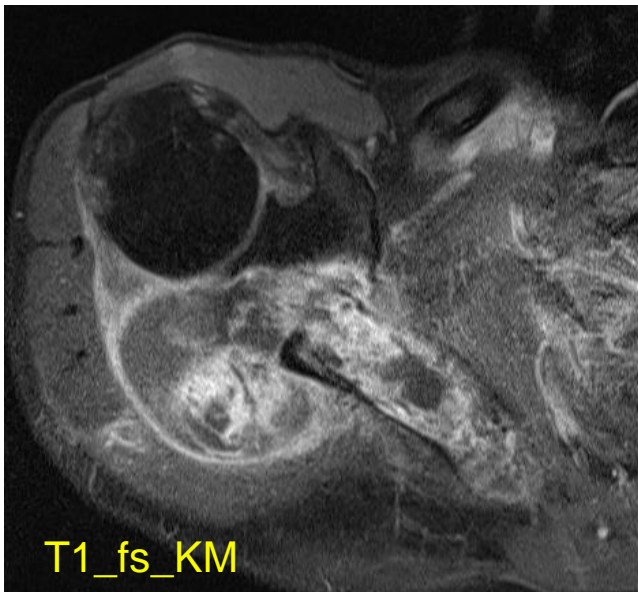
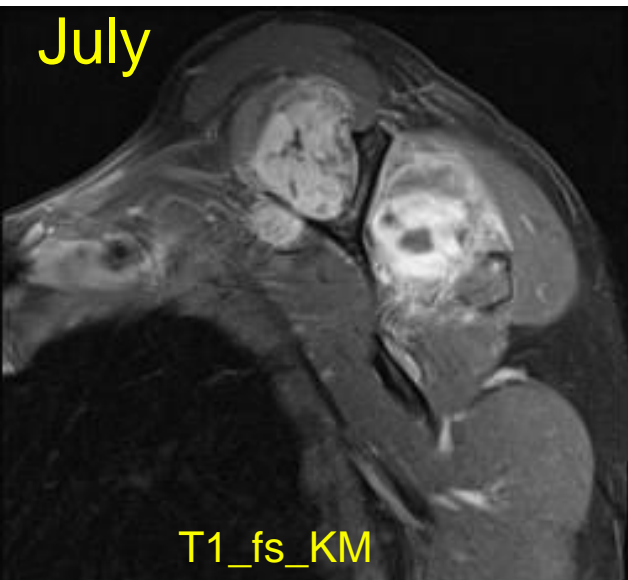
Kommentar

Es handelt sich um ein spindelzelliges, teils pleomorphzelliges Sarkom, das immunhistochemisch keine spezielle Differenzierung erkennen lässt. Differentialdiagnostisch käme ein maligner peripherer Nervenscheidentumor in Betracht. MDM2 wird im Tumor nicht exprimiert. Vollständigkeitshalber wurde jedoch eine FISH zum Ausschluss einer *MDM2* Amplifikation veranlasst (Resultat folgt). Gemäss FNCLCC Klassifikation liegt ein Grad 2 (3,1,1) vor.

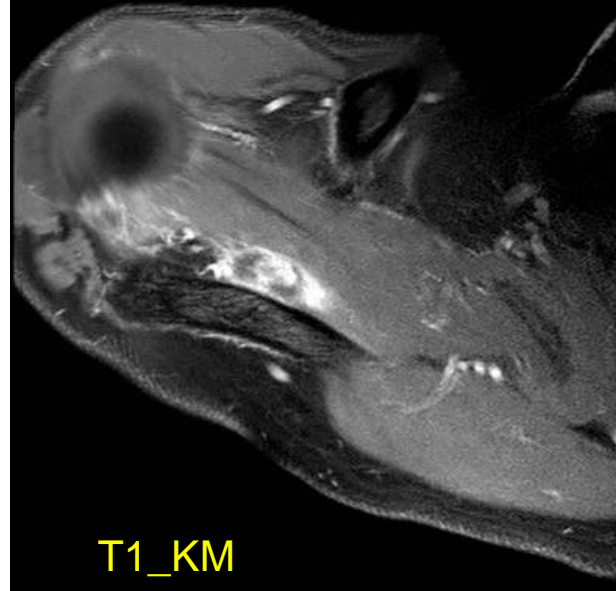
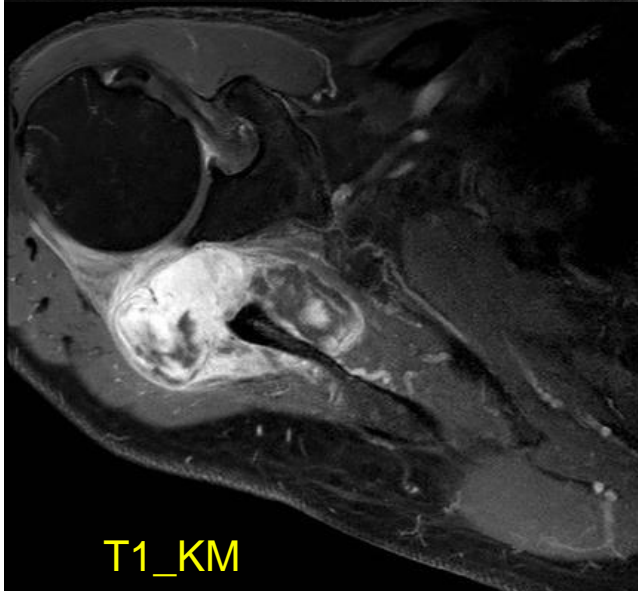
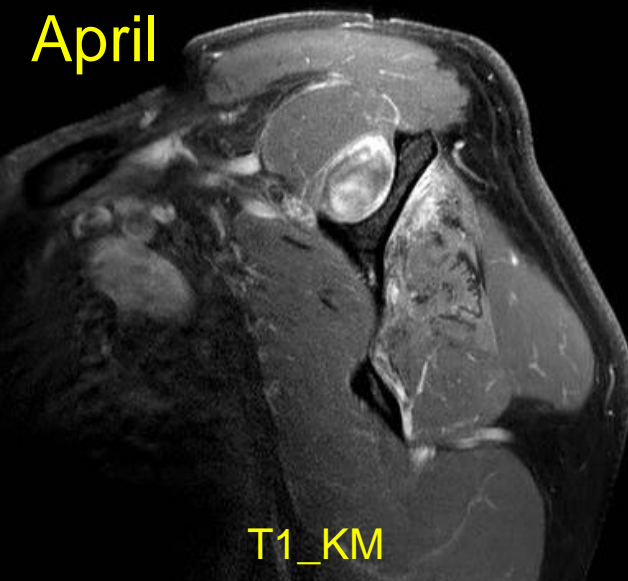
Shoulder; Tikhoff-Linberg

MRI right shoulder, July 25, 2013

July

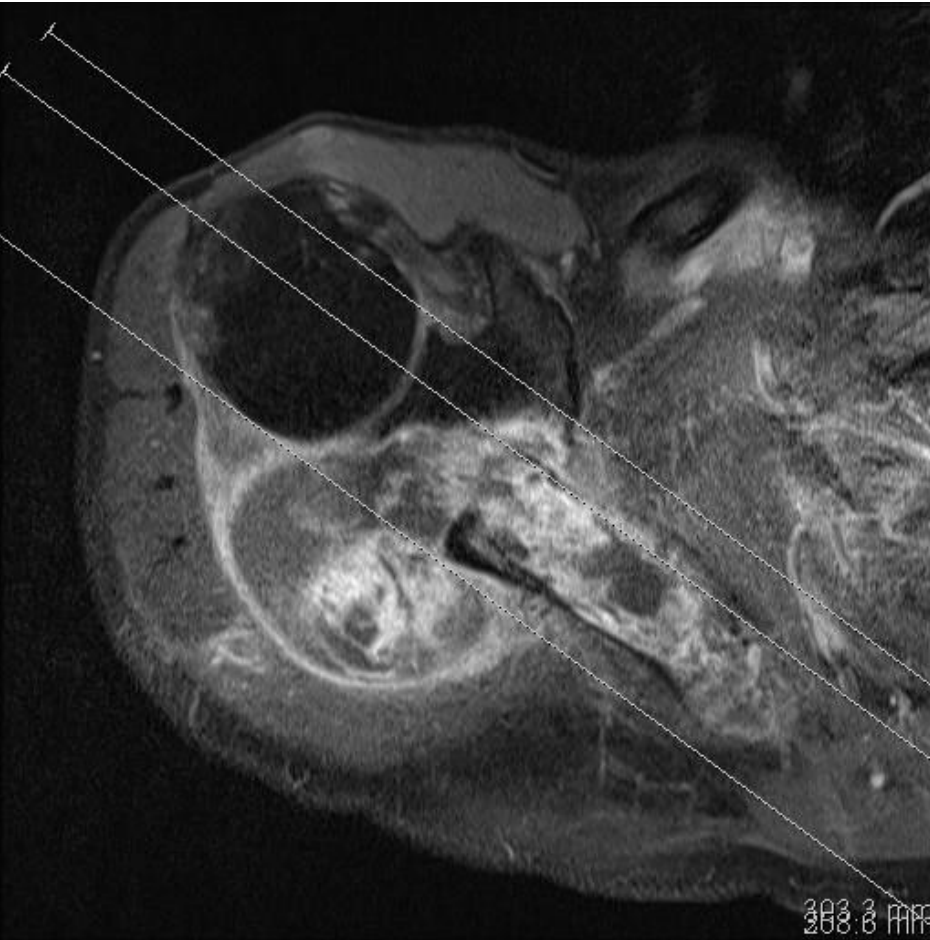


April



Shoulder; Tikhoff-Linberg

MRI right shoulder, July 25, 2013



Shoulder; Tikhoff-Linberg

Sarcoma Board: July 25, 2013

Therapeutic decisions:

Radiotherapy:

Yes, preoperative RT

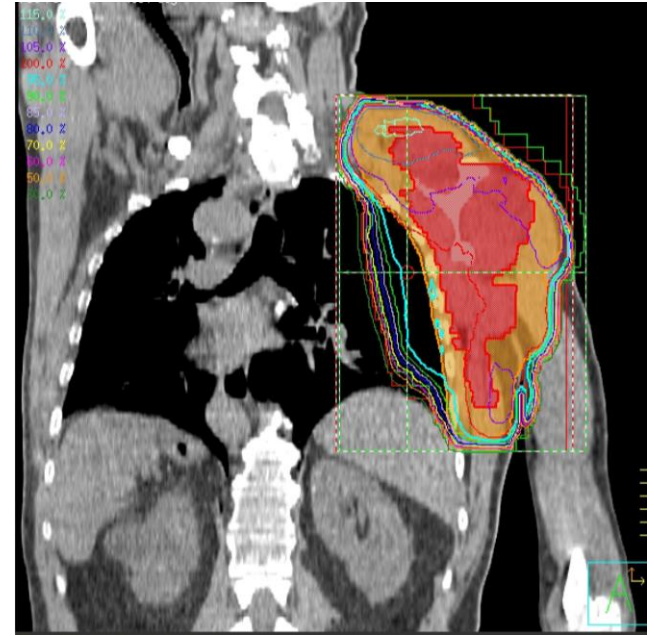
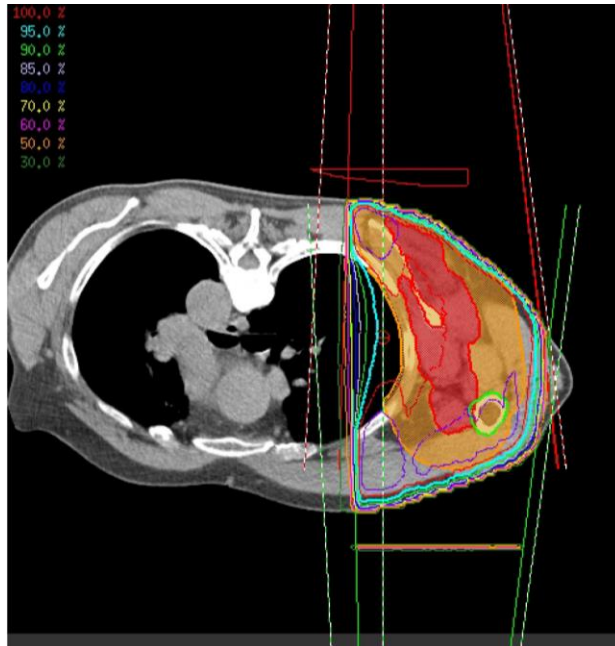
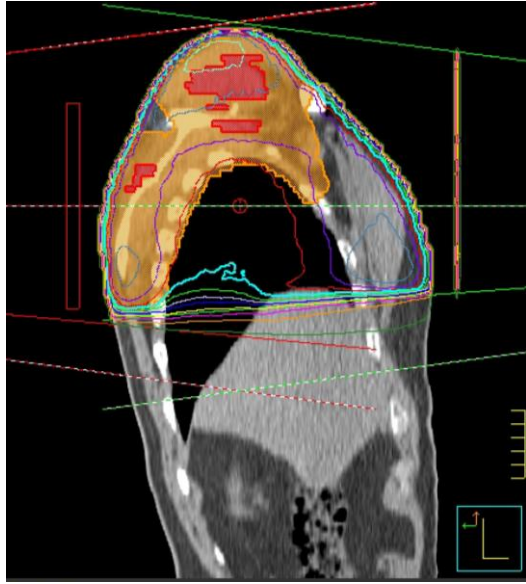
Chemotherapy:

no

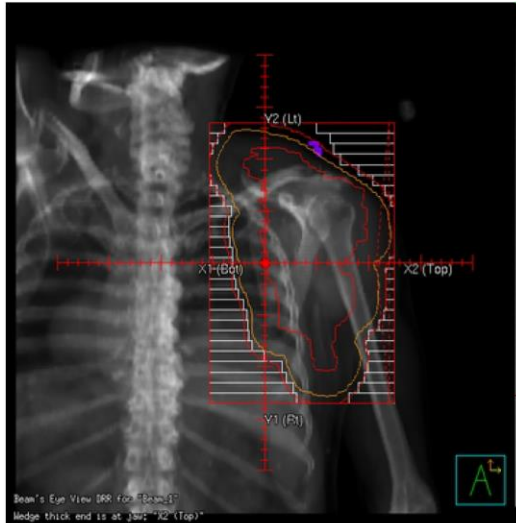
Surgery:

Surgery is carried out after completion of RT

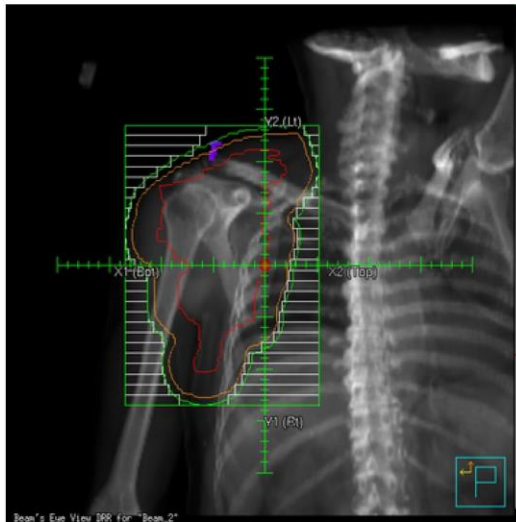
Shoulder; Tikhoff-Linberg preoperative Radiotherapy Planning 2013



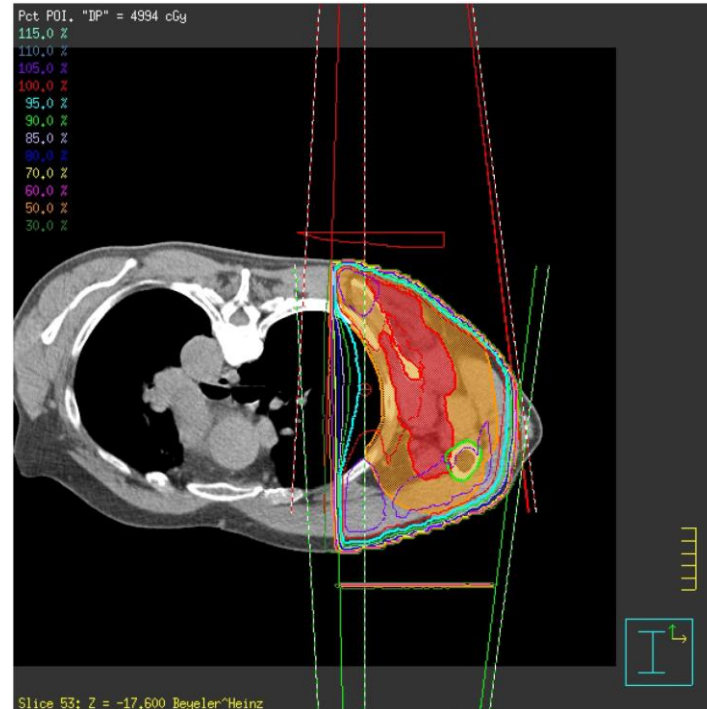
Shoulder; Tikhoff-Linberg preoperative Radiotherapy Planning 2013



DRR View



DRR View



Isocenter Transverse View

Isocenter 3 Window View



Shoulder; Tikhoff-Linberg

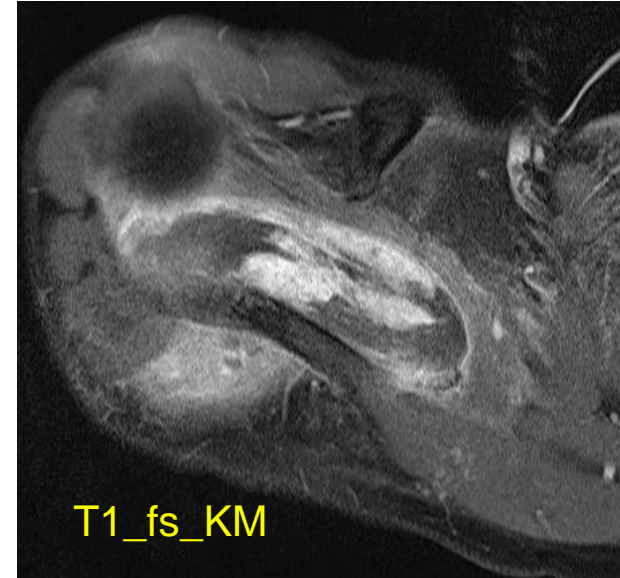
Clinical presentation October 2nd 2013



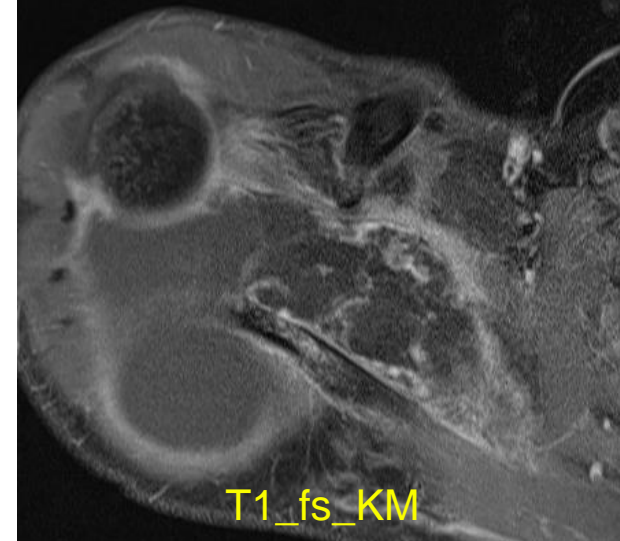
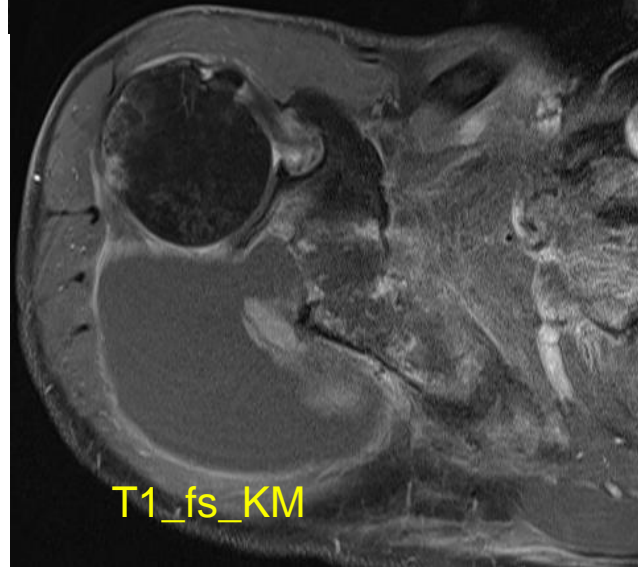
Shoulder; Tikhoff-Linberg

MRI right shoulder, October 03, 2013

July

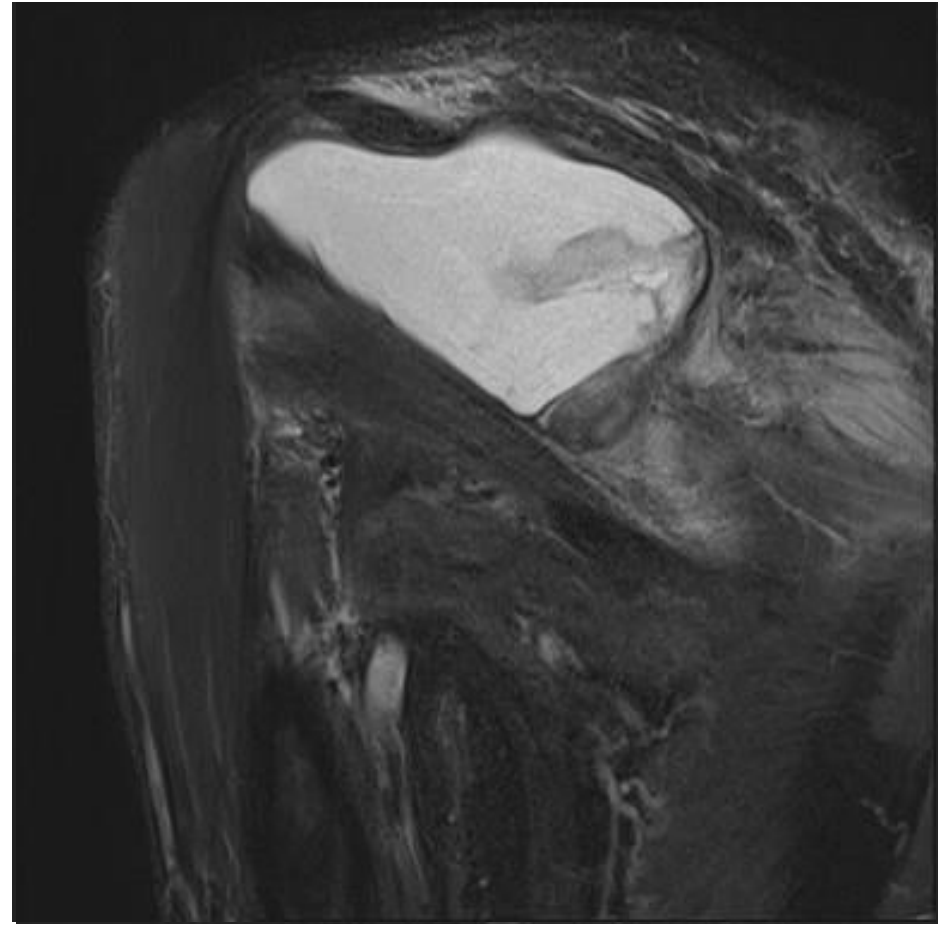


October



Shoulder; Tikhoff-Linberg

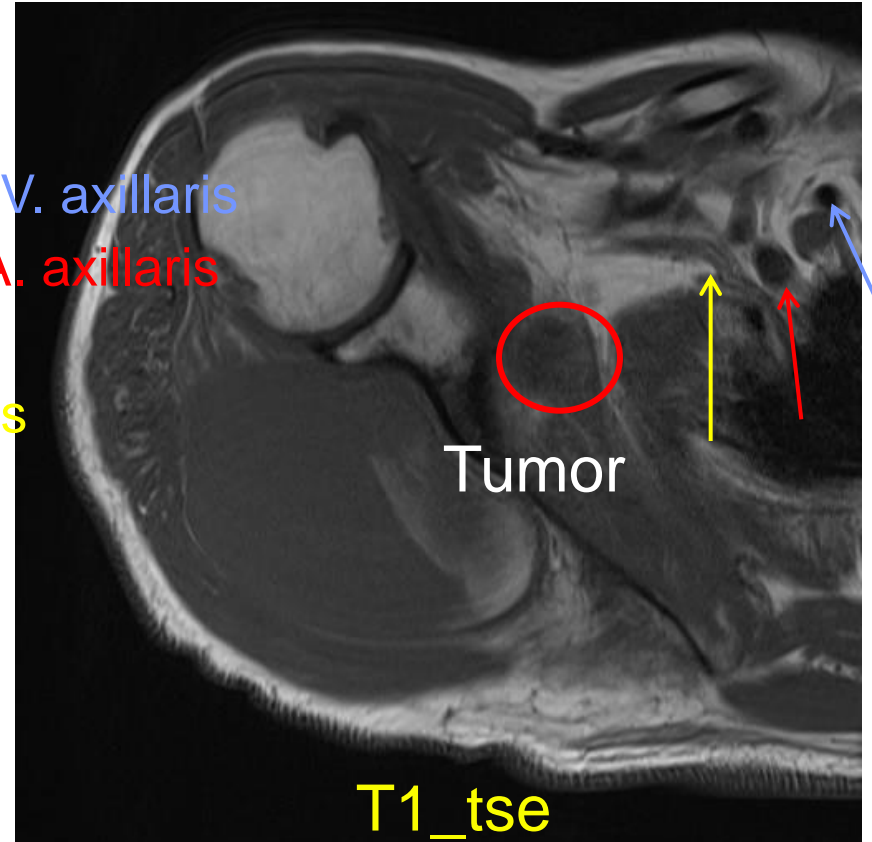
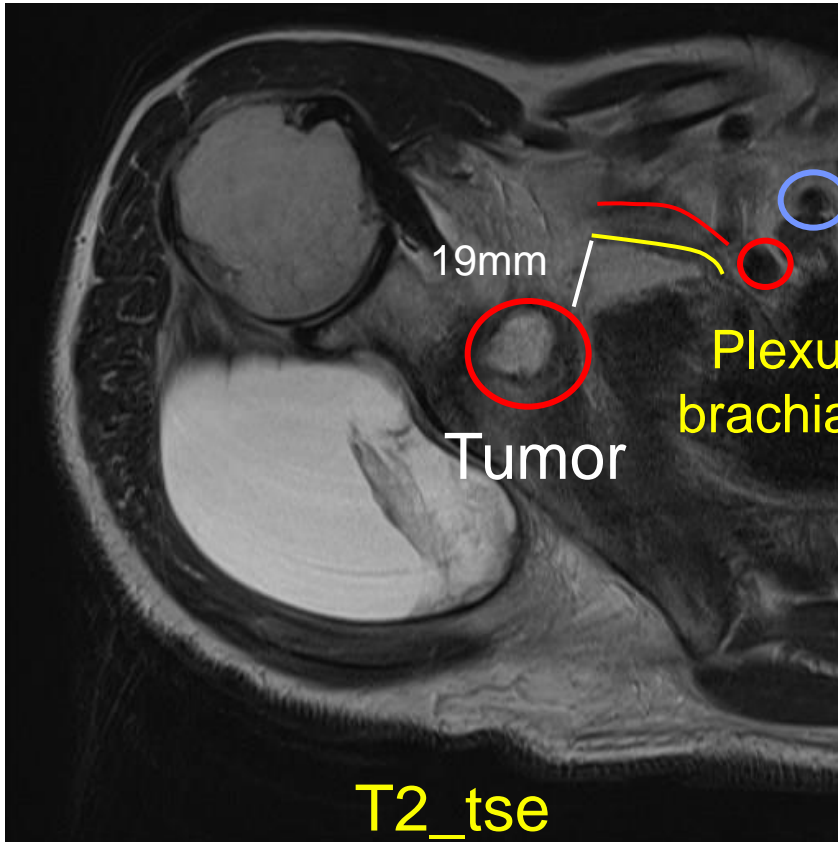
MRI right shoulder, October 03, 2013



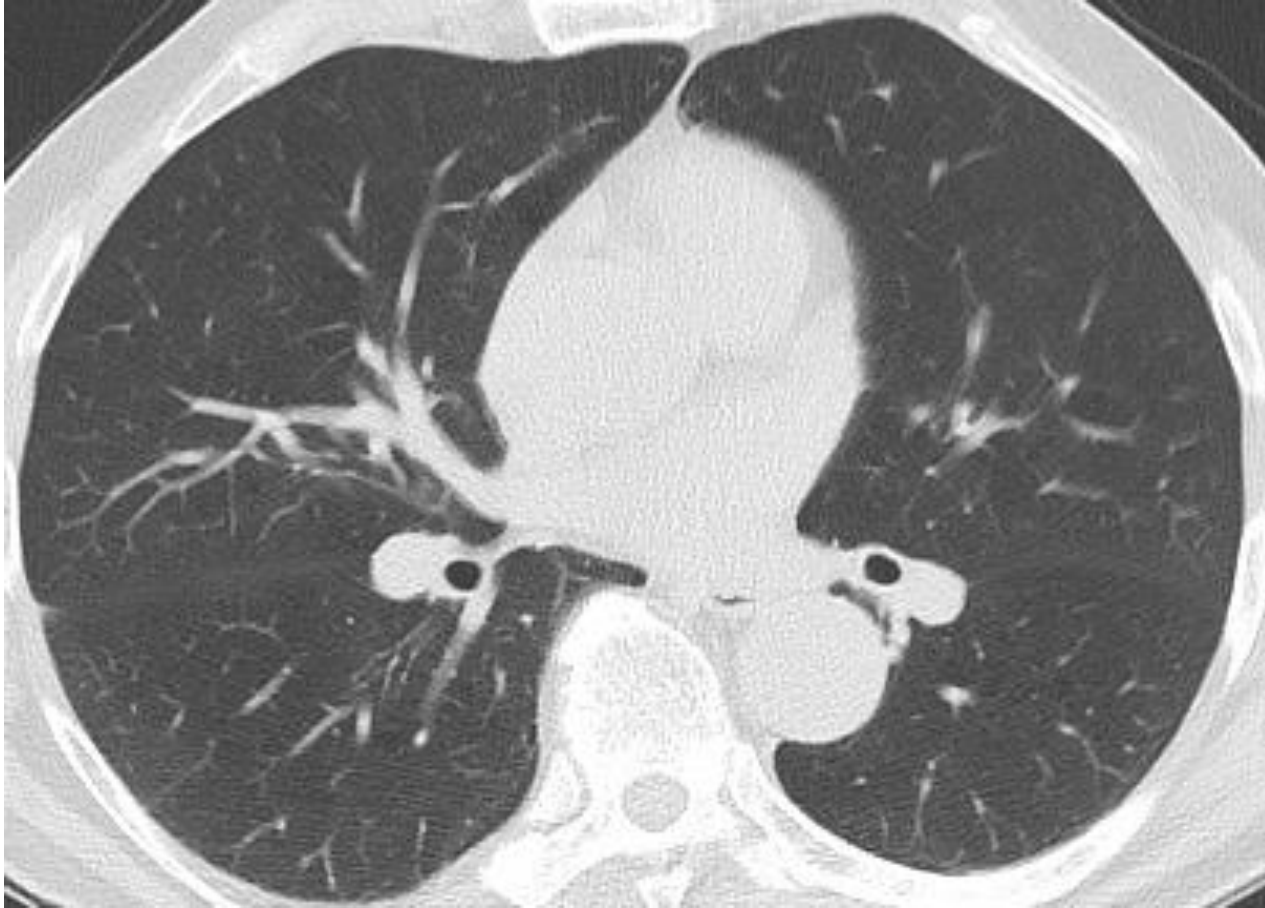
Shoulder; Tikhoff-Linberg

MRI October 3rd 2013

Relation to neurovascular bundle



Shoulder; Tikhoff-Linberg CT Chest October 3rd 2013

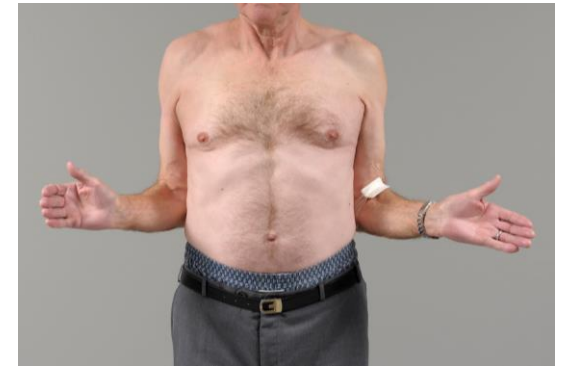
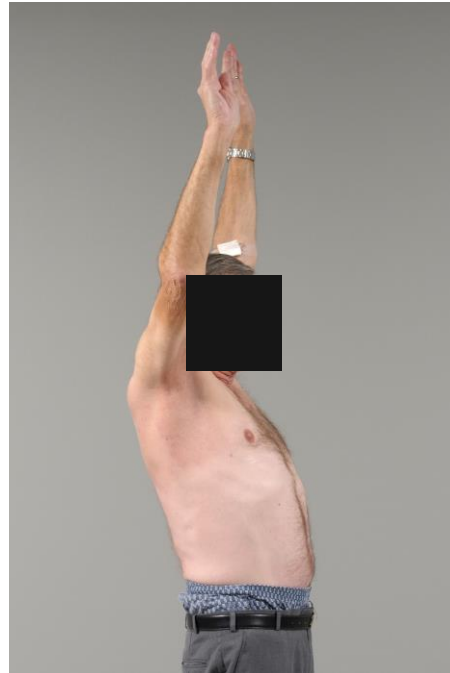
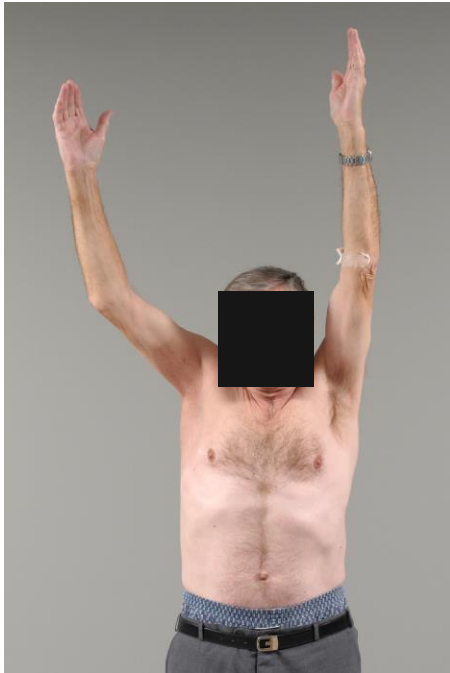


no evidence of metastasis

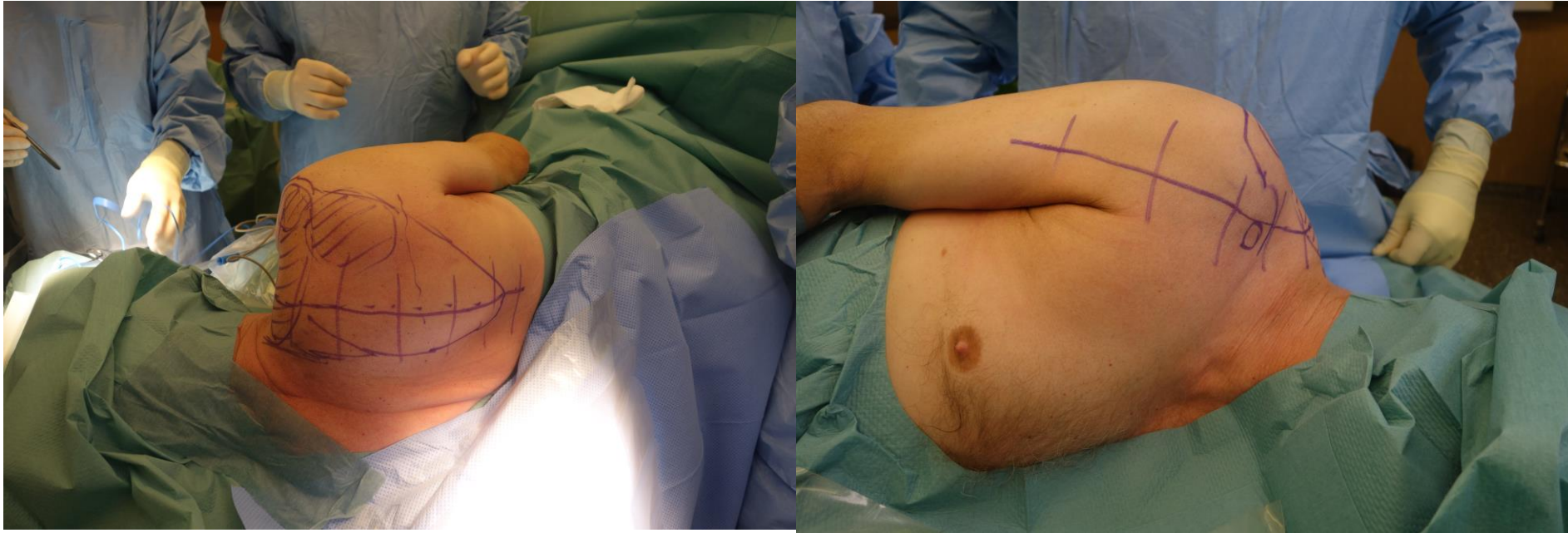
Shoulder; Tikhoff-Linberg surgical options

- **Tikhoff-Linberg procedure**
- **Forequarter Amputation with/without partial resection of the chest wall**

Shoulder; Tikhoff-Linberg preoperativ picture: November 18, 2013



Shoulder; Tikhoff-Linberg Surgery November 22, 2013



Shoulder; Tikhoff-Linberg Surgery November 22, 2013

DORSAL VIEW

Scapula, Margo medialis

Scapula, Margo medialis

kranial

kaudal

Trapezius

Tumor

ISP

Trapezius

Serratus anterior

Levator
scapulae

Ribs

Rhomboidei

Shoulder; Tikhoff-Linberg Surgery November 22, 2013

kaudal

kranial

Deltoideus

Clavicula

Deltopectoral

Deltoideus

Humeral head

Biceps long head

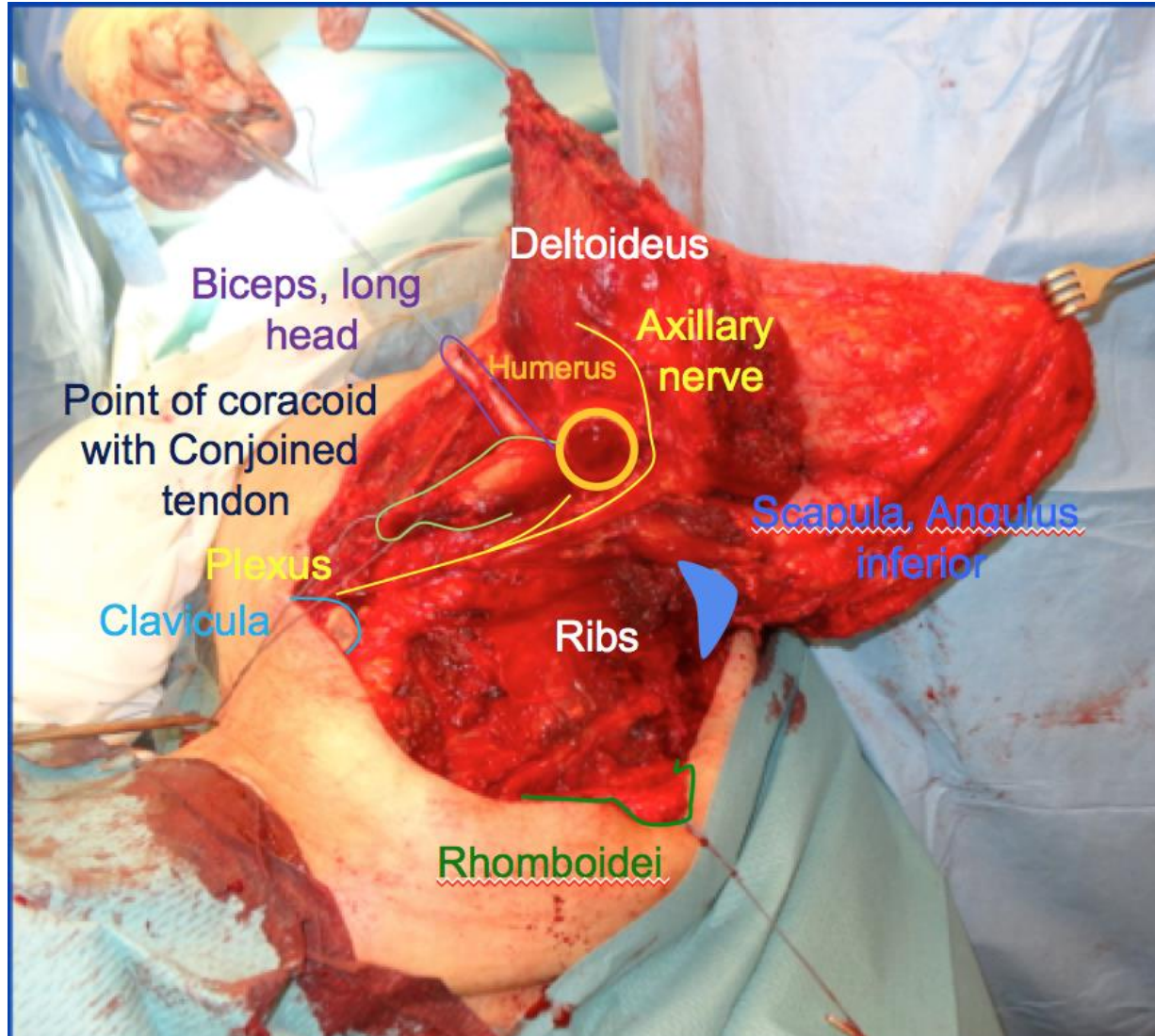
Conjoined tendon

Plexus

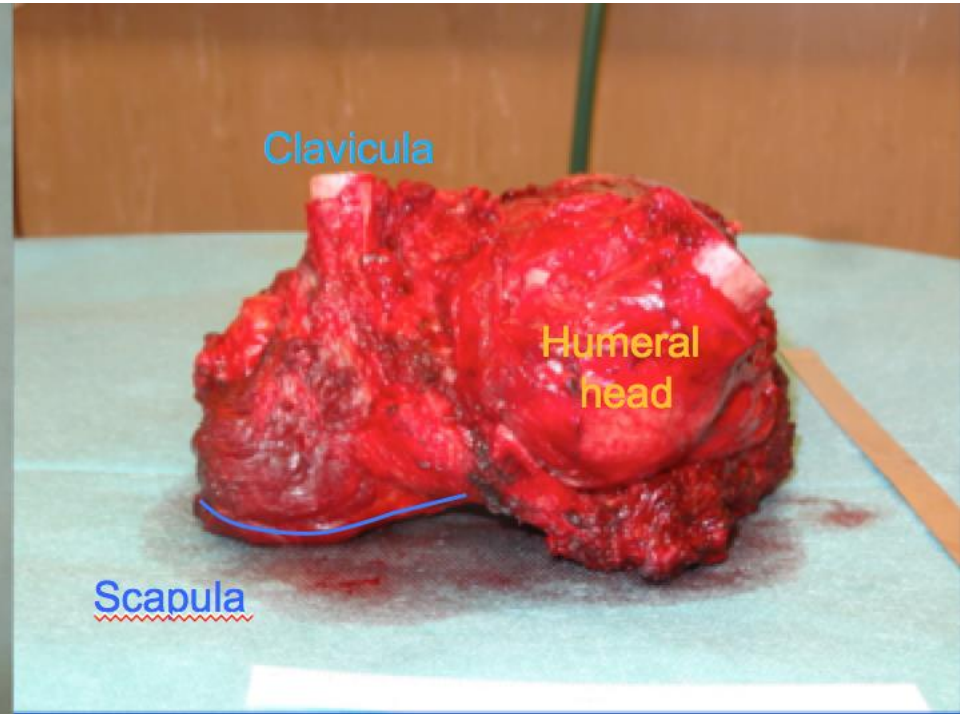
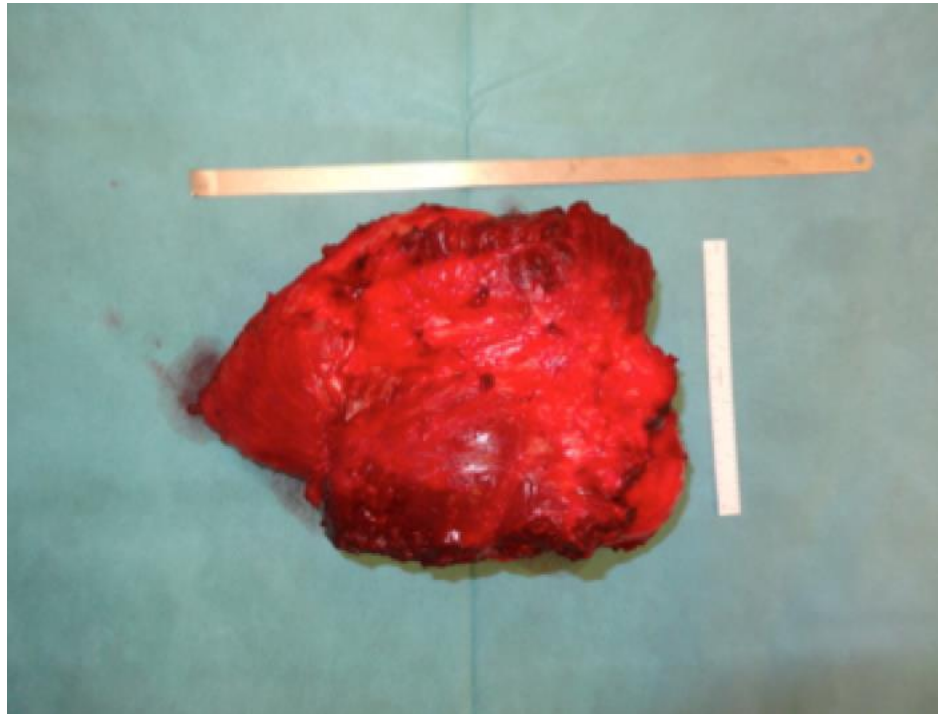
Clavicula

November 22, 2013

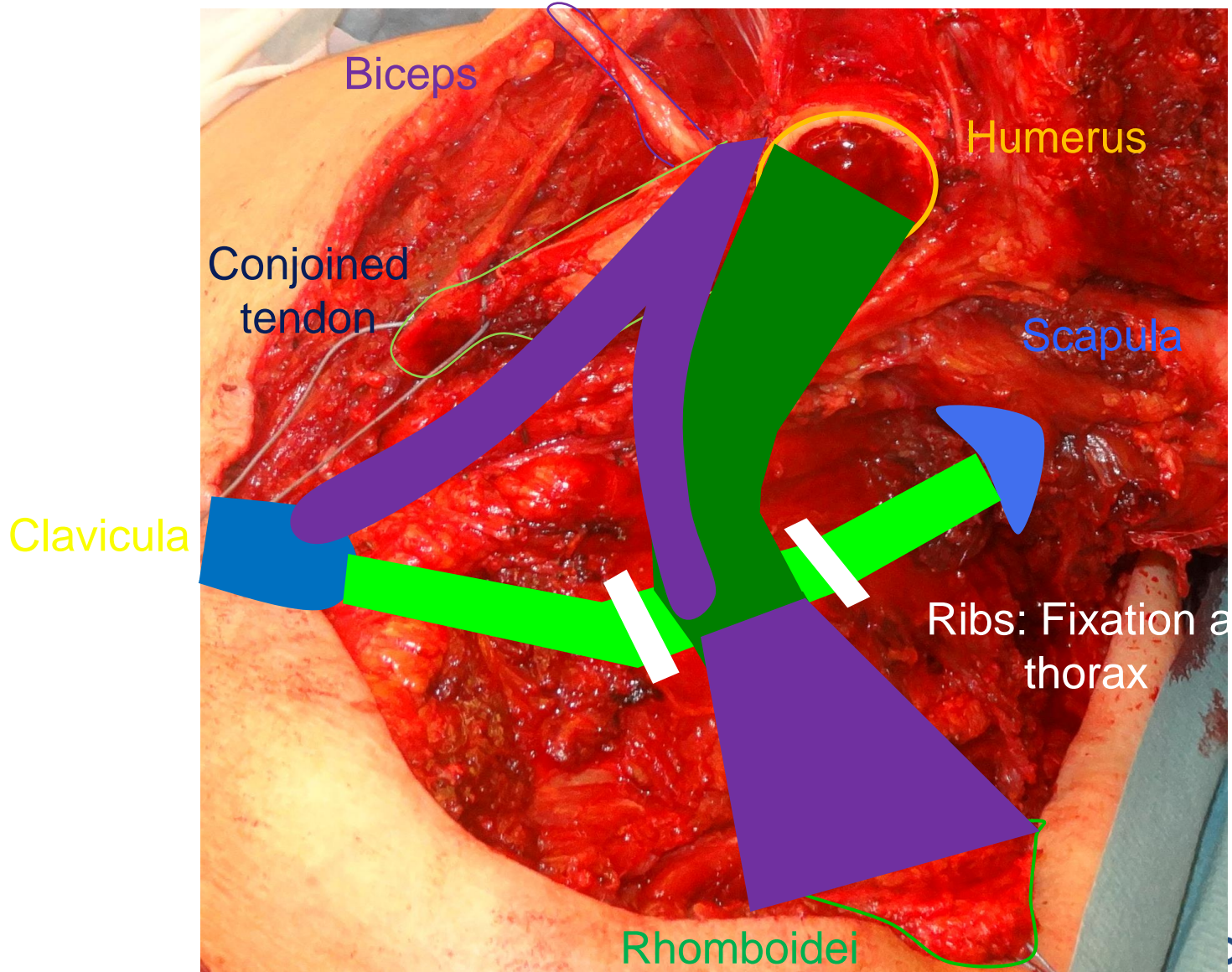
Shoulder; Tikhoff-Linberg Surgery November 22, 2013



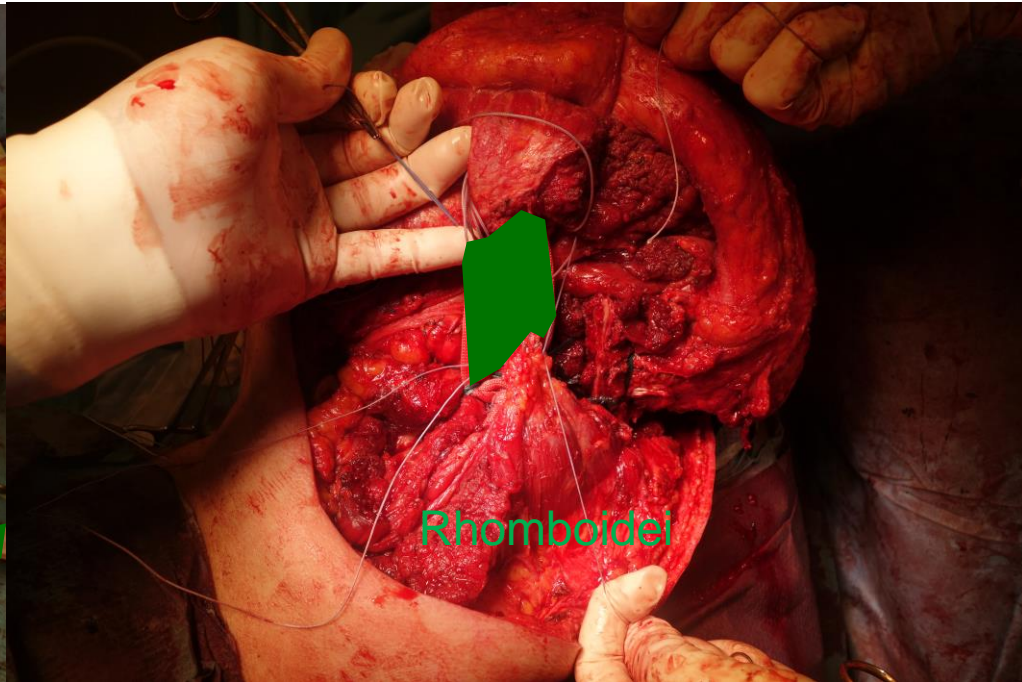
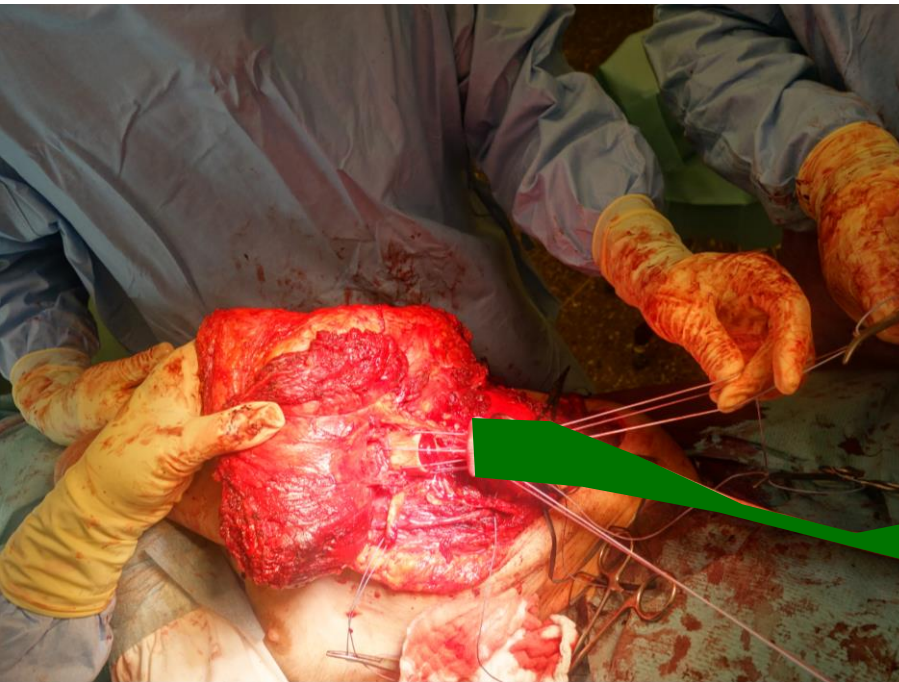
Shoulder; Tikhoff-Linberg Surgery November 22, 2013



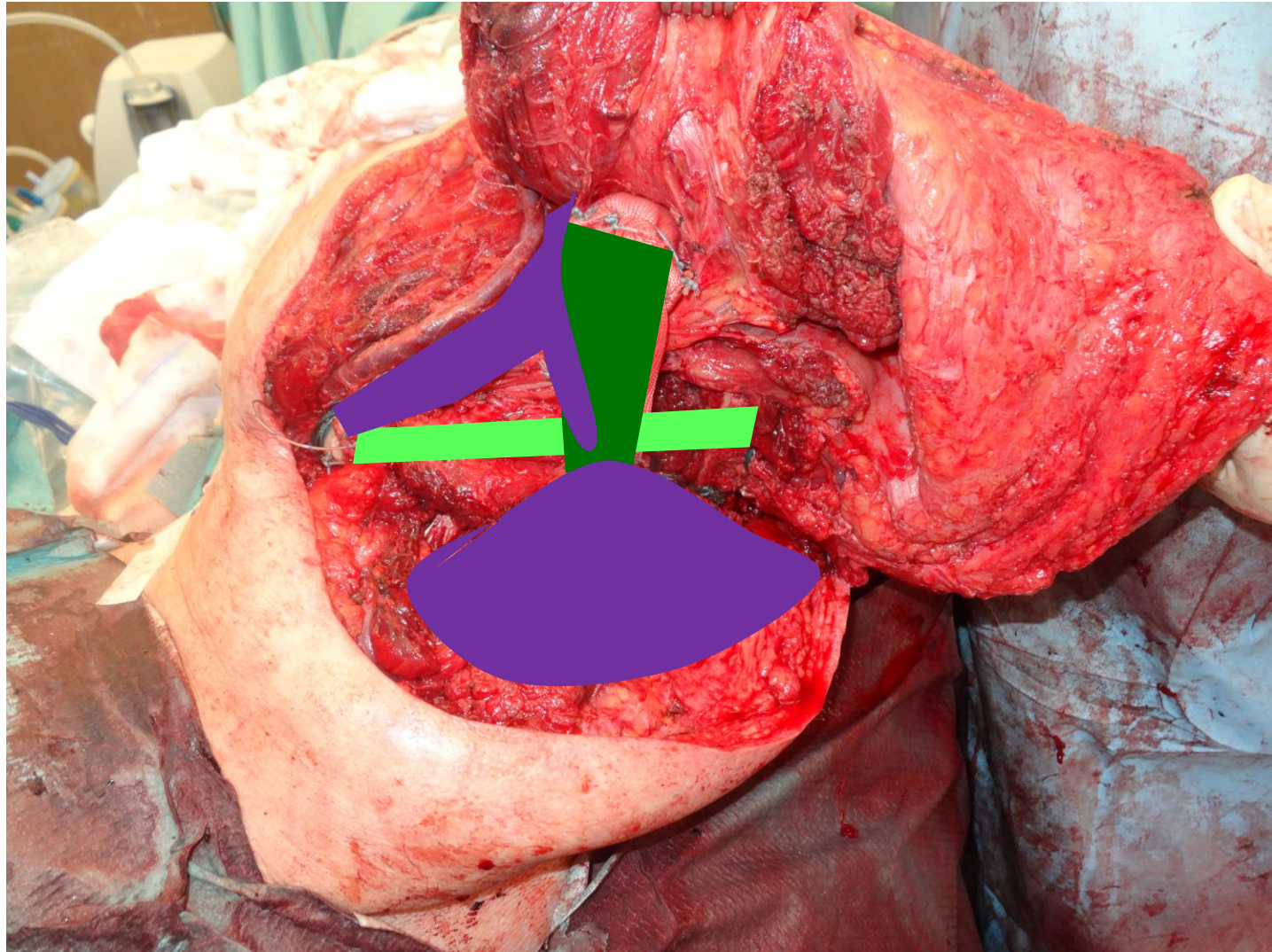
Shoulder; Tikhoff-Linberg Surgery November 22, 2013



Shoulder; Tikhoff-Linberg Surgery November 22, 2013



Shoulder; Tikhoff-Linberg Surgery November 22, 2013



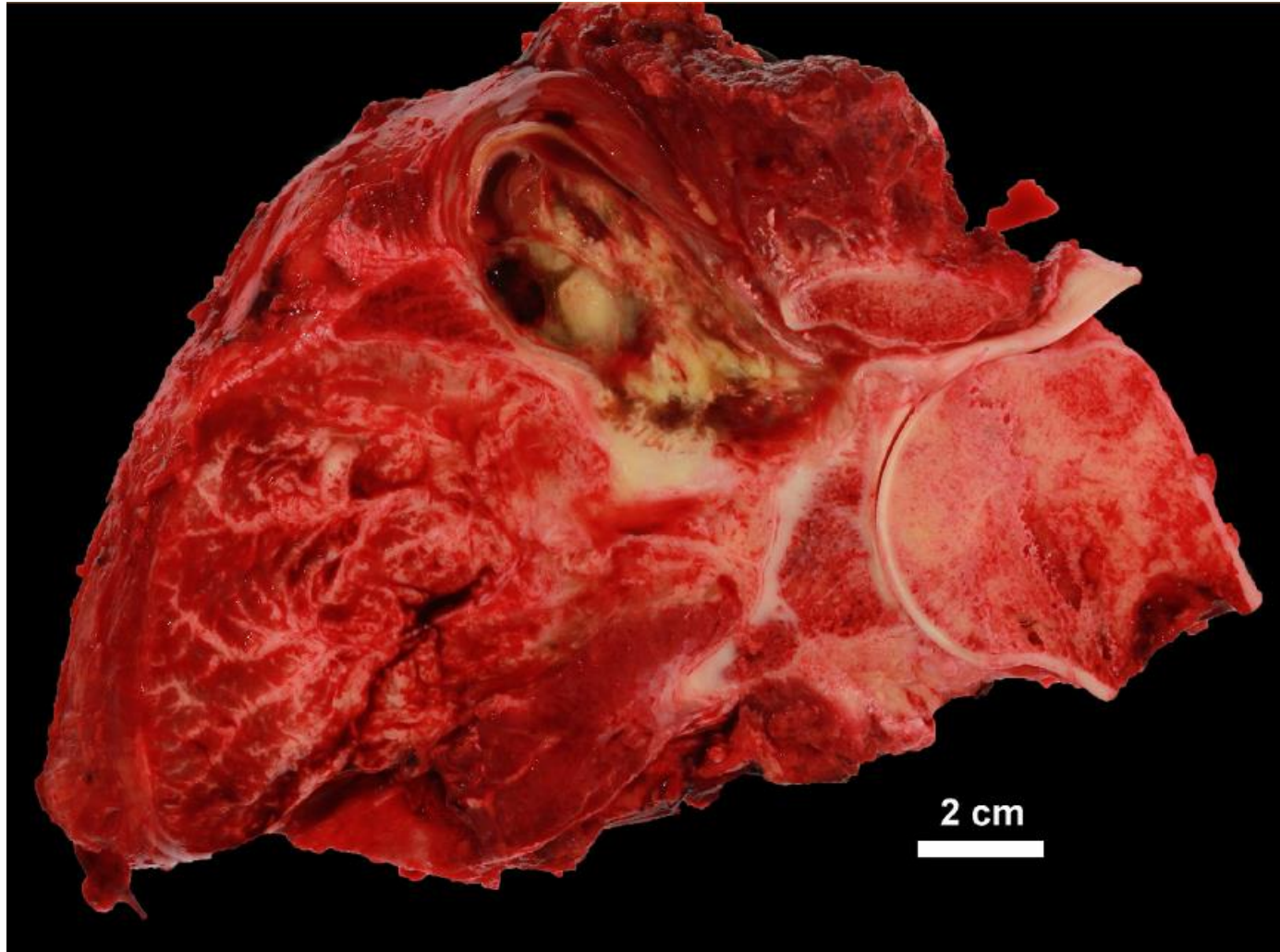
Shoulder; Tikhoff-Linberg Surgery November 22, 2013



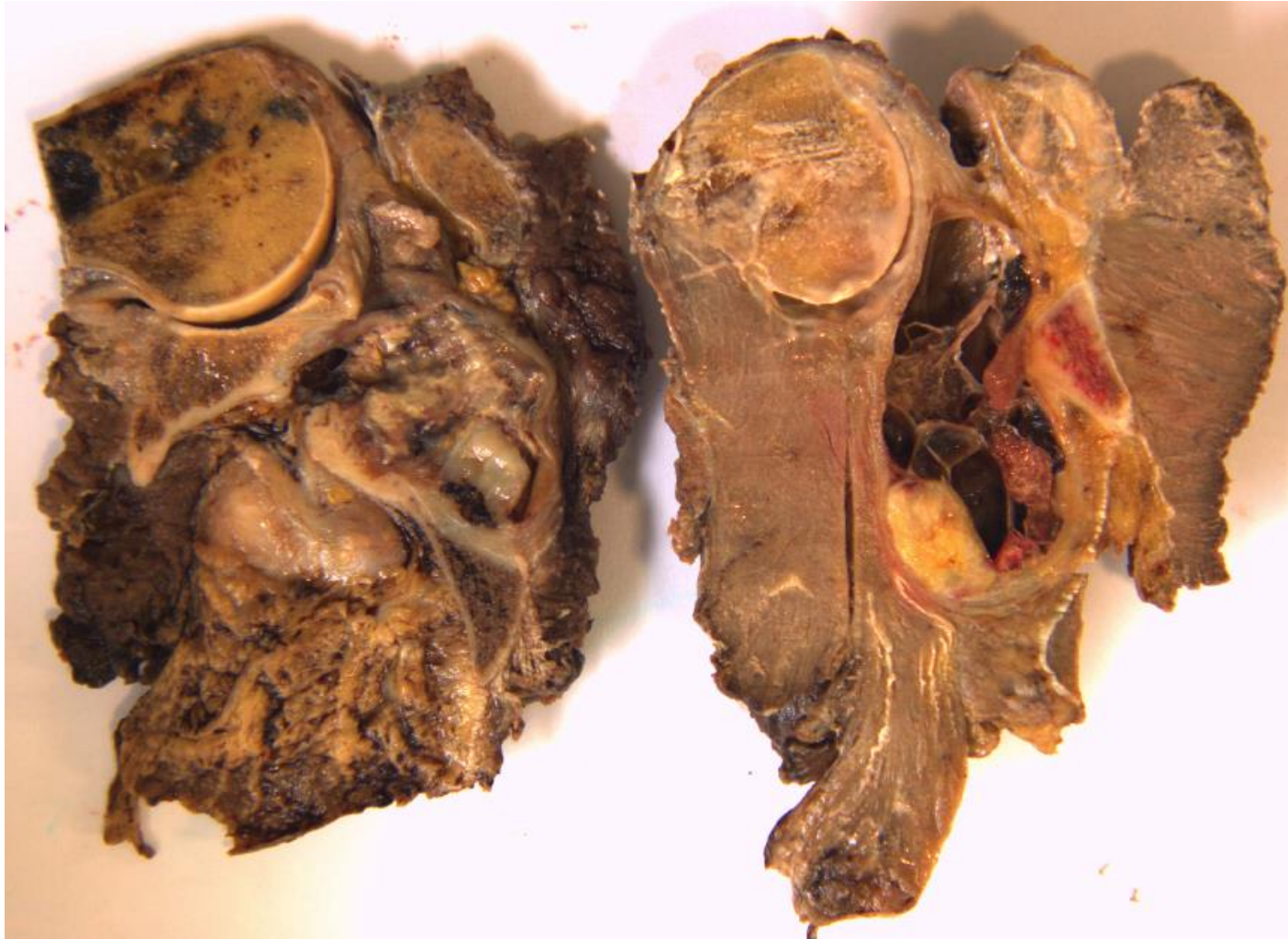
Shoulder; Tikhoff-Linberg Surgery November 22, 2013



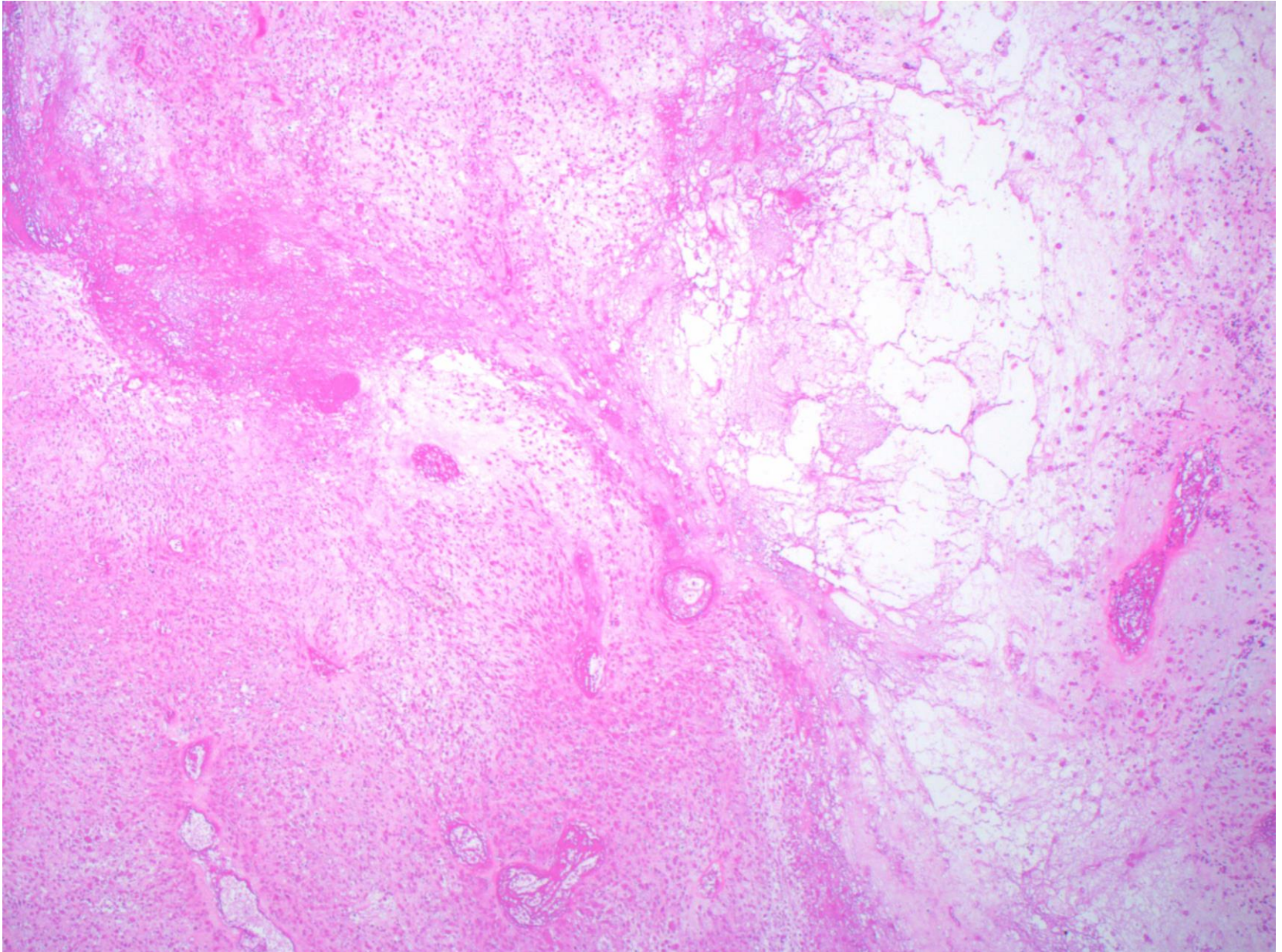
Shoulder; Tikhoff-Linberg Result Surgery November 22, 2013



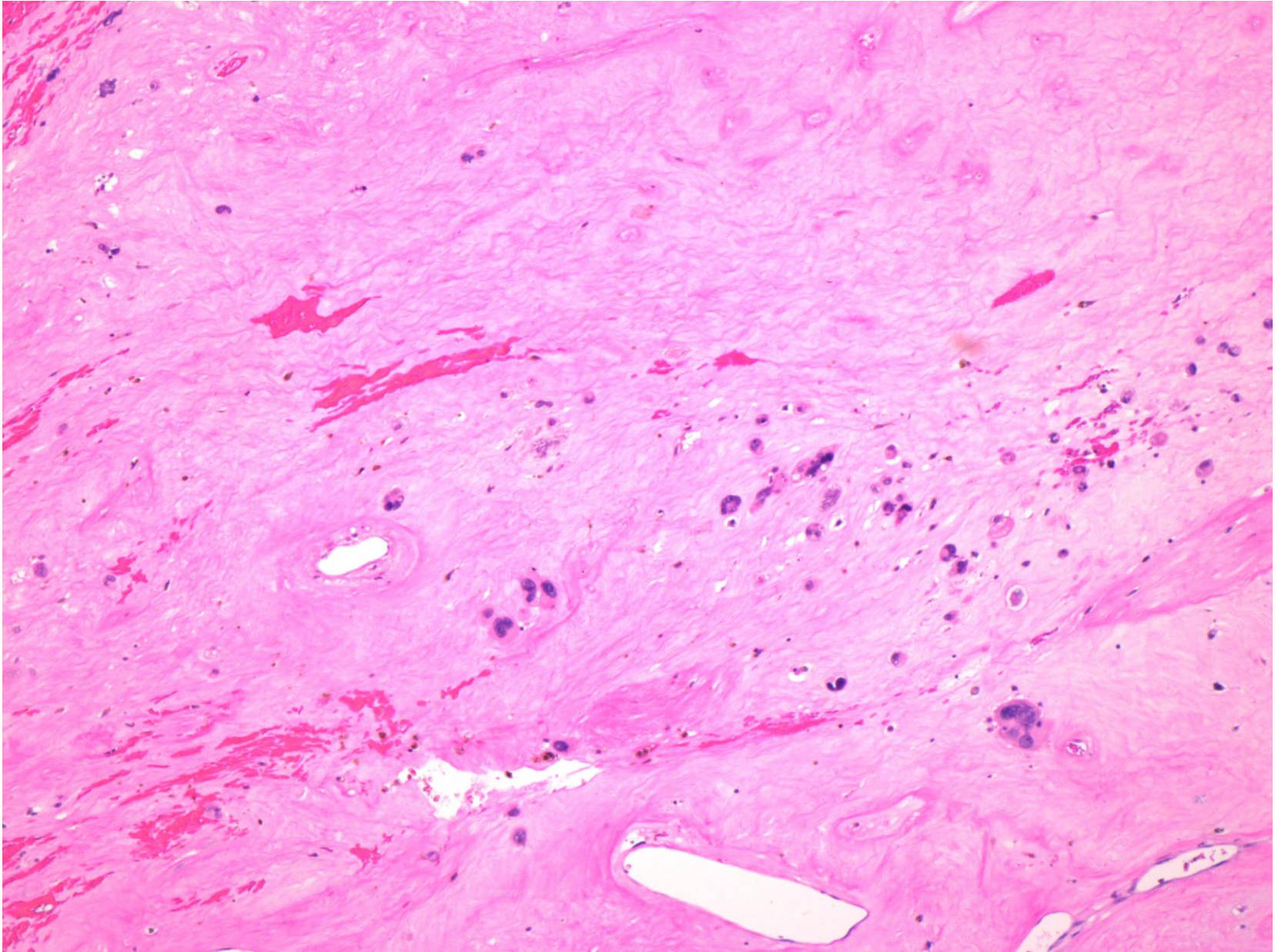
Shoulder; Tikhoff-Linberg Result Surgery November 22, 2013



Shoulder; Tikhoff-Linberg



Shoulder; Tikhoff-Linberg



Shoulder; Tikhoff-Linberg

Result Surgery November 22, 2013

Diagnose

En bloc-Resektat der rechten Schulter mit subtotal avitalem (> 98%), 8cm grossem, teils spindeligem, teils pleomorphzelligen Sarkom bei Status nach vorausgegangener Radiotherapie.

Resektion im Gesunden mit minimalen Abständen: Nach thorakal 0,7cm, nach ventral 0,9cm, nach cranial zum humeroacromialen Gelenkspalt, nach caudal 3cm, nach lateral 1cm, nach medial 1cm. Tumorfremie ossäre Absetzungsflächen.

Mikroskopischer Befund

Die Schnittpräparate im Bereiche des Tumors sind zu über 98% vital, daneben Zeichen von rezidivierenden Einblutungen. Dazwischen kleinere Inseln von einzeln liegenden Tumorzellen mit vergrösserten, stark unregelmässig begrenzten, hyperchromatischen Kernen und mittelbreitem eosinophilem Zytoplasmasaum. Die knöchernen Strukturen direkt angrenzend an die Haupttumormasse teils infiltrierend durch avitale Tumoranteile und mit Zeichen von Knochenmarksfibrose. Die knöchernen Resektionsränder der Clavicula, des Humerus und der Scapula sind tumorfremie, Weichteilresektionsränder ebenfalls tumorfremie mit den in der Makroskopie beschriebenen Abständen.

Shoulder; Tikhoff-Linberg

Sarcoma Board: November 28, 2013

Therapeutic decisions:

The patient is still stationary, but after hospital discharge the patient will be planned for a postoperative follow-up by the appropriate discipline (depending on the def. Pathology results).

Shoulder; Tikhoff-Linberg clinical pics: 12 December, 2013

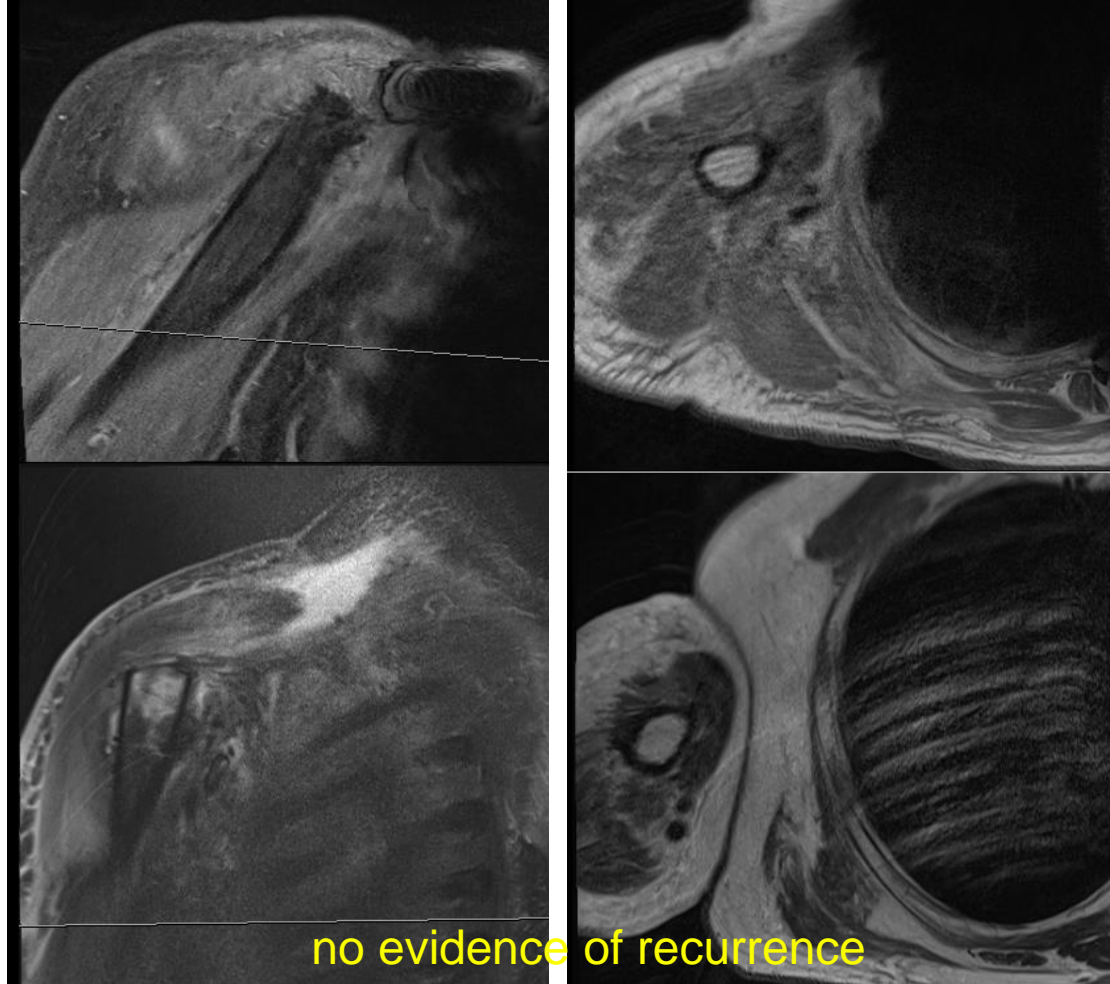


Shoulder; Tikhoff-Linberg RX Shoulder: January 09th, 2014



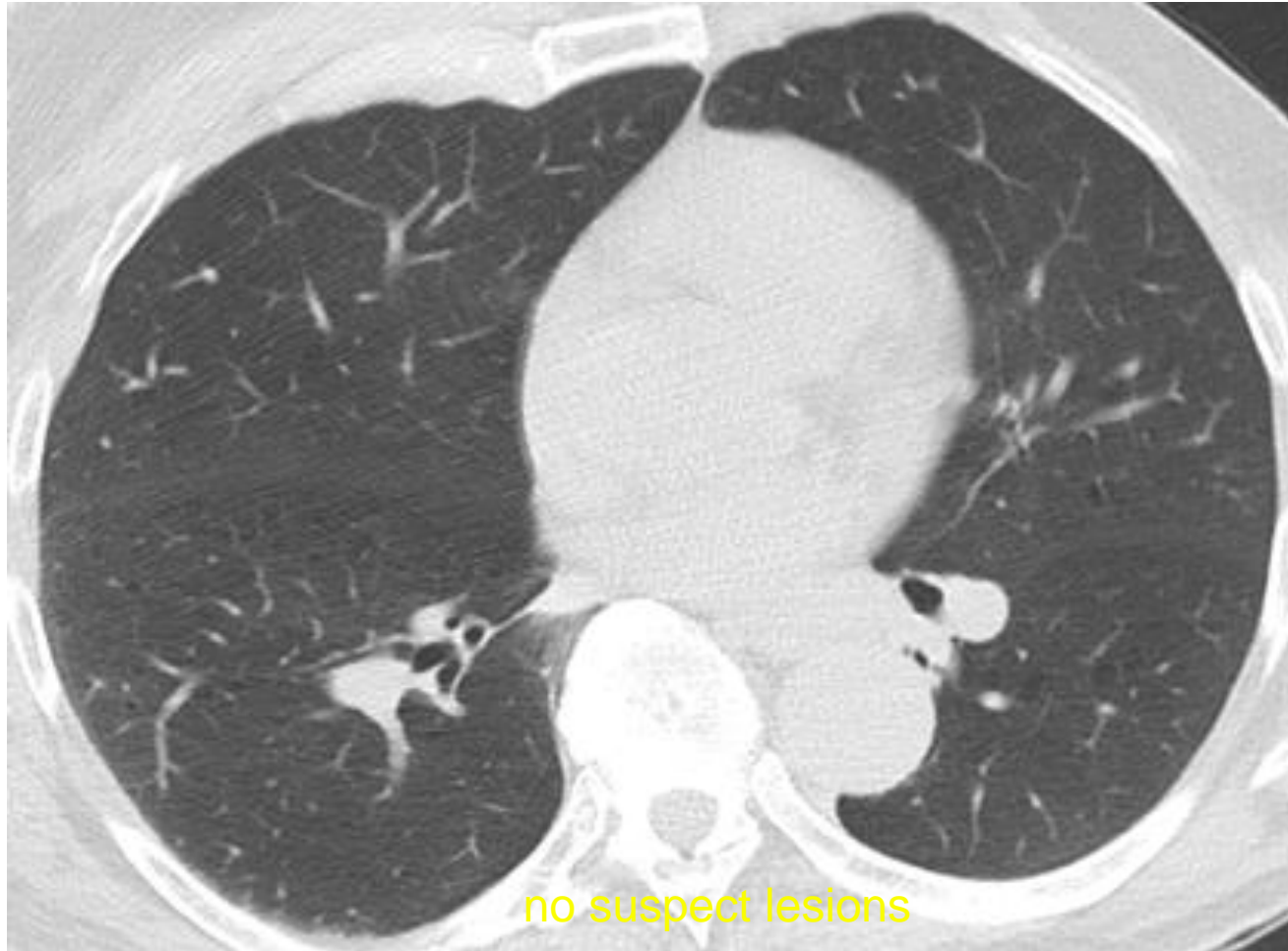
Shoulder; Tikhoff-Linberg

MRI Shoulder: February 21th, 2014

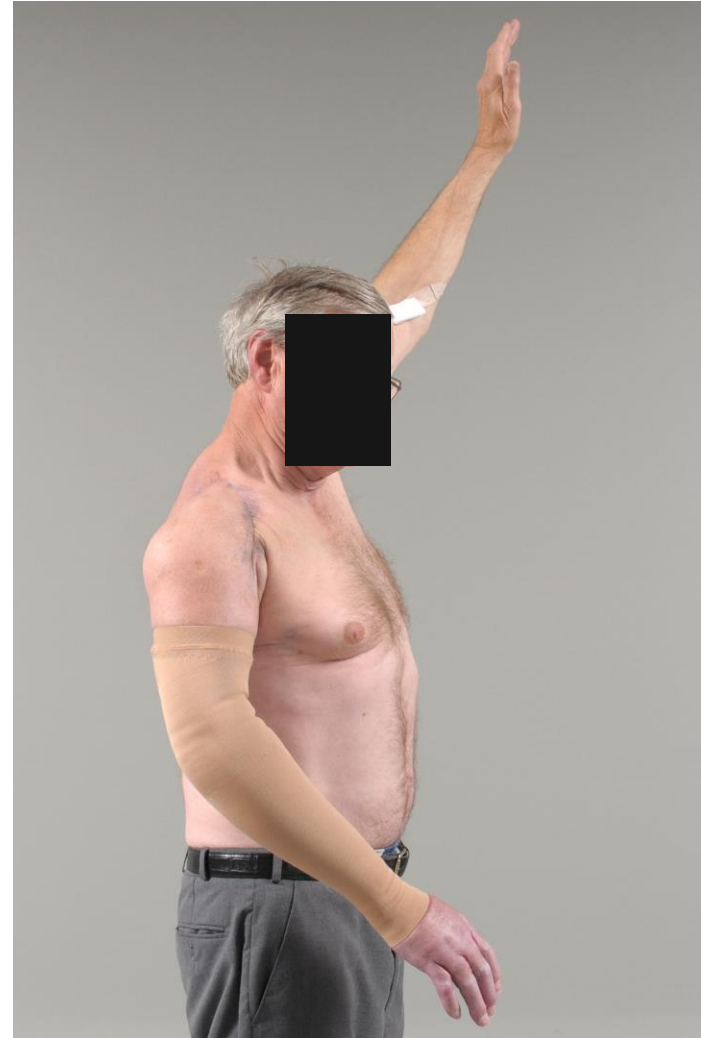
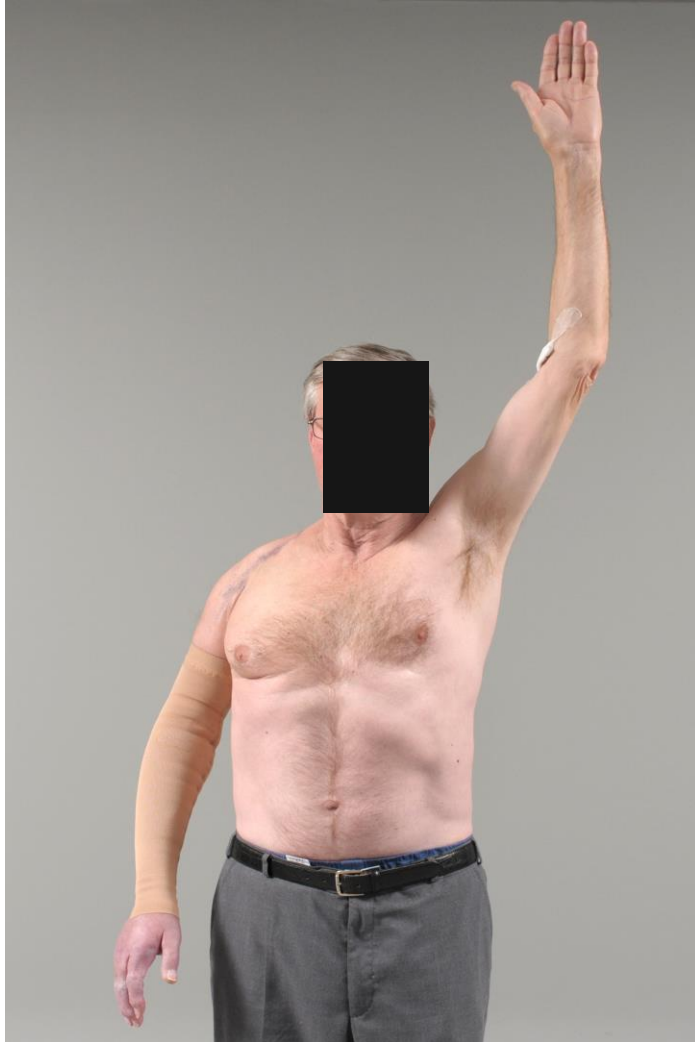


Shoulder; Tikhoff-Linberg

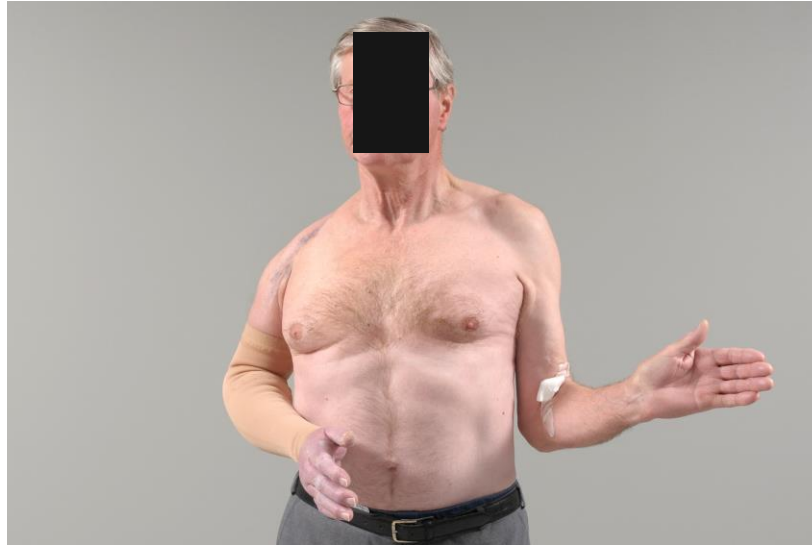
CT-Thorax: February 22th, 2014



Shoulder; Tikhoff-Linberg clinical visit: May 15th, 2014

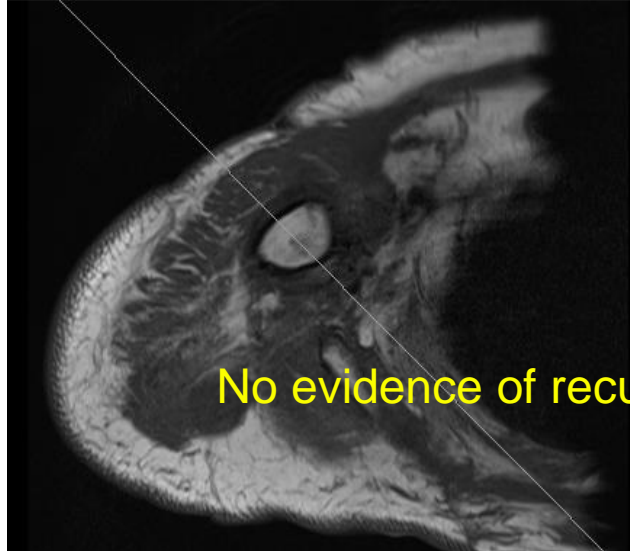
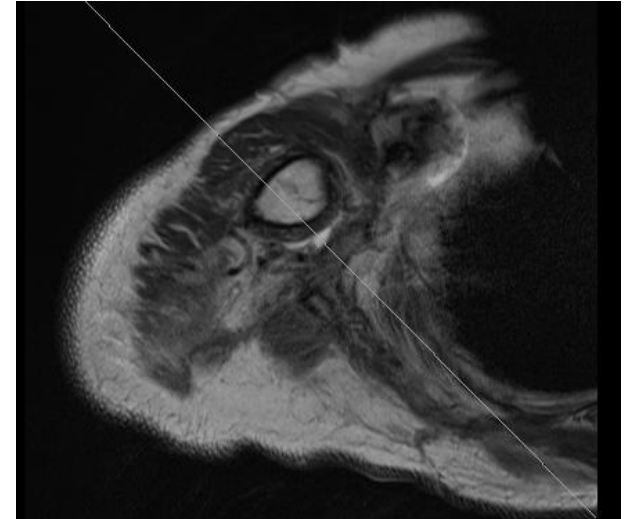
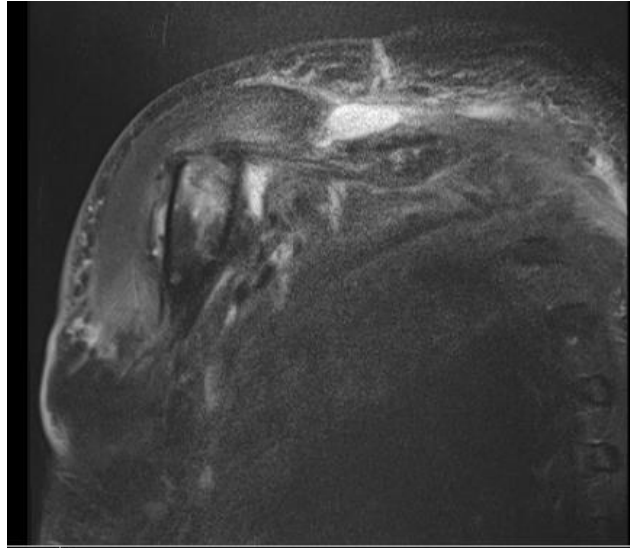


Shoulder; Tikhoff-Linberg clinical visit: May 15th, 2014

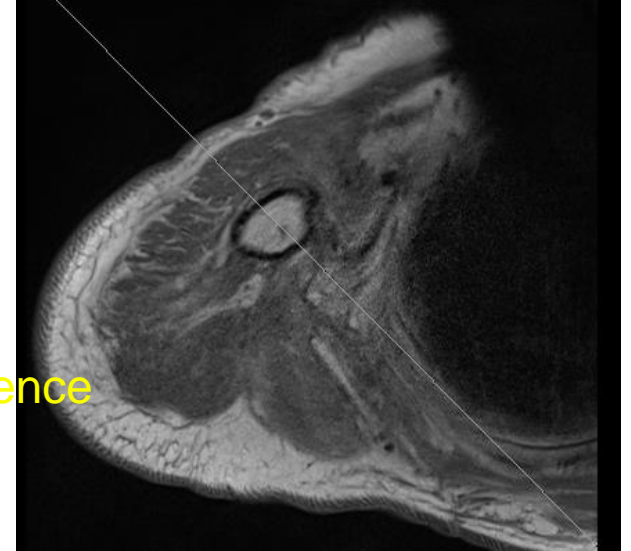


Shoulder; Tikhoff-Linberg

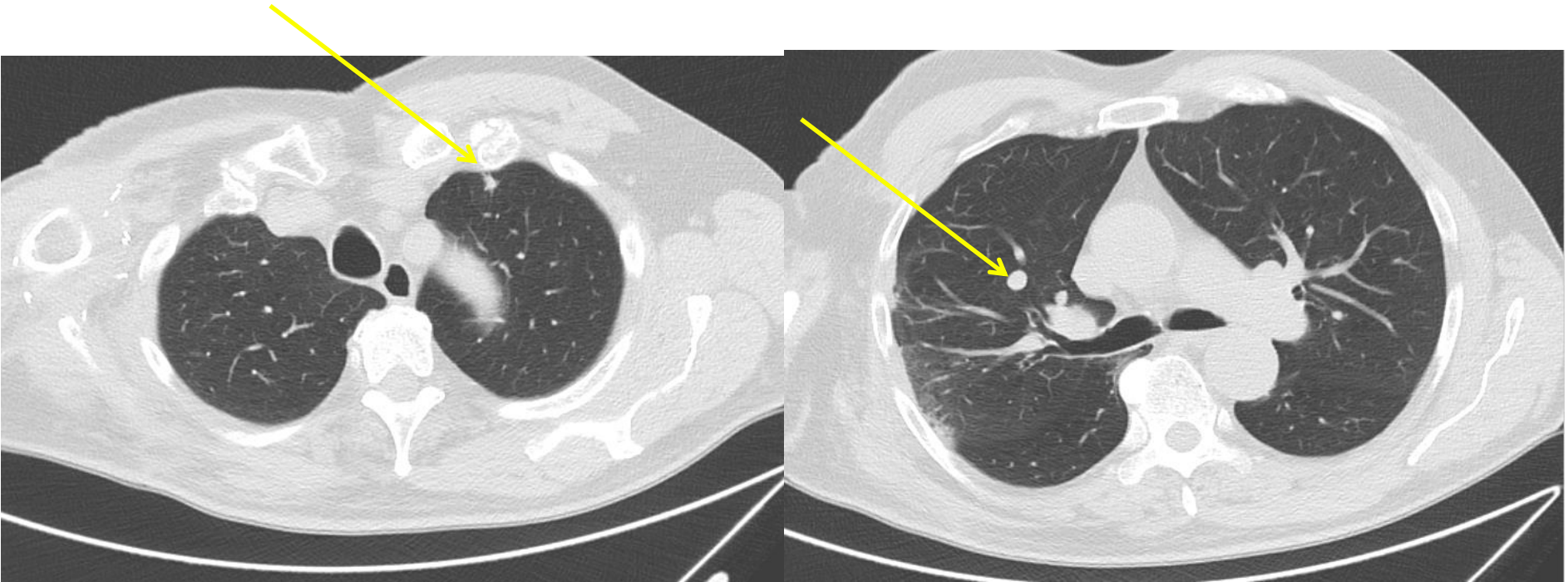
MRI Shoulder: May 15th, 2014



No evidence of recurrence



Shoulder; Tikhoff-Linberg CT-Thorax: May 15th, 2014



Shoulder; Tikhoff-Linberg

Sarcoma Board: May 22th, 2014

Therapeutic decisions:

Chemotherapy: no.

Radiotherapy: no.

Hyprosar: no.

Surgery: Dr. Schneiter thoracic surgery USZ informed the Board that the left metastasis suspicious lesion can be removed minimally invasively to obtain a definitive diagnosis. A following CT thorax should be made to see if the right lesion size remains constant and if there are other lesions. Depending on the evaluation of the CT , the right lesion can then also subsequently be removed.

Shoulder; Tikhoff-Linberg

Thoracic Surgery June 2014

Therapie

24.06.14

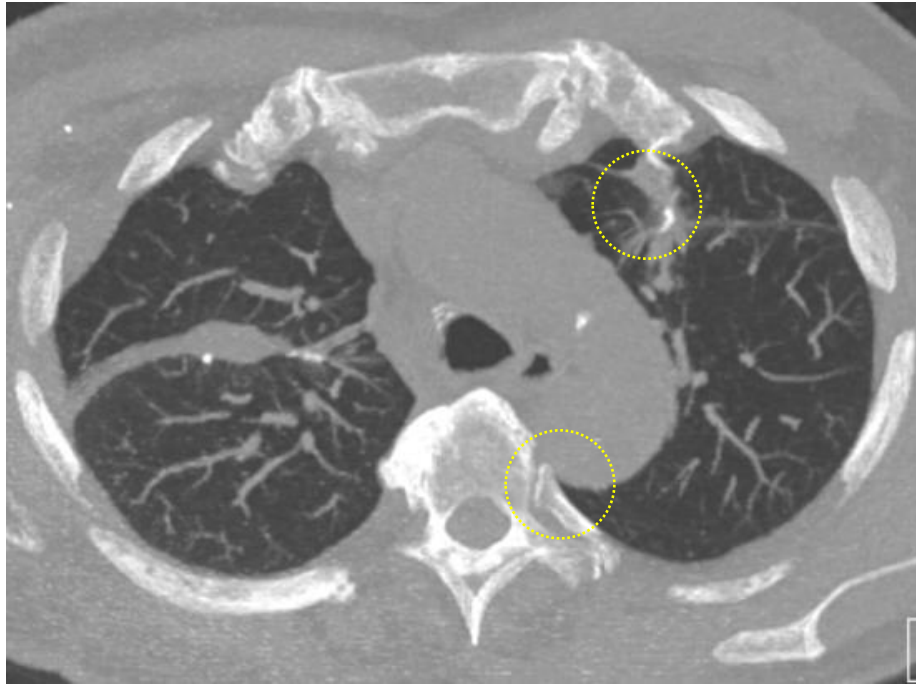
Thorakoskopische Wedgeresektion Oberlappen apiko-ventral links.

24.06.14

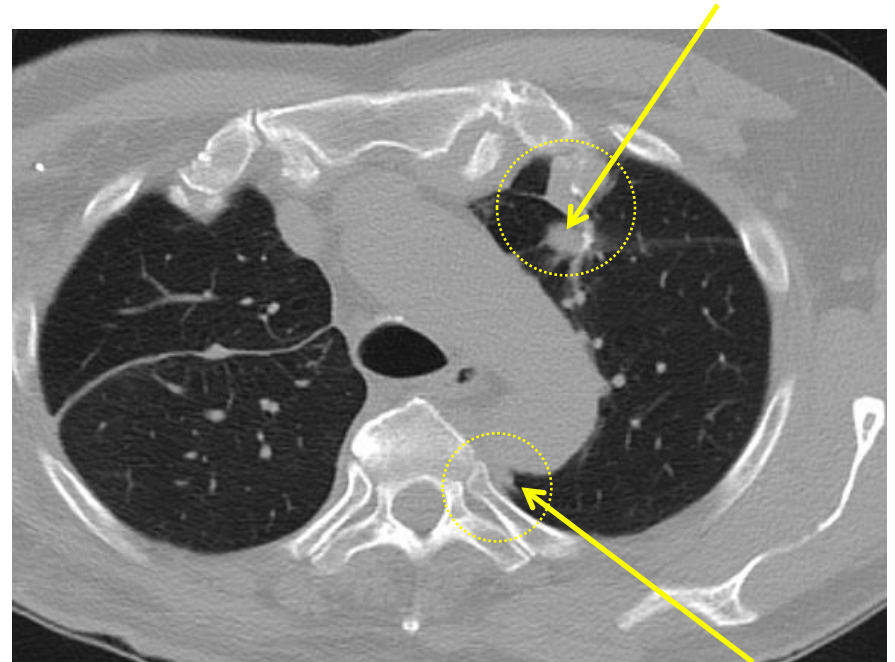
Offene Oberlappenresektion rechts mit Lymphknotensampling

Shoulder; Tikhoff-Linberg

CT Chest Nov 2014 vs. Feb 2015



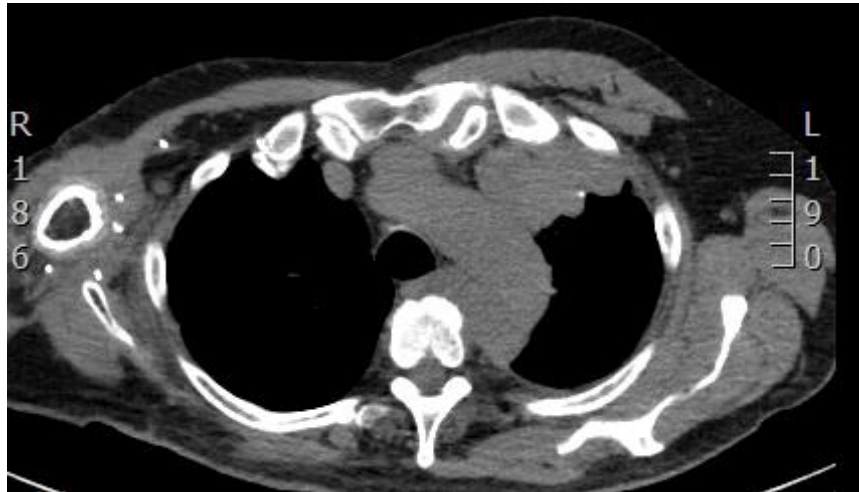
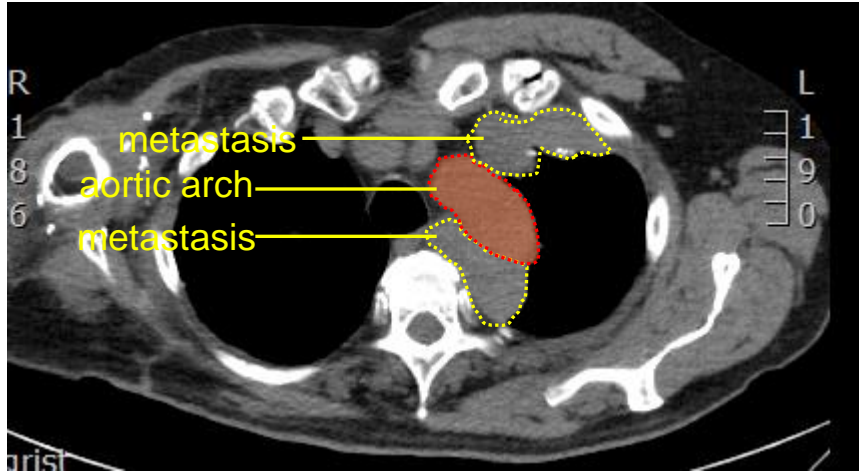
Nov 11th 2014



Feb 25th 2015

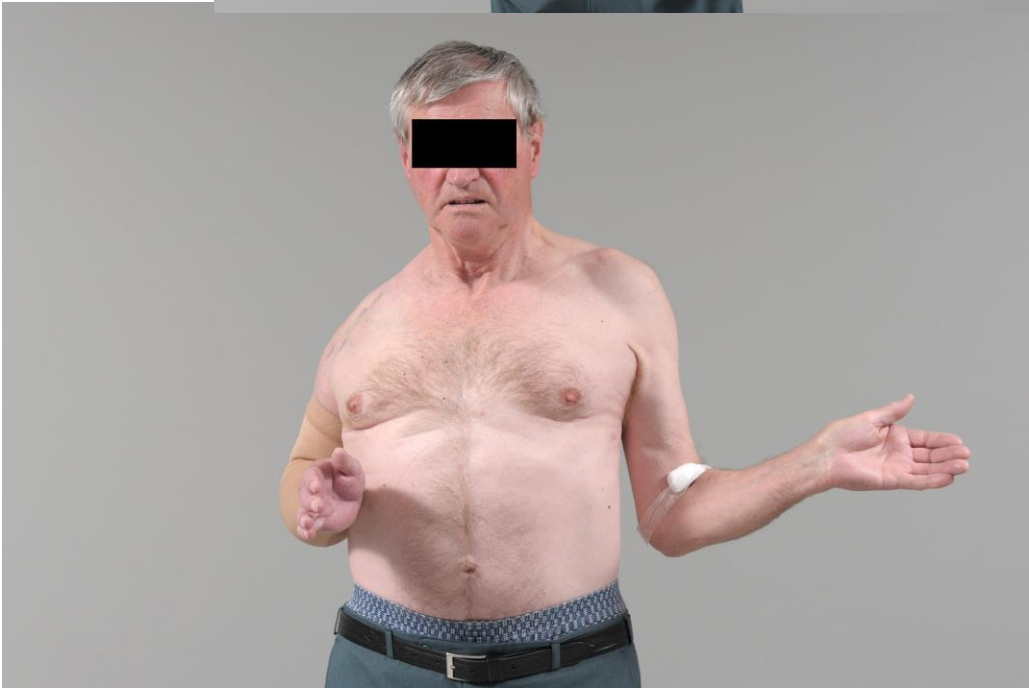
Shoulder; Tikhoff-Linberg

CT Chest May 27th 2015



Shoulder; Tikhoff-Linberg

Clinical presentation May 27th 2015



Shoulder; Tikhoff-Linberg

Clinical presentation May 27th 2015



Shoulder; Tikhoff-Linberg

May 28, 2015



Shoulder; Tikhoff-Linberg

Therapeutische Entscheidungen:

Systemische Therapie:

Nein

Radiotherapie:

Hyprosar: Nein

Eine dosierte palliative Radiotherapie könnte allenfalls angesetzt werden.

Chirurgie:

Eine chirurgische Entfernung der Befunde ist keine Option mehr.

Organisatorisches:

Der Patient wird für ein Informationsgespräch an die RAO USZ überwiesen.