TARPSWG

March 2022

Retroperitoneal sarcoma pathology database: Updates from Retroperitoneal Sarcoma Pathology Working Group

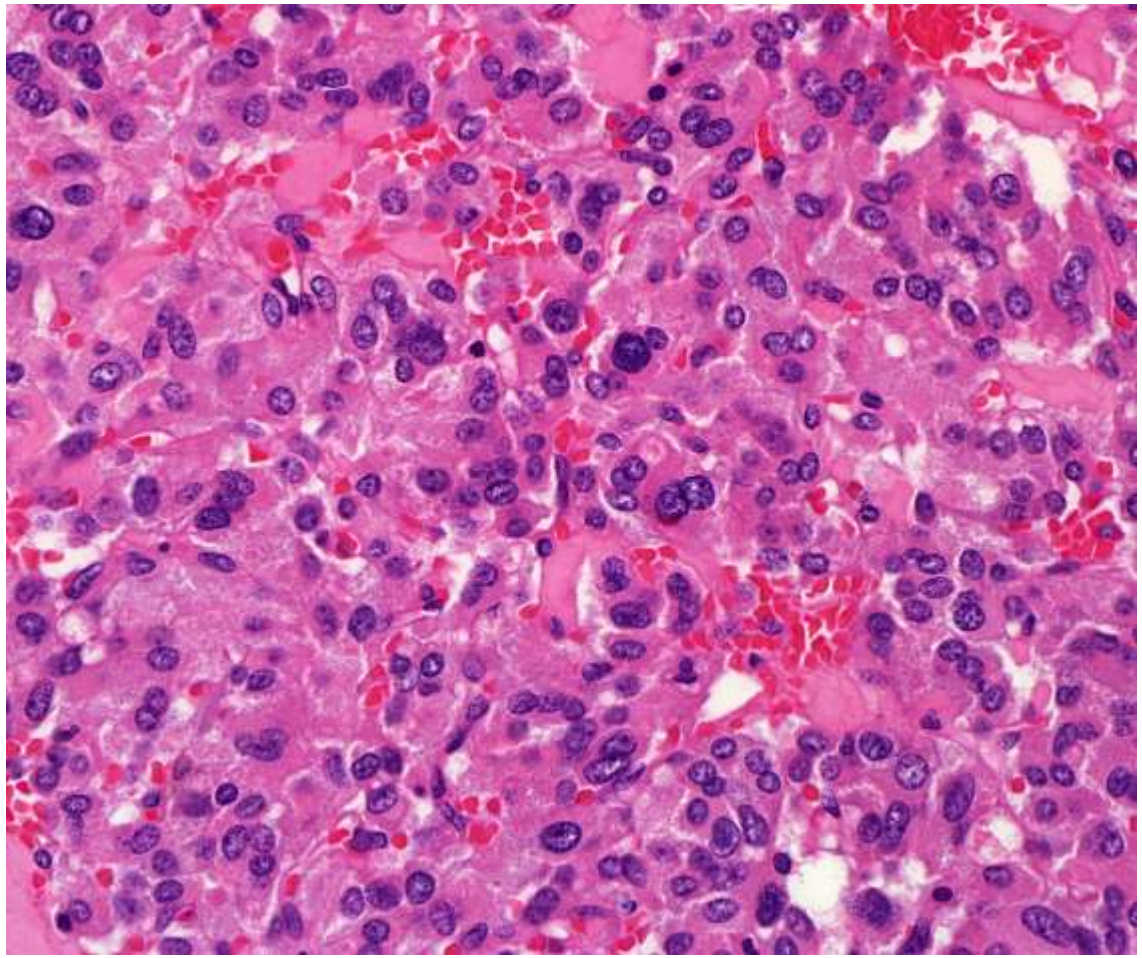
TARPSWG Retroperitoneal sarcoma pathology database

Retroperitoneal sarcoma pathology database:

To accrue as much quality data

Make the interface as easy to use

Dropdown menu



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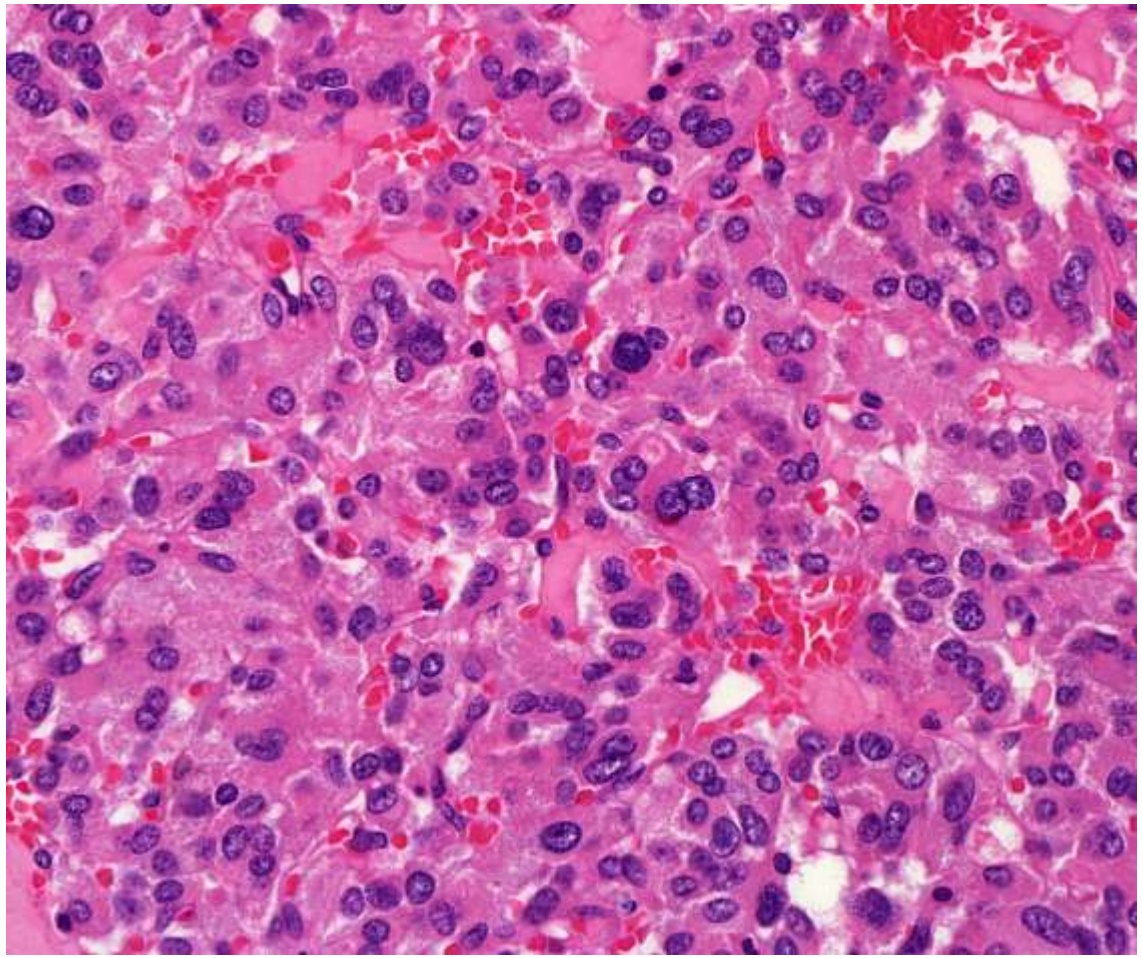
Limited free text

Data entry by surgeons
Time constraints

TARPSWG pathology working party:
Most useful parameters decided
-Minimum dataset to capture information for particular research points

-Further details (comprehensive dataset)



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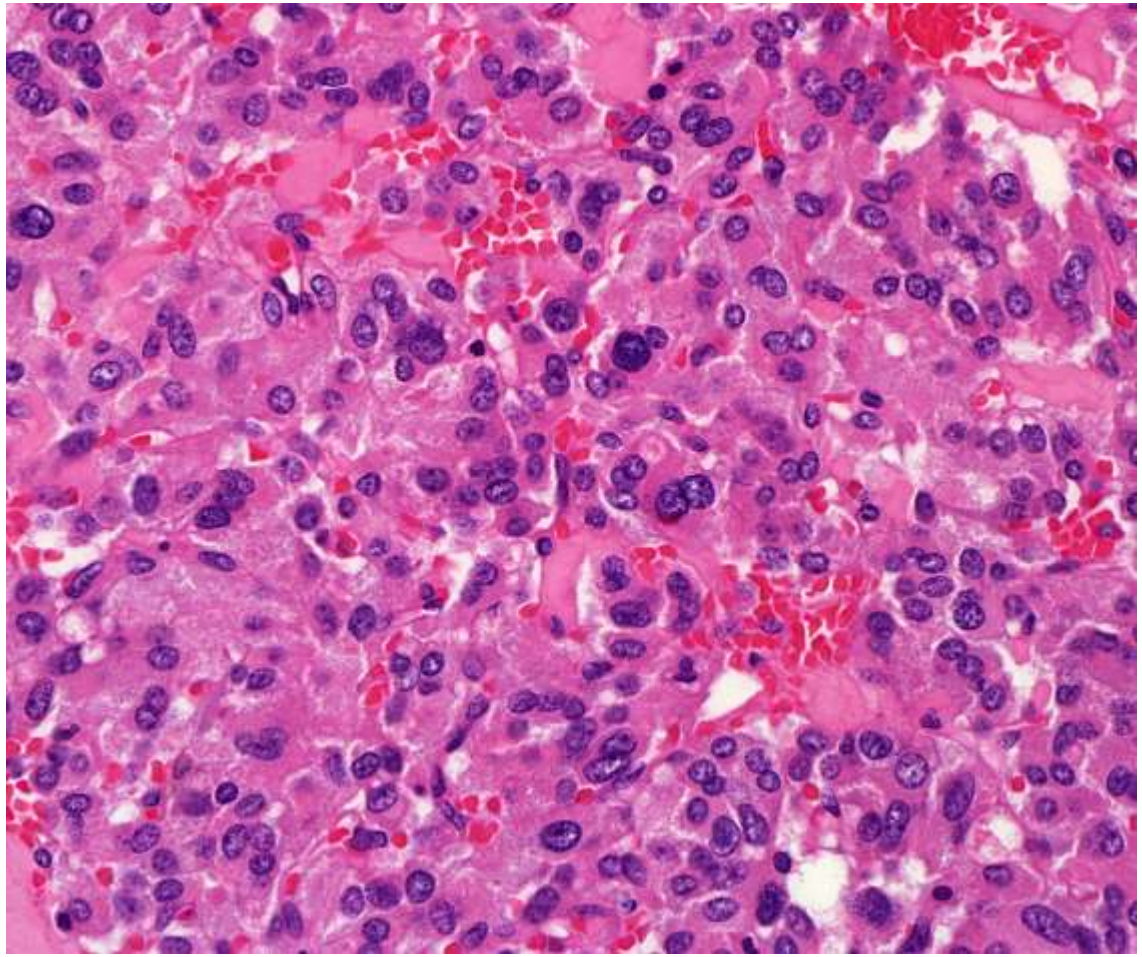
Minimum dataset



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1) Procedure

- Neoadjuvant therapy

2) Tumor size

- Entire mass (mm)

- For DDL, size of dedifferentiated focus (mm)

* Working group to devise guidelines on recommendation for consistent tumour grossing to allow consistent measurements

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3) Histologic subtype

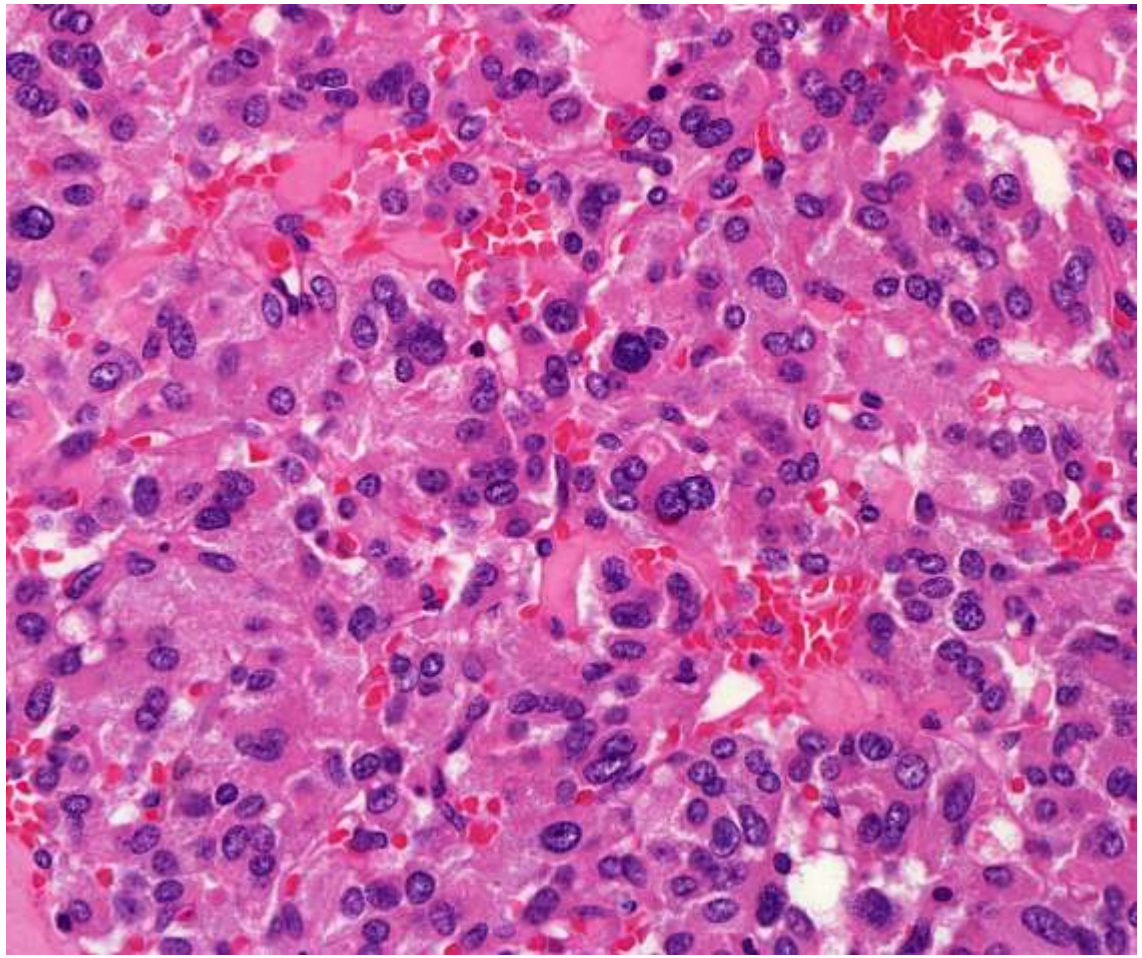
(WHO Classification of Soft Tissue and Bone Tumours 2020)

Exclude

- non-mesenchymal neoplasms
- uterine sarcoma
- GIST
- metastases

Sarcomas

- uncertain malignant potential
- benign
- include common entities in this site (e.g. solitary fibrous tumor)



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Well-differentiated liposarcoma (WDL)

Dedifferentiated liposarcoma (DDL)

Liposarcoma/adipocytic neoplasm, other

Leiomyosarcoma (LMS) and other smooth muscle neoplasms

Malignant peripheral nerve sheath tumour and other nerve sheath neoplasms

Solitary fibrous tumour (SFT)

Inflammatory myofibroblastic tumour

Low-grade fibromyxoid sarcoma (LGFMS) and sclerosing epithelioid fibrosarcoma (SEF)

Extraskeletal osteosarcoma

PEComa

Small round cell sarcomas

Epithelioid haemangioendothelioma

Angiosarcoma

Rhabdomyosarcoma (not part of DDL; non-*MDM2*)

Synovial sarcoma

Undifferentiated sarcoma (not DDL; non-*MDM2*)

Intimal sarcoma

Other primary retroperitoneal sarcoma

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4) Microscopic description

Mitotic activity

(__per 2 mm^2)[a]

Necrosis

(0%; <50%; ≥50%)[b]

Lymphovascular invasion

(Present; Absent; Not assessed)

Lymph nodes

(None identified; identified; positive for malignancy)

Histologic organ invasion

absent/perivisceral/initial/advanced

Response to neoadjuvant treatment

Volume of residual tumour:

- No stainable tumour cells[LSEP]

- Single stainable tumour cells or small clusters (overall <1% of whole specimen)

- >1%-<10% stainable tumour cells[LSEP]

- 10%-<50% stainable tumour cells

- ≥50% stainable tumour cells

Wardelmann et al. 2016

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5) Grade

FNCLCC grade
- 1
- 2
- 3

- Not applicable
  - Neoadjuvant therapy
  - Non-graded sarcoma
  - Cannot be assessed

6) Margin status

* working group to develop consensus on approach to margins

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7) Ancillary Investigations

•**Immunohistochemistry (select all that apply, and result [percentage)**

(Can be from biopsy or resection specimen, or combination)

MDM2 (nuclear): +/- and %
CDK4 (nuclear): +/- and %
Desmin: +/- and %
Smooth muscle actin: +/- and %
H-caldesmon: +/- and %
Myogenin (nuclear): +/- and %
MyoD1 (nuclear): +/- and %
MUC4: +/- and %
S100 protein: +/- and %
SOX10 (nuclear): +/- and %
H3K27me3 (loss): preserved _____ / lost _____ / patchy: _____ / %:_____
CD34: +/- and %
ERG (nuclear): +/- and %
STAT6 (nuclear in SFT) +/- and %
Keratin, clone: +/- and %
Epithelial membrane antigen: +/- and %
Estrogen receptor (nuclear): positive _____ (%, intensity) / negative _____
Progesterone receptor (nuclear): positive _____ (%, intensity) / negative _____
Other: +/- and %
Ki-67: _____ %

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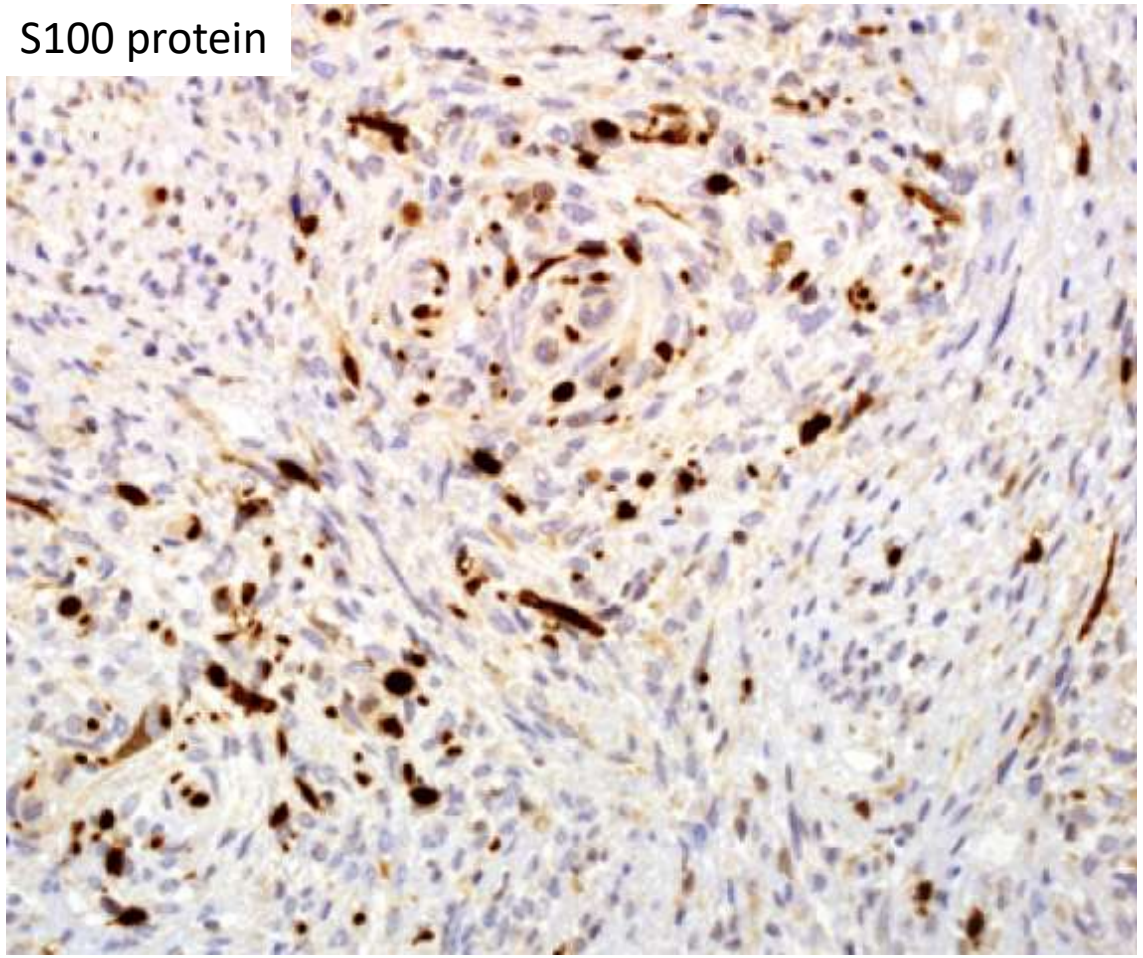
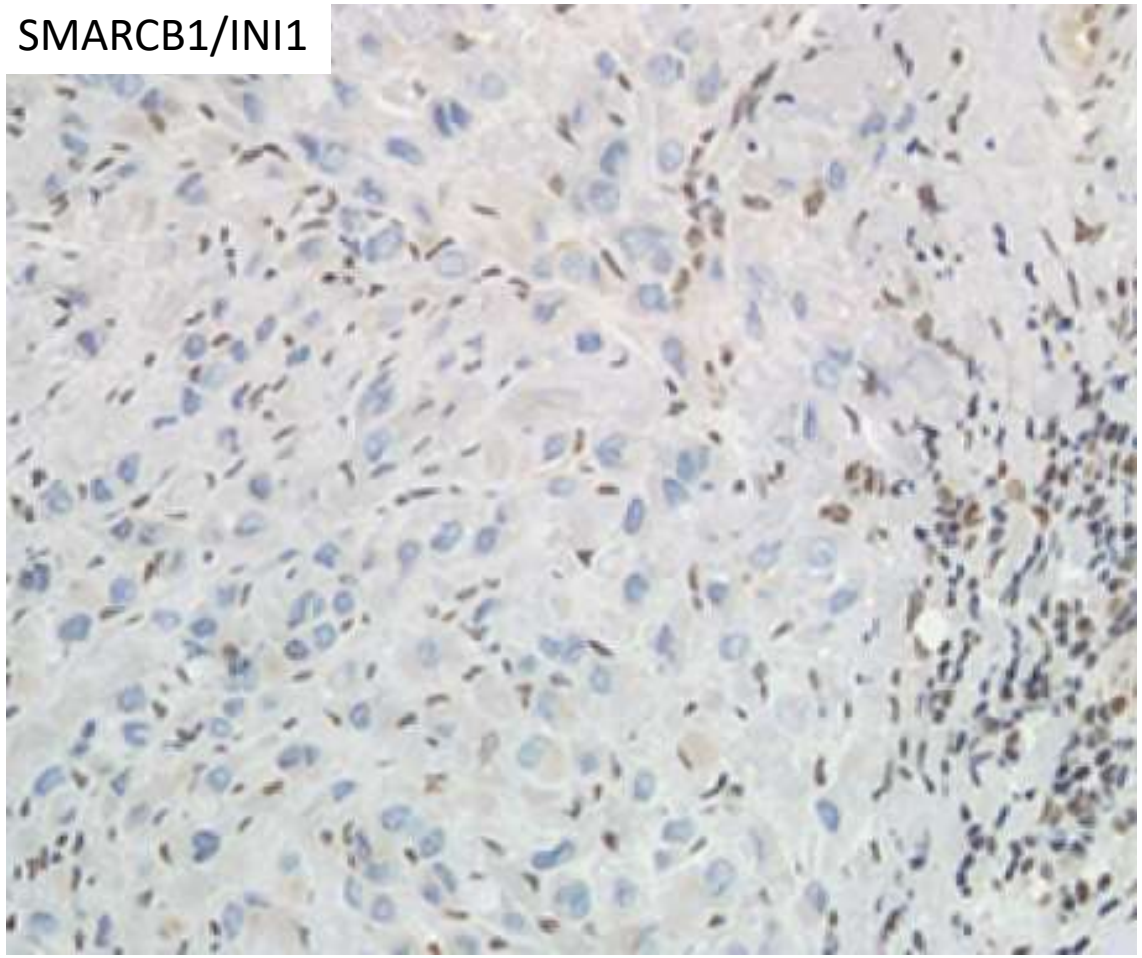
S100 protein



SMARCB1/INI1



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7) Molecular (specify assay and result)

6.2.1 FISH: _____

6.2.2 RT-PCR: _____ ;
Band confirmed by Sanger?_____

6.2.3 NGS
(Specify Archer, Illumina, Oncomine, NanoString): _____

6.2.4 Other: _____

Biobanking

Tissue banked pre-pathology

Tissue banked by pathology

Additional FFPE from tumour

Additional FFPE from non-neoplastic tissue

Blood

Fresh frozen tissue (_____ corresponding H&E obtained)

TARPSWG Minimal macroscopic criteria for retroperitoneal sarcomas

Members of the Cancer Committee, **College of American Pathologists.** Protocol for the examination of specimens from patients with tumors of soft tissue. Arch Pathol Lab Med. 2010 Apr;134(4):e31-9.

Rubin BP, Cooper K, Fletcher CD, Folpe AL, Gannon FH, Hunt JL, Lazar AJ, Montag AG, Peabody TD, Pollock RE, Reith JD, Qualman SJ, Rosenberg AE, Weiss SW, Krausz T

Fisher C. Dataset for histopathological reporting of soft tissue sarcomas. Standards and datasets for reporting cancers. **Royal College of Pathologists** 2018.

Soft Tissue Sarcoma Histopathology Reporting Guide - Resection Specimens. **International Collaboration on Cancer Reporting;** Sydney, Australia. ISBN: 978-1-922324-19-1

Dei Tos AP, Agaimy A, Bovée JVMG, Dickson BC, Doyle LA, Dry SM, Gronchi A, Hameed M, Hemming C, Liegl-Atzwanger B, Thway K, Wagner AJ, Wang J, Yoshida A, Fletcher CDM (2021).

Protocol for the Examination of Resection Specimens From Patients With Soft Tissue Tumors, **College of American Pathologists,** 2021.

Laurini J et al

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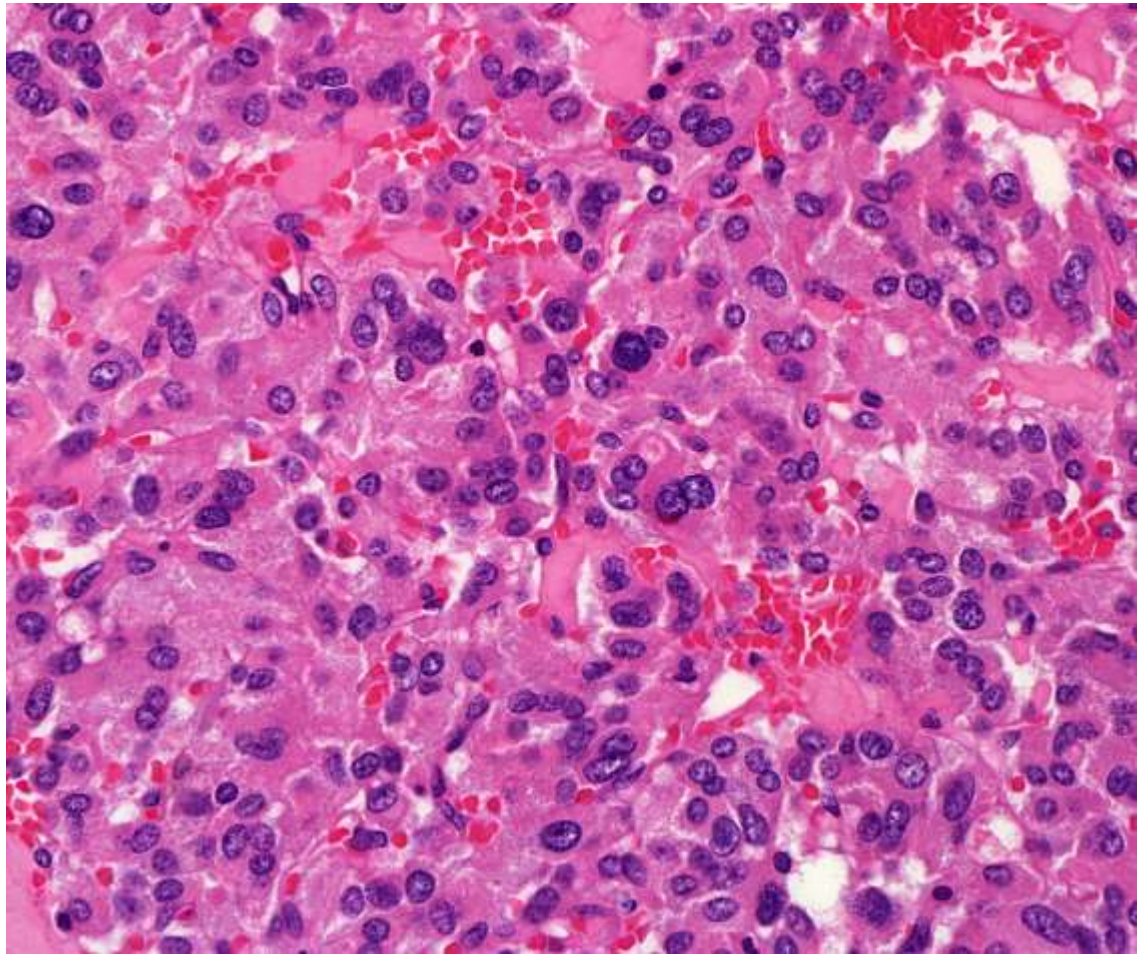
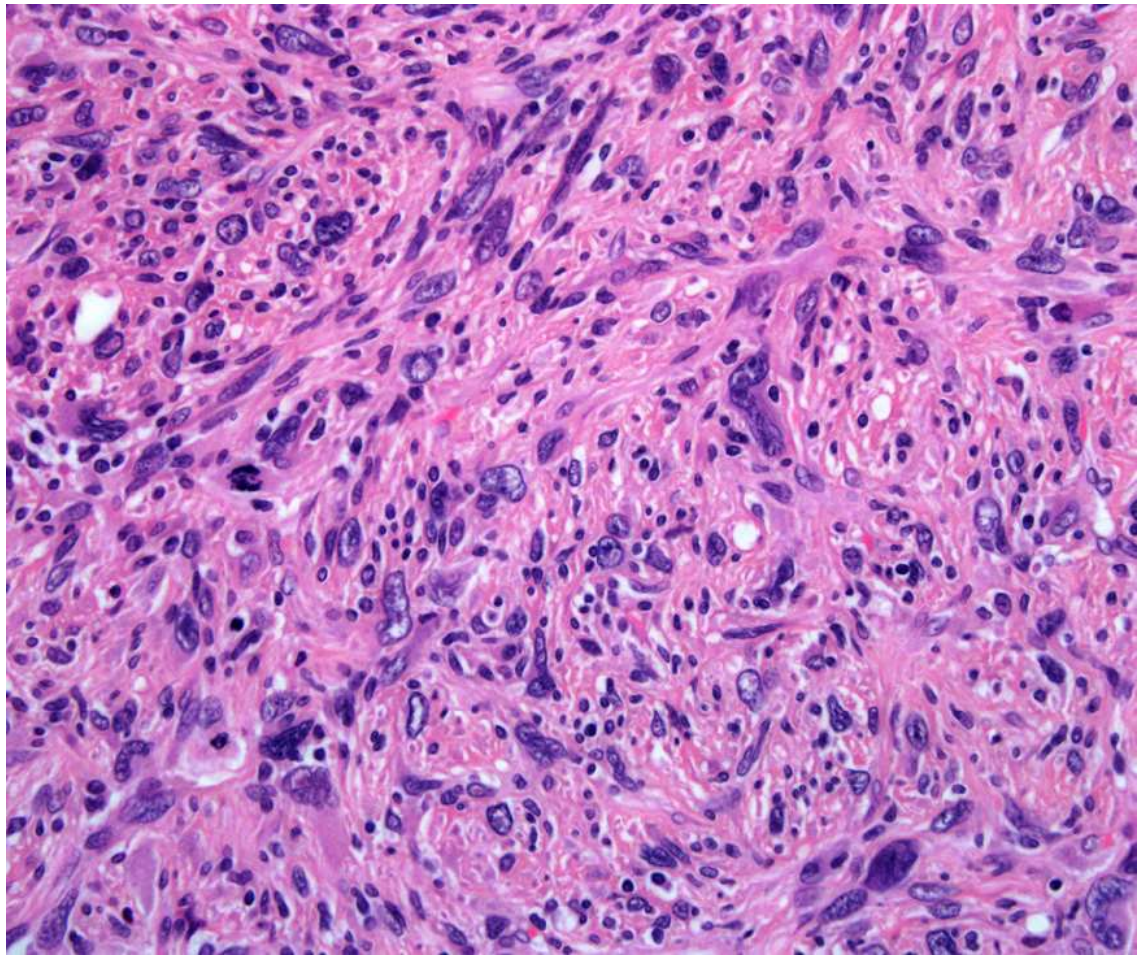
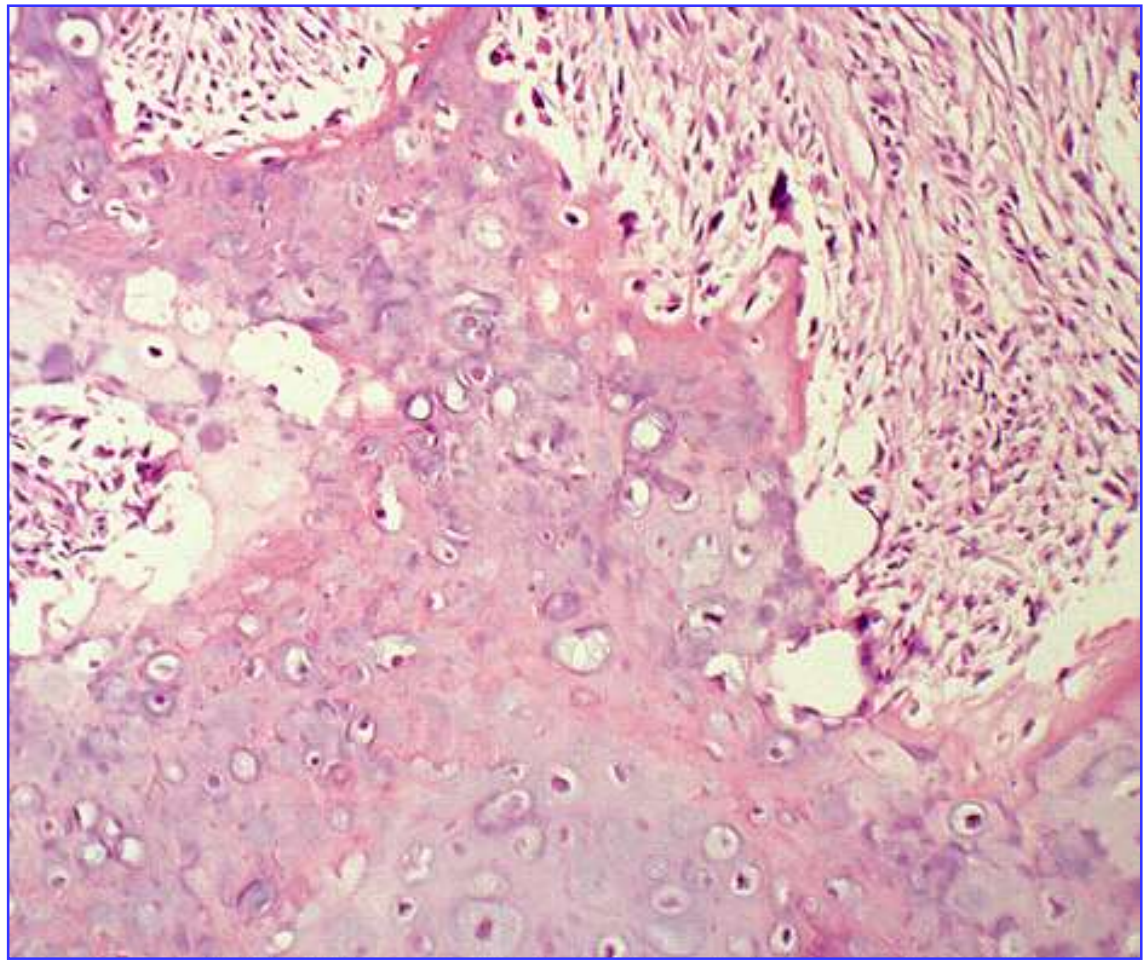
Expanded list



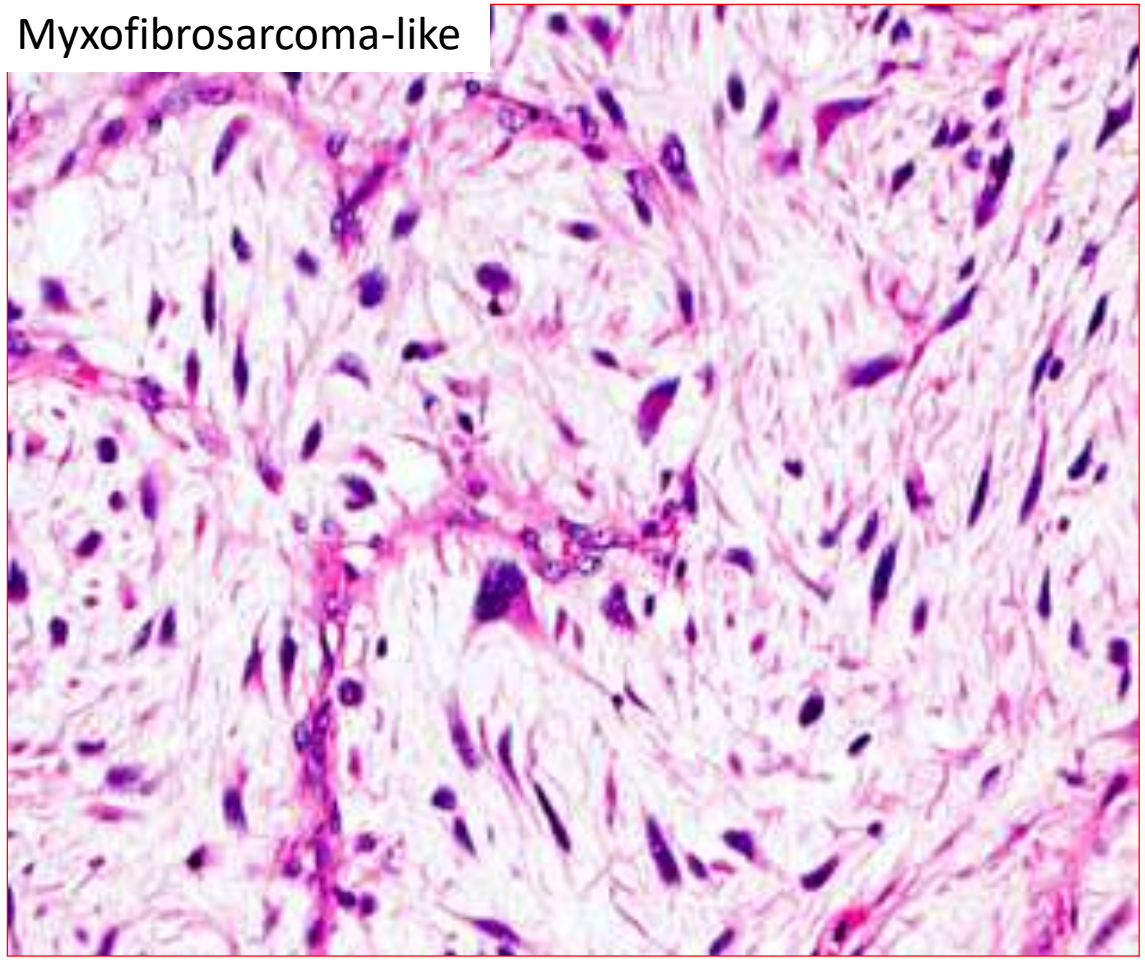
Dedifferentiated liposarcoma



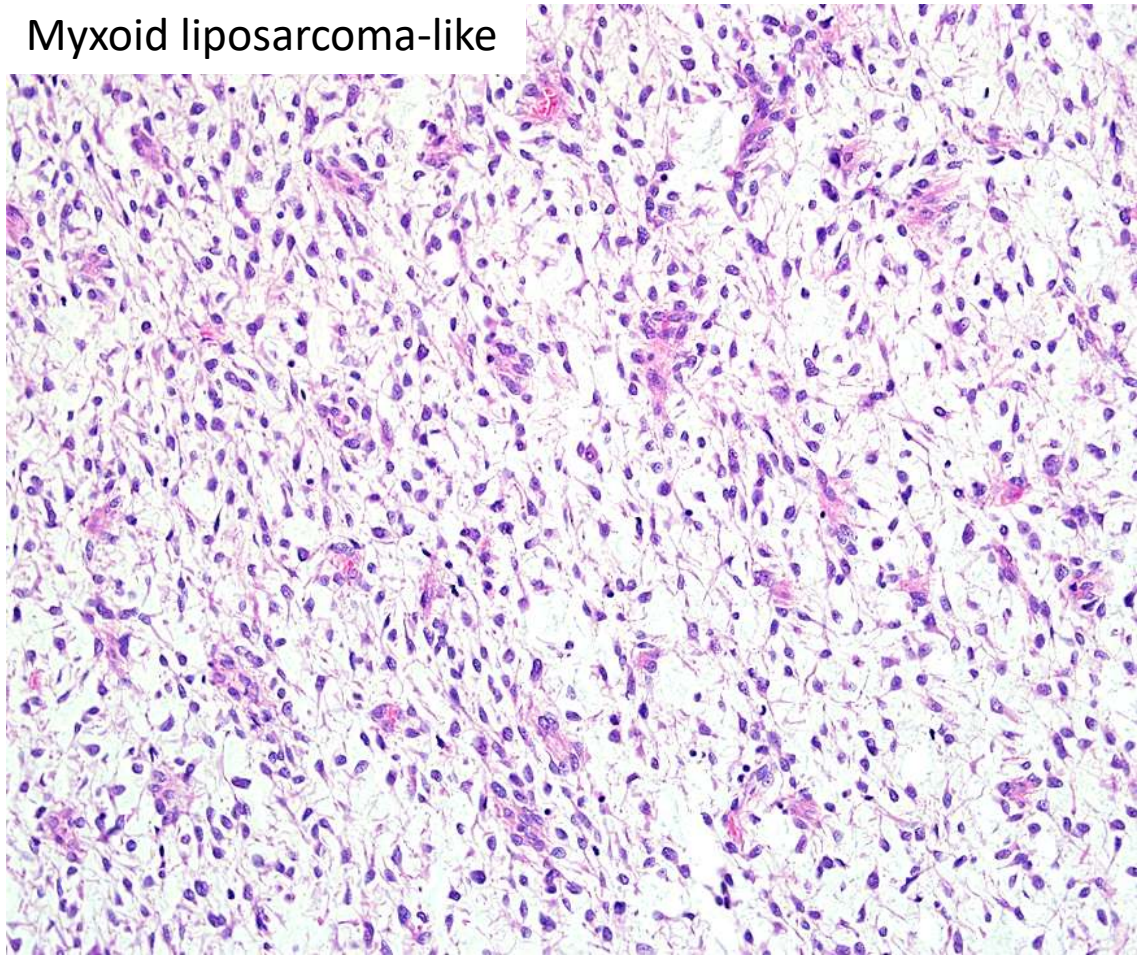


Dedifferentiated liposarcoma

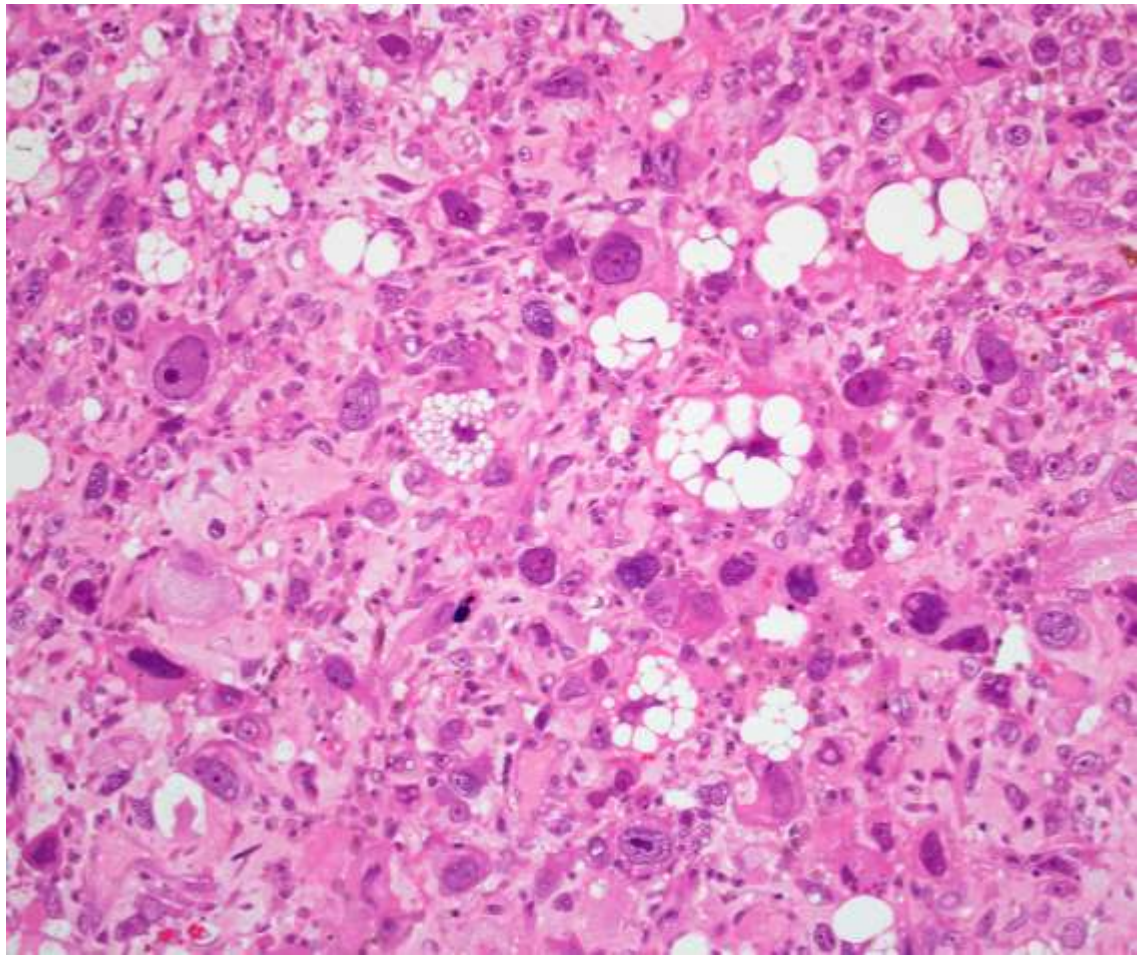
Myxofibrosarcoma-like

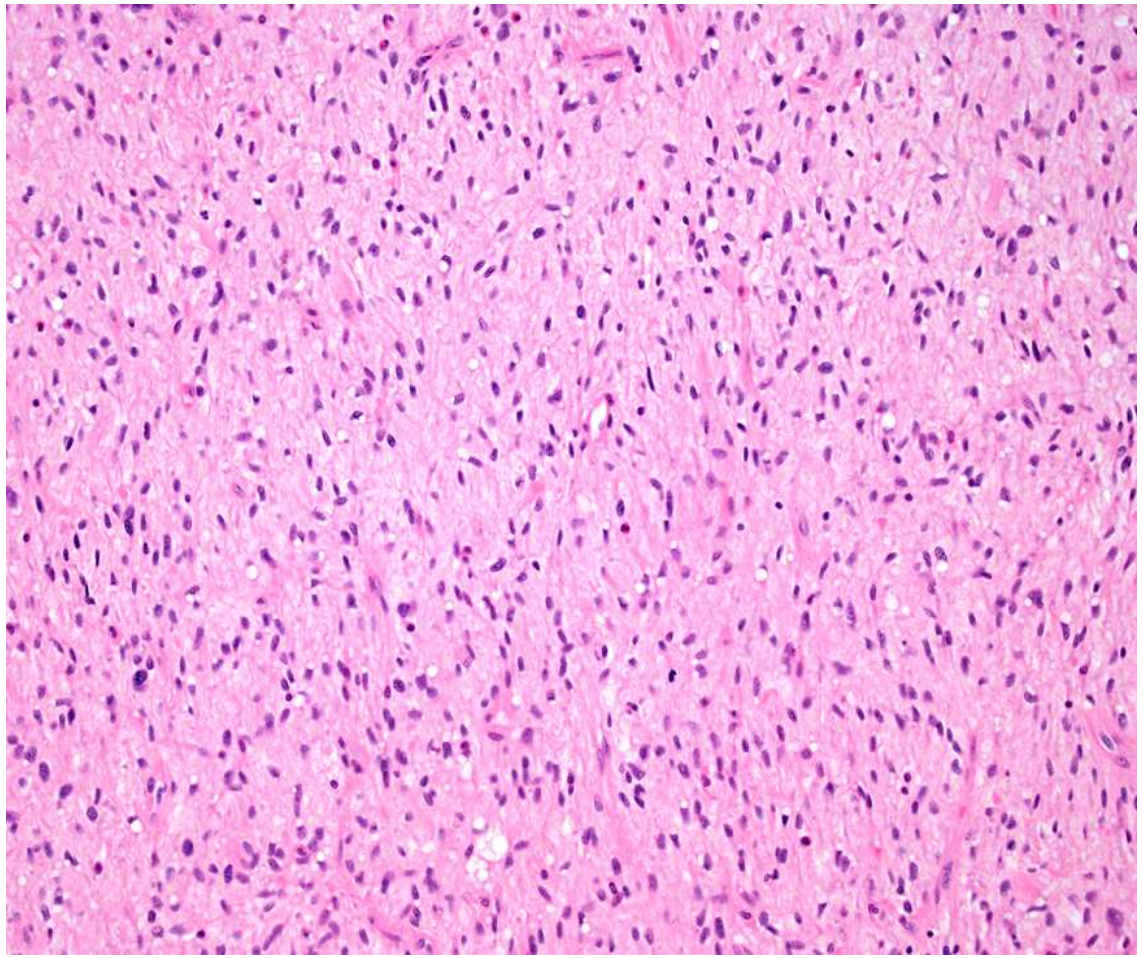


Myxoid liposarcoma-like



Dedifferentiated liposarcoma





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Dedifferentiated liposarcoma

Subtype: (FNCLCC differentiation score 2-3)

•**Conventional (not otherwise specified (NOS))**

• Percentage: <10%/10-30%/30-60%/60-90%/90%

•-**So-called histologically 'low-grade' dedifferentiation pattern** (NOT clinically low-grade; FNCLCC differentiation score 2-3)

• Percentage:<10%/10-30%/30-60%/60-90%/90%

• **'Homologous' lipoblastic (pleomorphic liposarcoma-like)**

• Percentage:<10%/10-30%/30-60%/60-90%/90%

• **Meningothelial-like whorls and metaplastic bone formation**

• Percentage: <10%/10-30%/30-60%/60-90%/90%

Myxofibrosarcoma-like

• Percentage: <10%/10-30%/30-60%/60-90%/90%

Epithelioid morphology

• Percentage: <10%/10-30%/30-60%/60-90%/90%

• **Heterologous differentiation:**

• - Metaplastic bone
- Osteosarcoma
- Metaplastic chondroid
- Chondrosarcoma
- Smooth muscle, malignant (leiomyosarcoma-like)
- Smooth muscle, benign
- Skeletal muscle
- 'Myofibroblastic'

Percentage: <10%/10-30%/30-60%/60-90%/90%

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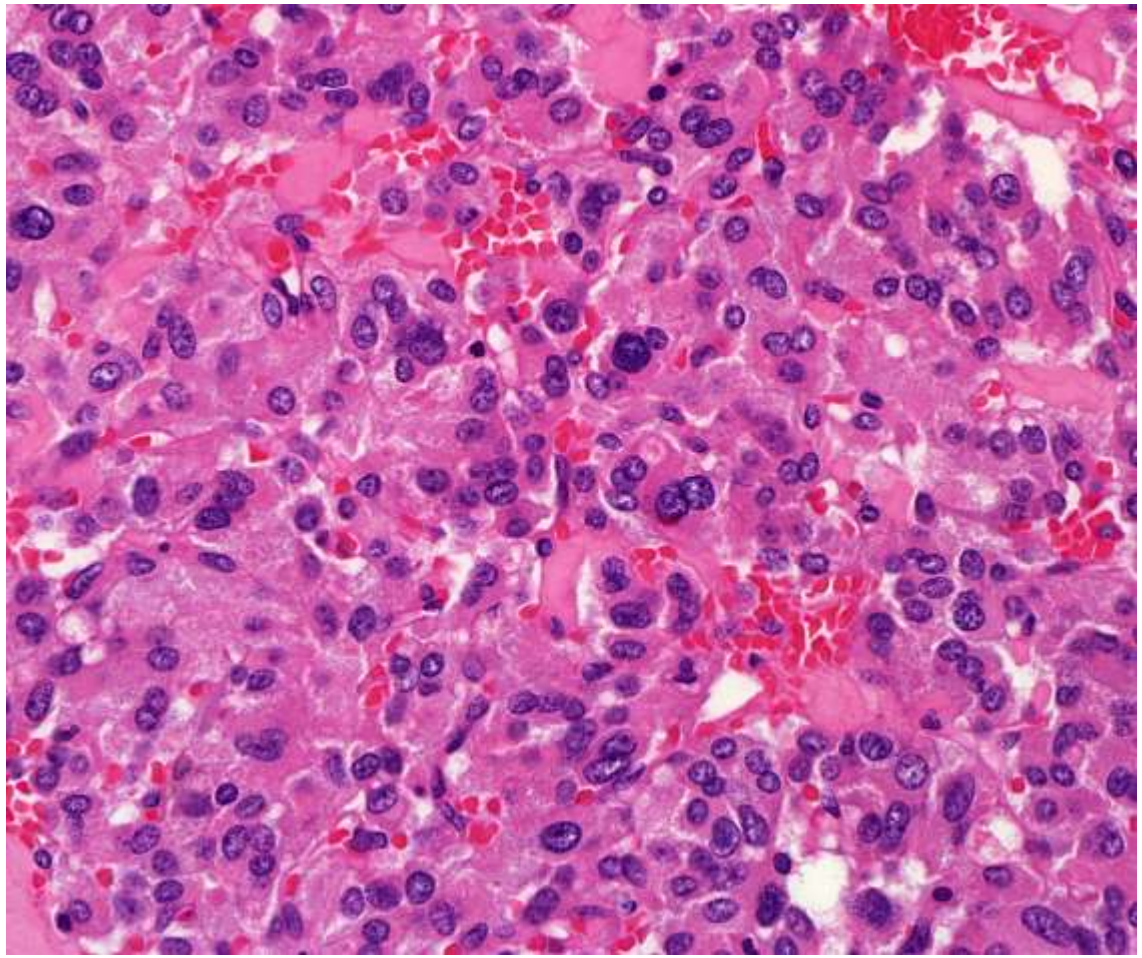
Minimum dataset and comprehensive dataset:

Main difference is extent of granularity of the fields related to tumor types

Sites with sufficient resources to capture more detail

Dropdown menus for ‘unknown’/’not listed’

Aim for comprehensive dataset to be collected for majority of patients



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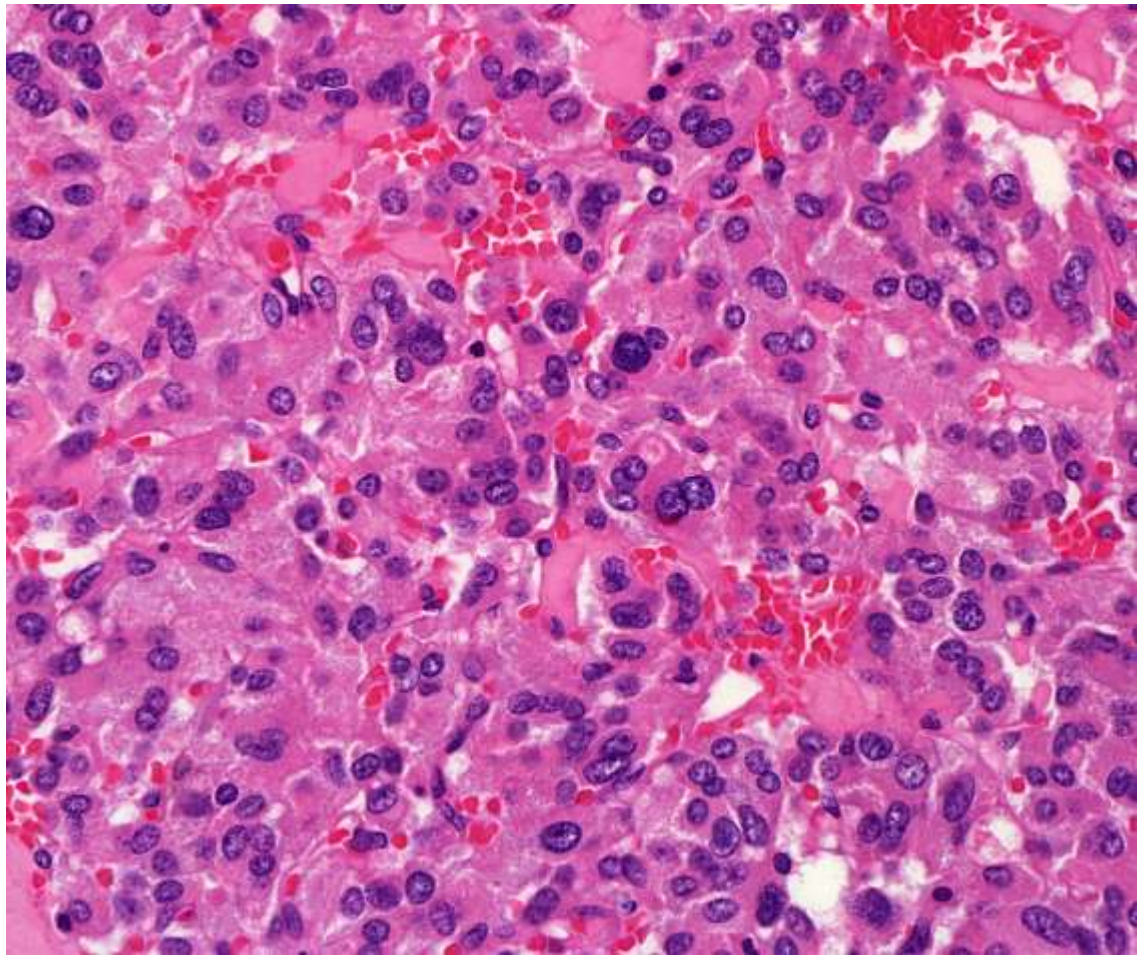
Consistency between centers:

Standardise pathology data

Appendix for reporting pathologists (pathology working committee)

Minimum dataset for gross parameters, particularly:
Size
Necrosis
Marginal status



Thank you!

TARPSWG
Retroperitoneal Sarcoma Pathology Working Group

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