Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

SLIDE SEMINAR

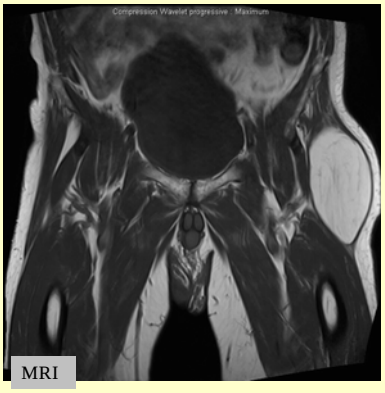
Case n°1

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°1 -

Clinical context

- a 78 years old man
- no previous disease
- a slow enlarging mass
- in the left hip area
- 13 cm (at time of diagnosis)



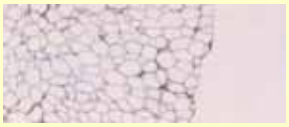
MRI

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°1 -

Core needle biopsy

Standard staining

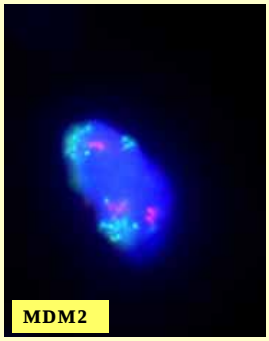


Immunohistochemistry

MDM2 -

CDK4 -

FISH



Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°1 -

Diagnosis

Well-differentiated liposarcoma

Grade 1 (FNCLCC)

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

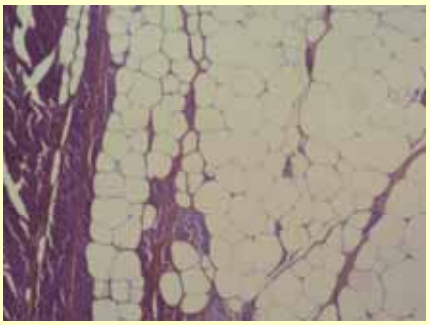
Slide seminar - case n°1 -

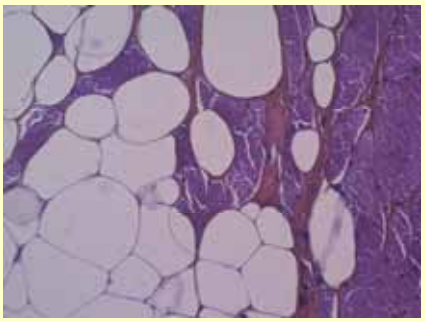
Macroscopy

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°1 -

Microscopy

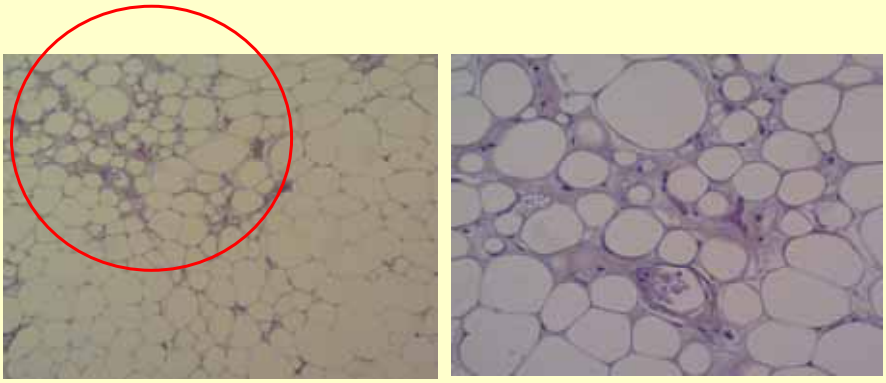




Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°1 -

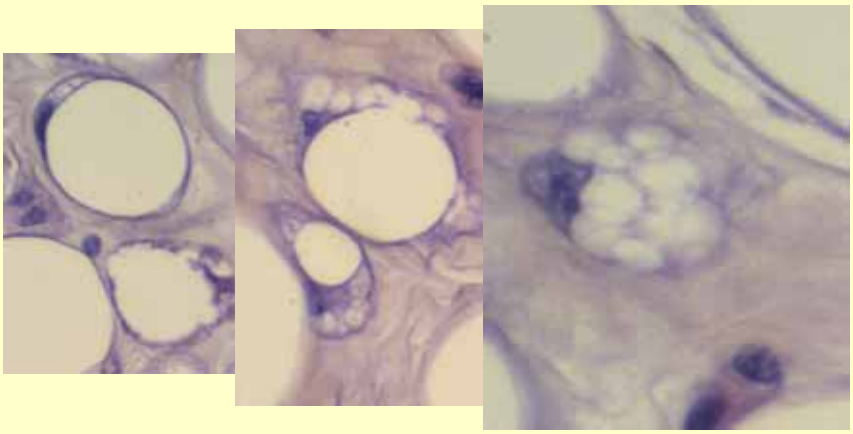
Microscopy



Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°1 -

Microscopy



Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°1 -

Well-differentiated liposarcoma (« lipoma-like »)
Grade 1 (FNCLCC)

Marginal resection

Margin value : focally less than 1 mm

Margin tissue : striated muscle

No complementary treatment (age)

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Well differentiated liposarcoma (1)

- 40-45% of all LPS;
- middle aged adult (60 y.) (extremely rare in children);
- males and females equally affected;
- deep soft tissue of limbs (+++), retroperitoneum, paratesticular region and mediastinum; subcutaneous tissue (skin rarely);
- painless enlarging mass (very large size in retroperitoneum).

- well-circumscribed and lobulated (mostly); fat necrosis in large lesions;
- morphologically subdivided in four subtypes :
  - adipocytic (lipoma-like),
  - sclerosing,
  - Inflammatory,
  - spindle cell,

  (more than one pattern is possible in the same lesion).

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

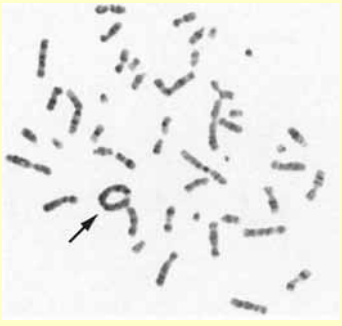
Well differentiated liposarcoma (2)

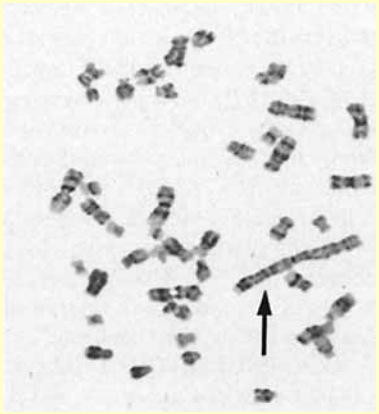
- **Adipocytic (lipoma-like) *vs* lipoma** :
  - variable size of tr cells,
  - focal nuclear atypia and hyperchromasia,
  - mono- or multivacuolated lipoblasts
    (can be absent even in extensive sampling)

- **Supernumerary rings and giant marker chromosomes** containing **amplification of 12q(14-15) region** including the **MDM2** and neighbouring genes (CDK4).
- MDM2 and CDK4 expression detected by immunohistochemistry.
- MDM2 and CDK4 amplification detected by FISH.

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Well differentiated liposarcoma (3)





Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Well differentiated liposarcoma (4)

- Classified as **intermediate (locally aggressive) tumor** (« atypical lipomatous tumour » : ALT/WD LPS) (WHO 2002).
- Good prognosis with no recurrence after complete excision (wide excision with clear margin).
- Anatomic location : the most important prognostic factor (extremities and superficial locations *vs* deep locations).

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

SLIDE SEMINAR

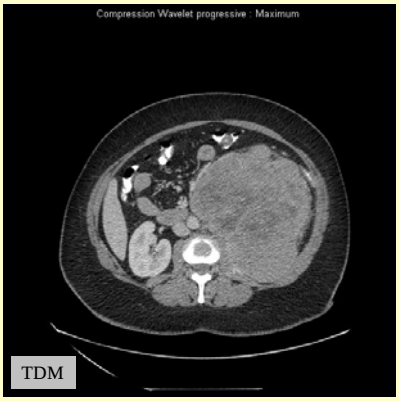
Case n°2

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°2 -

Clinical context

- a 51 years old woman
- no previous disease
- headache
- cerebral metastasis
- a (22 x 18) cm mass in the retroperitoneal area, « close to the left kidney ».

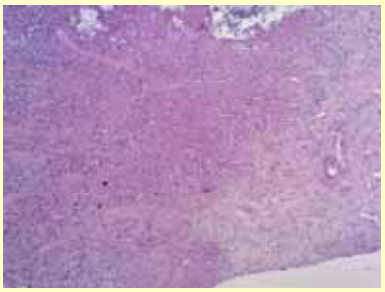


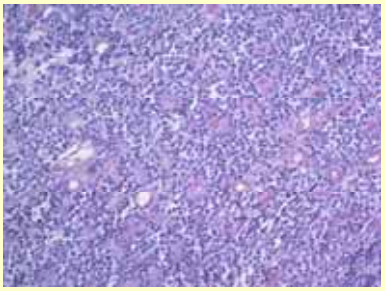
Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°2 -

Core needle biopsy

Standard staining



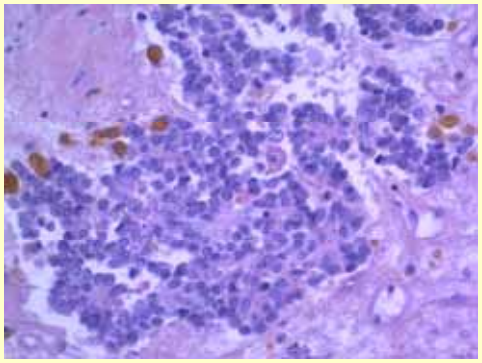


Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°2 -

Core needle biopsy

Standard staining



Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°2 -

Core needle biopsy

Immunohistochemistry

- CK AE1/AE3 : negative
- CD45 : negative
- Chromogranin A : negative
- Synaptophysin : positive (+)
- CD99 : positive (+++/mb)

Molecular biology

RT-PCR (frozen material) :

Presence of a specific transcript of Ewing's tumor family (Dr O Delattre I. Curie)

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°2 -

Diagnosis

Extraskeletal primitive peripheral neuroectodermal tumor (Peripheral neuroepithelioma)

High grade malignant tumor

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Slide seminar - case n°2 -

Treatment

- Multiples metastases in brain and bones at the time of the biopsy.
- Patient under treatment (palliative chemotherapy).

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

ES/PNET Family (1)

• Ewing's sarcoma and neuroepithelioma are round-cell tumors that are regarded as two morphologic variants of the same entity (PNET), based on similar clinical, immunohistochemical and molecular profiles.

• The ES family is currently defined by the presence of specific translocations mainly involving the EWSR1 gene which is fused to an ETS family gene (FLI-1, ERG or ETV1).

• These tumors express CD99 in a membranous pattern, a sensitive but non specific feature.

• They occur usually in bone and occasionally in deep soft tissues (paraspinal region, chest-wall, lower extremities) and rarely in others sites (kidney, urinary bladder, prostate, skin/subcutaneous tissue)

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

ES/PNET Family (2)

ES /PNET translocations

t(11;22)(q24,q12) *EWS-FLI1* (90%)
t(21;22)(q22,q12) *EWS-ERG* (5%)
t(7;22)(p22,q12) *EWS-ETV1* (<1%)
t(2;22)(q33,q12) *EWS-FEV* (<1%)
t(17;22)(q12,q12) *EWS-E1AF* (1%)
t(16;21)'p11,q22) *FUS-ERG* (<1%)

ES/PNET Family (3)

- Differential diagnosis :
  - undifferentiated carcinoma (primary or metastatic) (small cell carcinoma, poorly differentiated neuro-endocrine carcinoma),
  - lymphoma,
  - poorly differentiated sarcoma (synovial sarcoma, RMS, MPNST).

- Treatment is based on multimodal therapy associating chemotherapy (neo-adjuvant and adjuvant CT), and surgery with or without radiotherapy.

- Prognosis has been significantly improved by multimodal therapy but still remains relatively poor (5-year disaese-free survival around 60% for non metastatic patients at presentation)