

# The treatment of a retroperitoneal mass once the pathology is known



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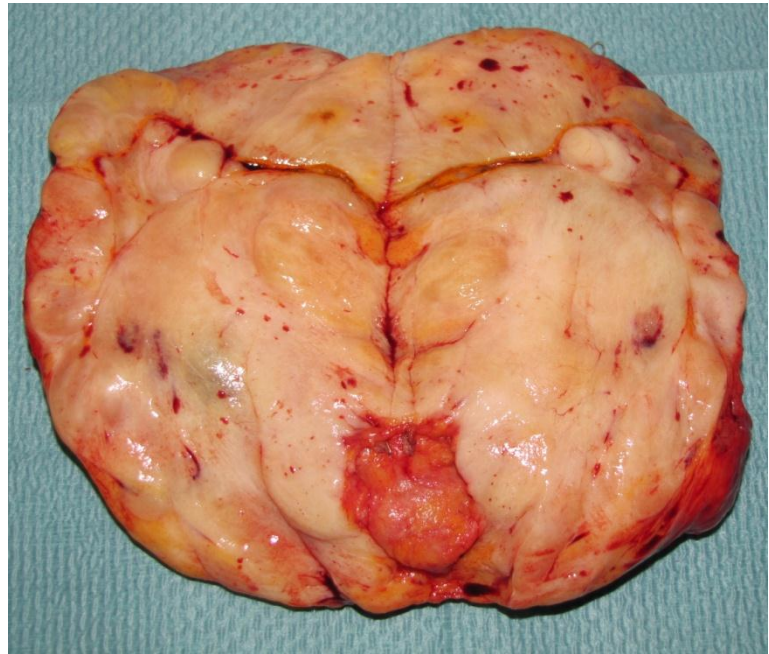
# Differentials

- NH Lymphoma
- Germinal Tumors
- Ganglioneuroma/Paraganglioma
- Adrenal Myelolipoma
- Angiomyolipoma/PEComa
- Retroperitoneal Sarcoma
- Vascular Sarcoma
- Psoas Sarcoma
- MPNST arising from femoral nerve

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# Ganglioneuroma

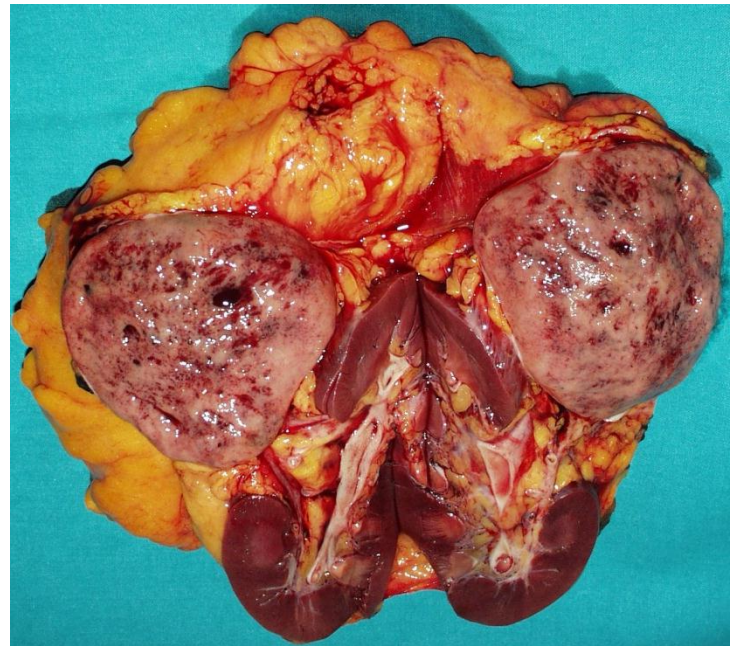
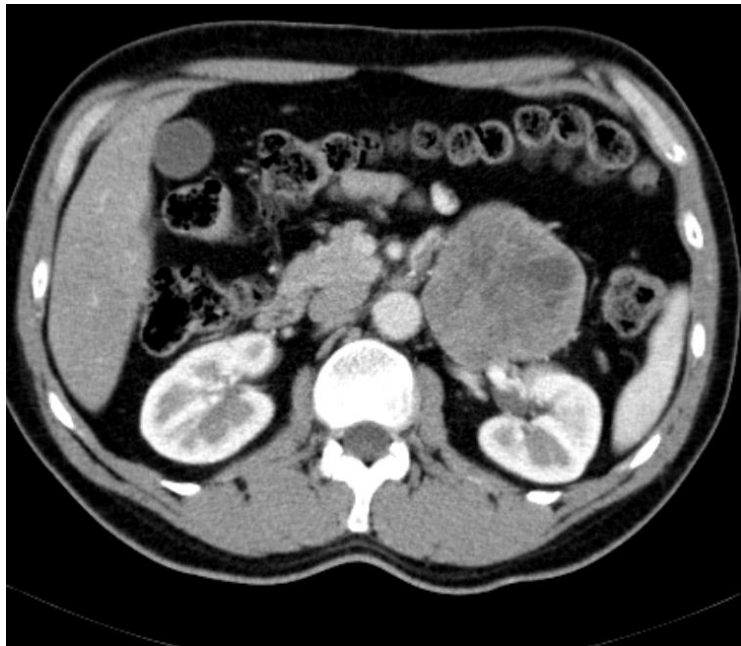




# Ganglioneuroma

Simple excision may be appropriate

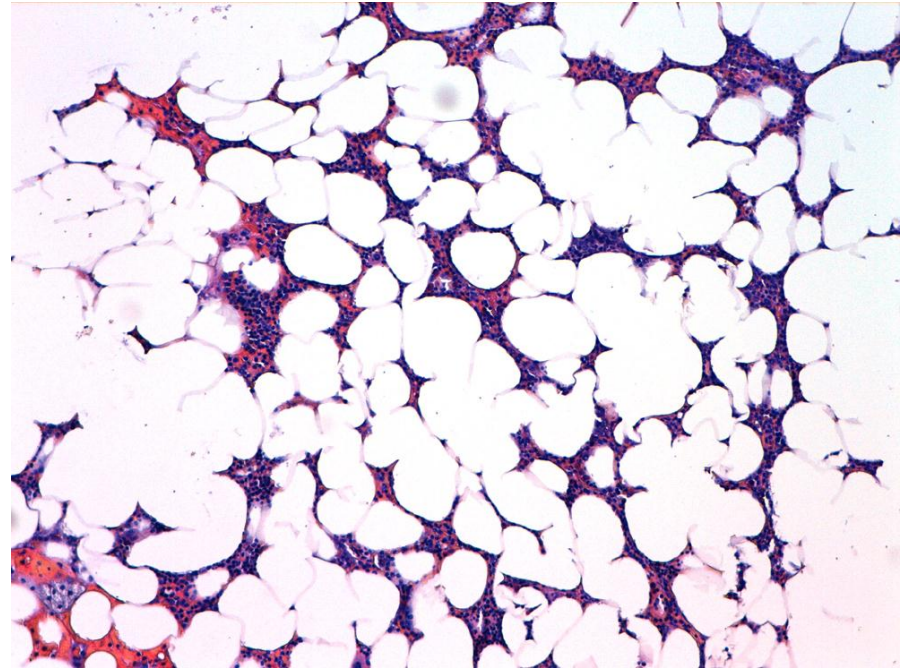
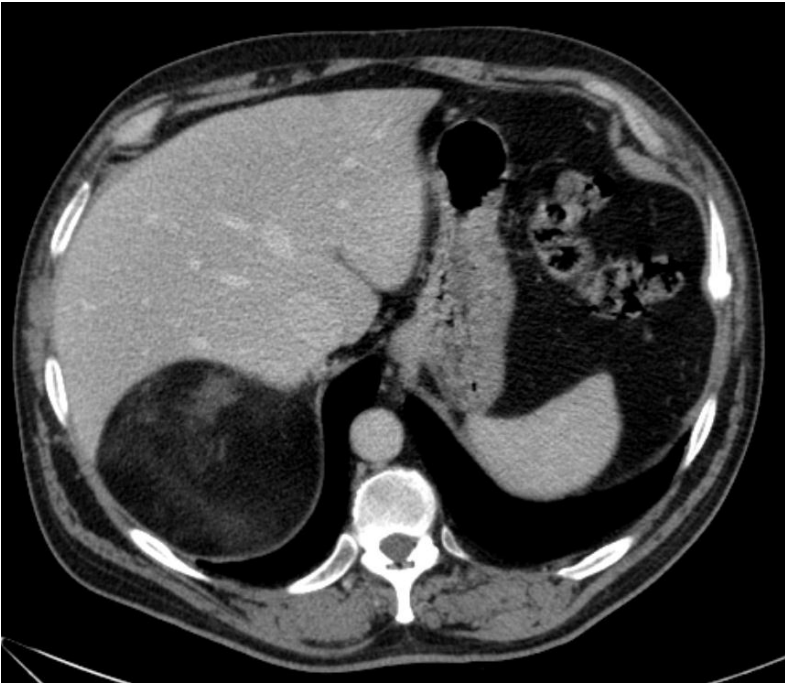
# Malignant Paraganglioma



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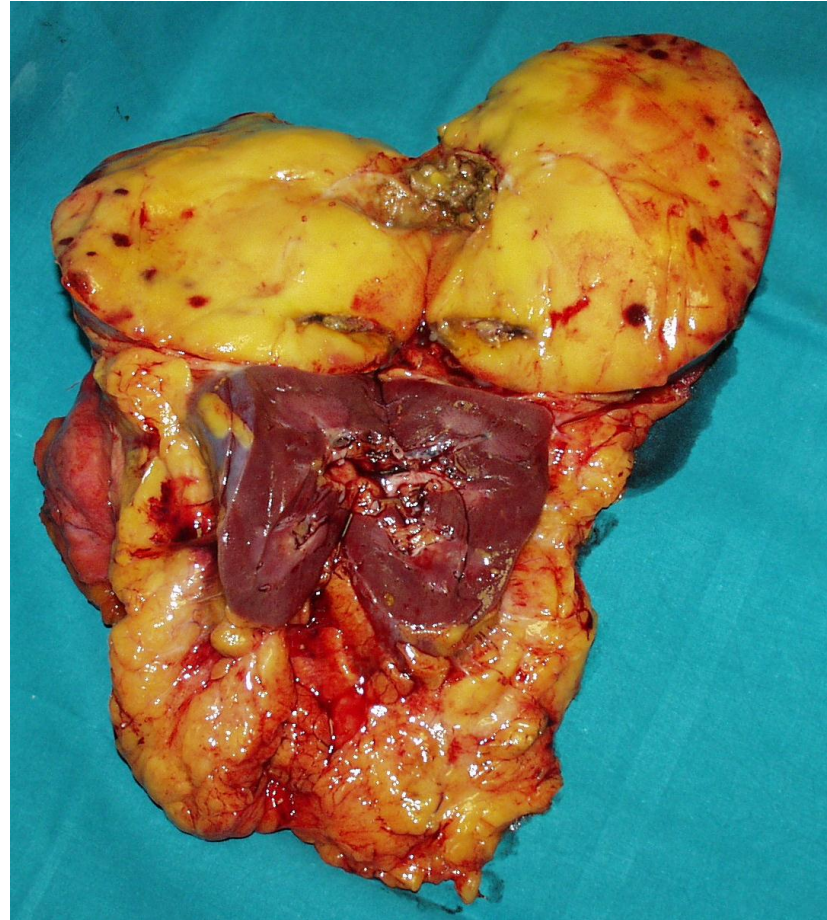
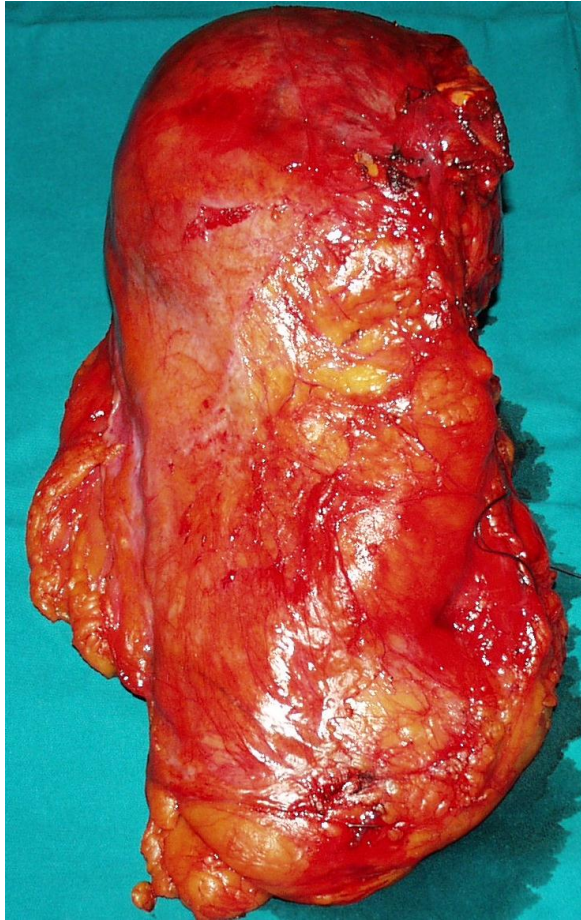
Simple excision may not be  
appropriate

# Adrenal Myelolipoma

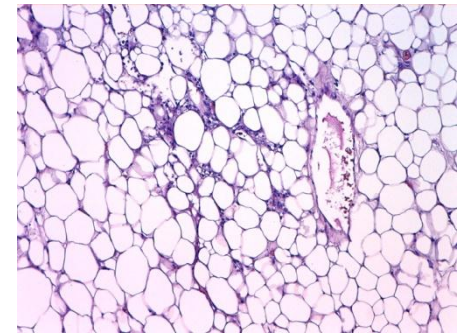
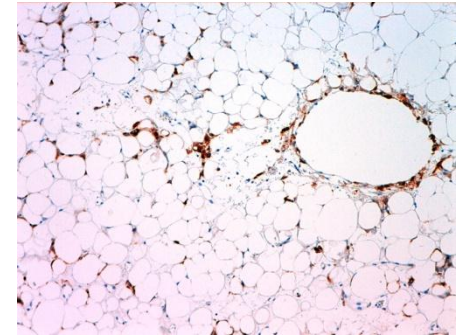




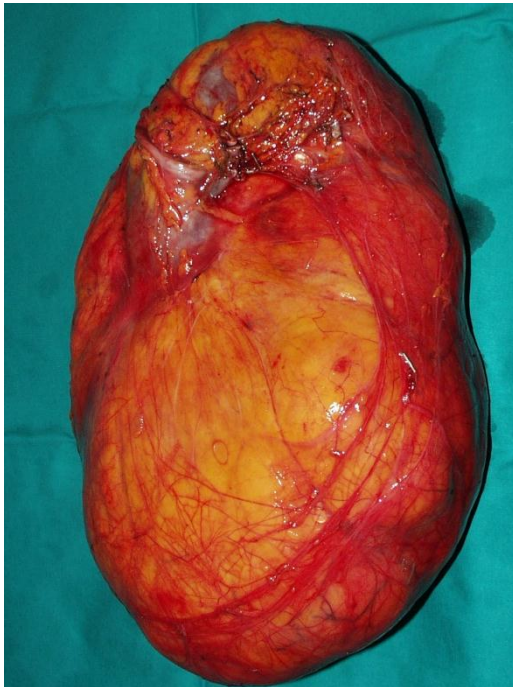
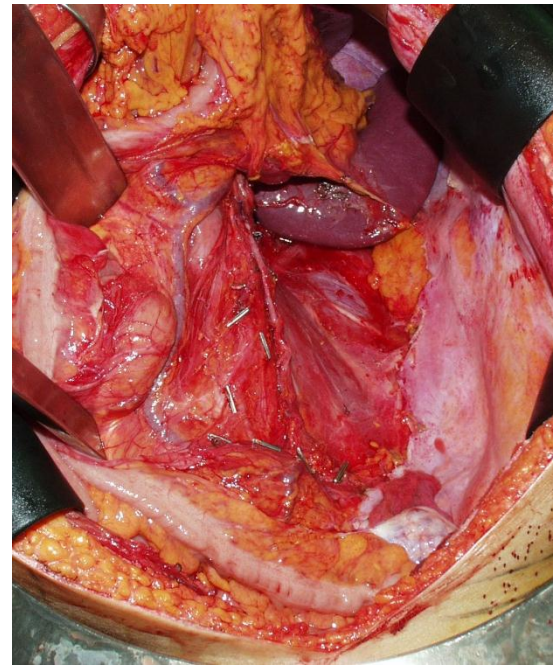
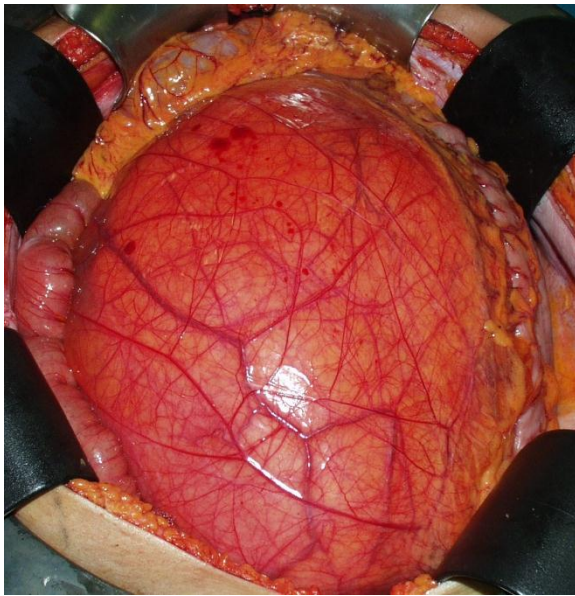
# Simple excision is appropriate



# Angiomyolipoma / PEComa





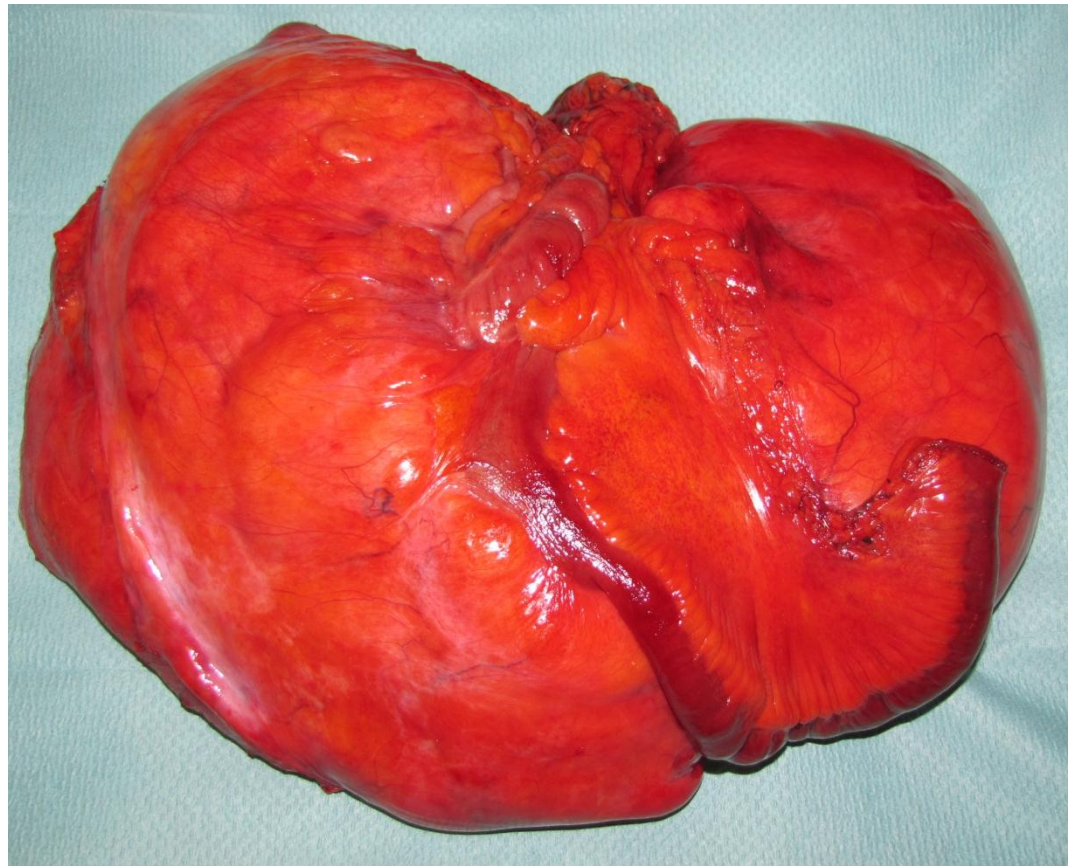


# Angiomyolipoma / PEComa

Simple excision en bloc with the ipsilateral kidney



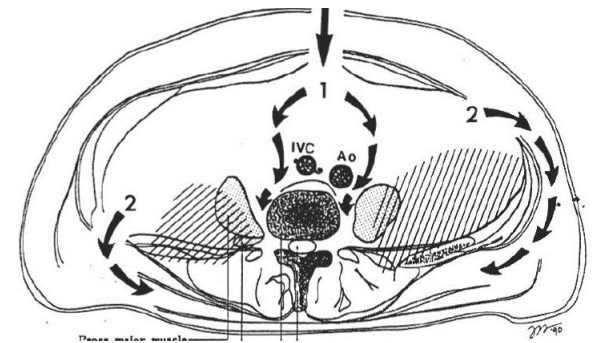
# Retroperitoneal sarcoma





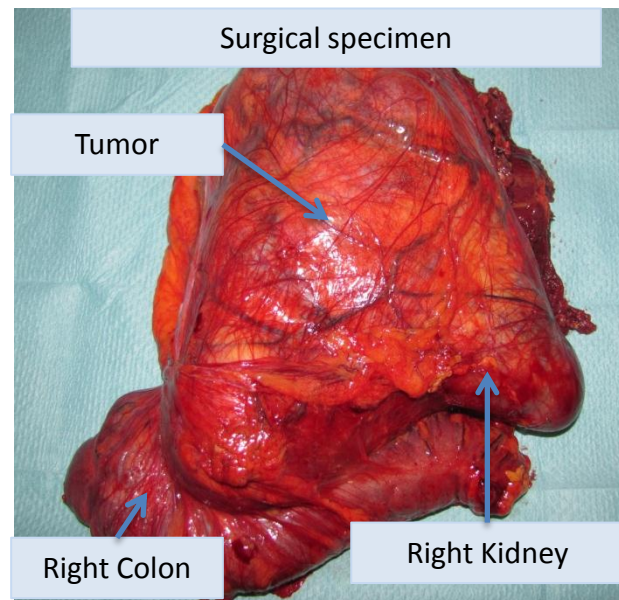
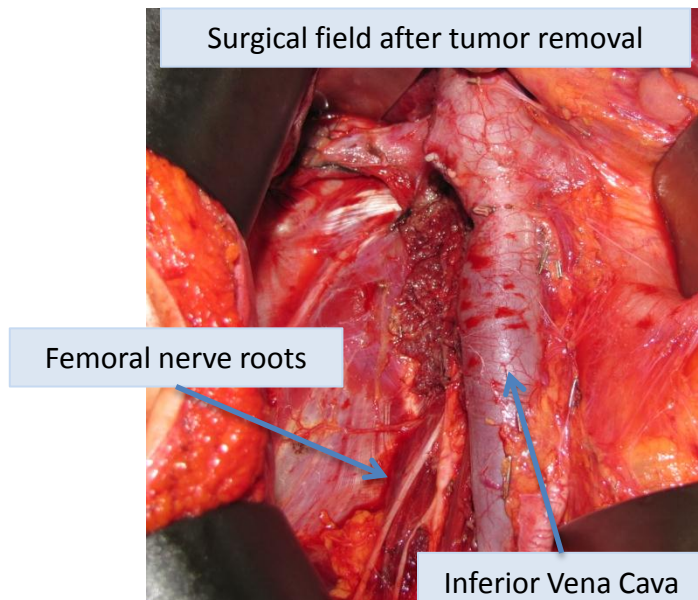
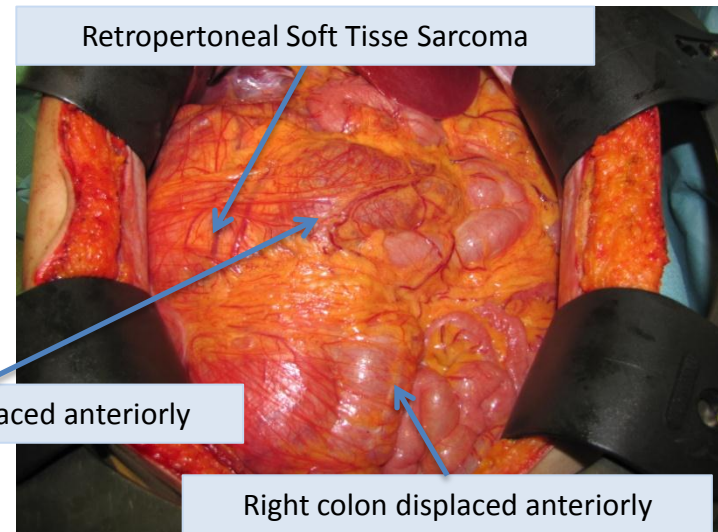
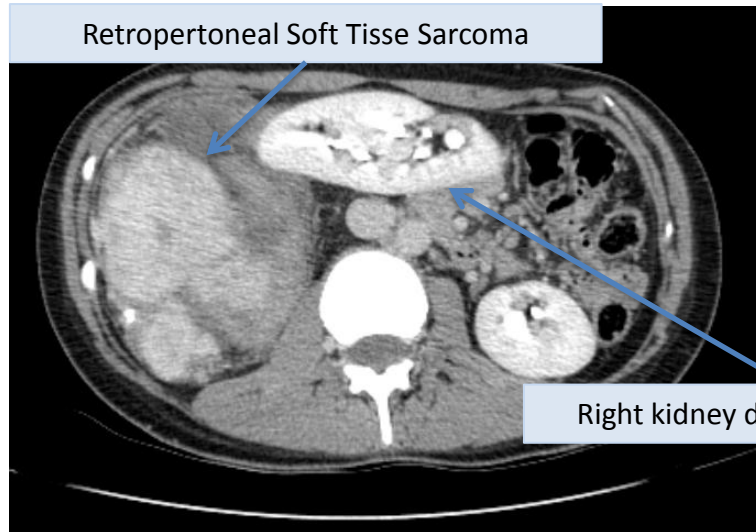
# “Extended surgical approach”

- Liberal en-bloc visceral resections:
  - Ipsilateral nephrectomy and colectomy
  - Splenectomy and left pancreatectomy for left sided tumors
  - Pancreato-duodenectomy and major hepatectomy only when infiltrated for right sided tumors
  - Sigmoid and rectal resection for pelvic lesions (bladder only if directly infiltrated)
- Loco-regional peritonectomy and miomectomy of the psoas:
  - To accomplish better en-bloc resection
- Vascular surgery and bone resection
  - Performed only if vessels/bone infiltrated



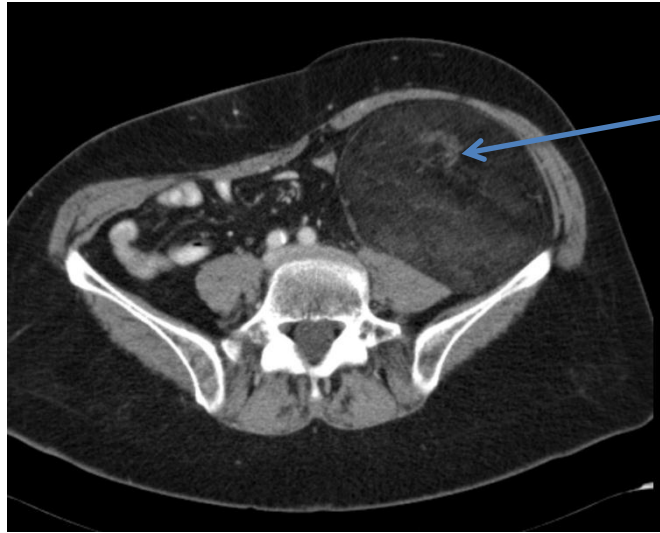
**Storm, Mahvi – Ann Surg 1990**

# Ipsilateral nephrectomy and colectomy

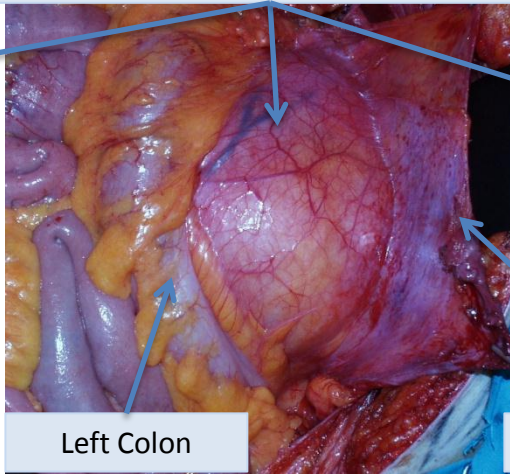




# Resection of peritoneum and psoas m.



Retroperitoneal Soft Tisse Sarcoma

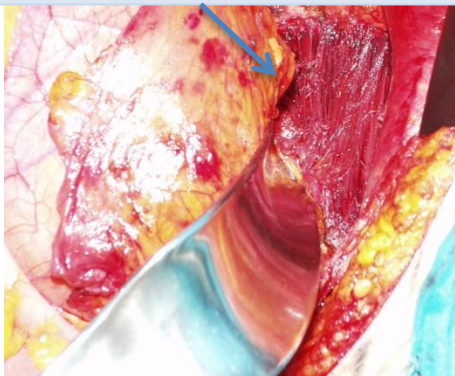


Left Colon

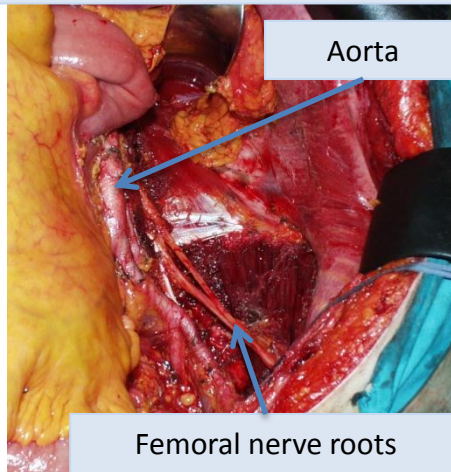


Peritoneal flap

Mobilization of the tumor from the side wall en-bloc with parietal peritoneum and from the posterior wall en-bloc with iliac fascia and Psoas Muscle



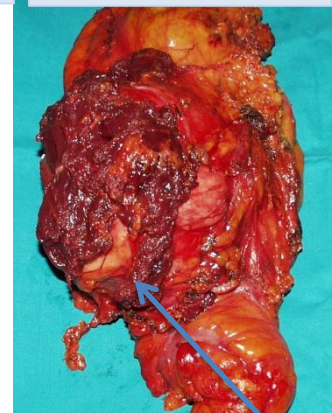
Surgical field after tumor removal



Aorta

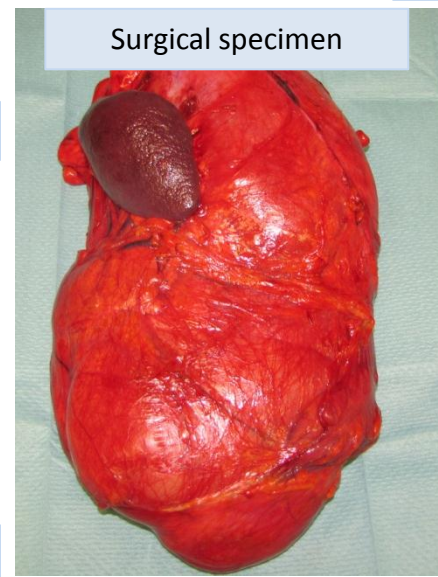
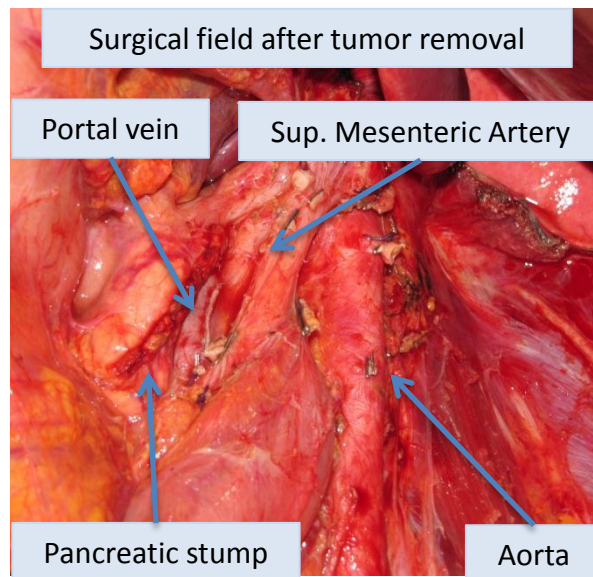
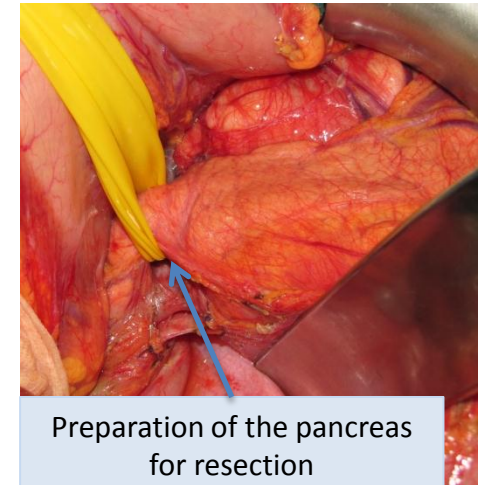
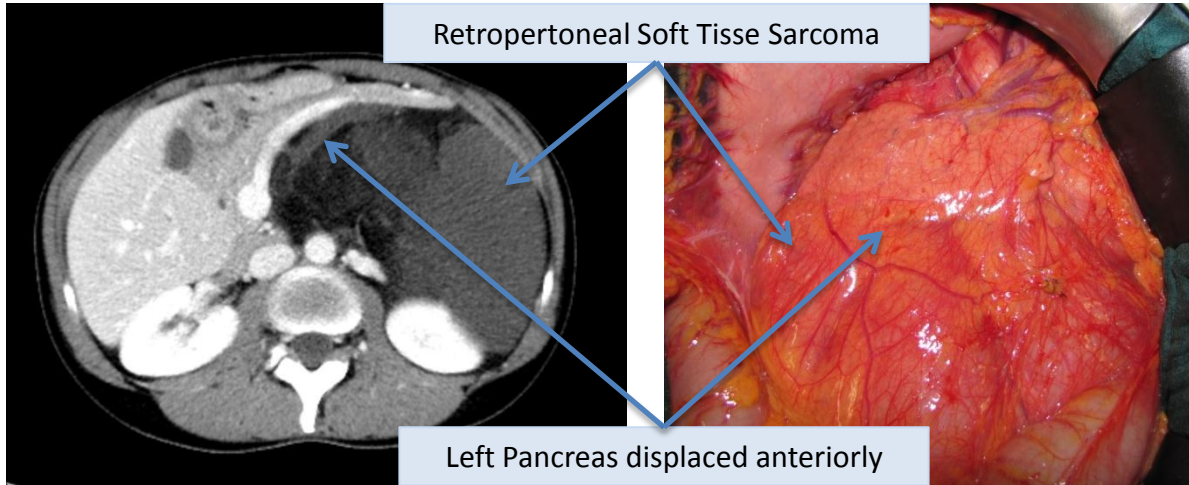
Femoral nerve roots

Surgical specimen



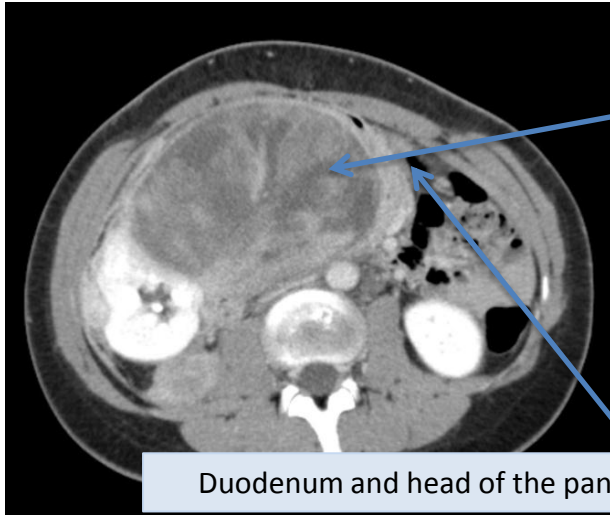
Psoas Muscle as posterior margin

# Splenectomy and left pancreatectomy

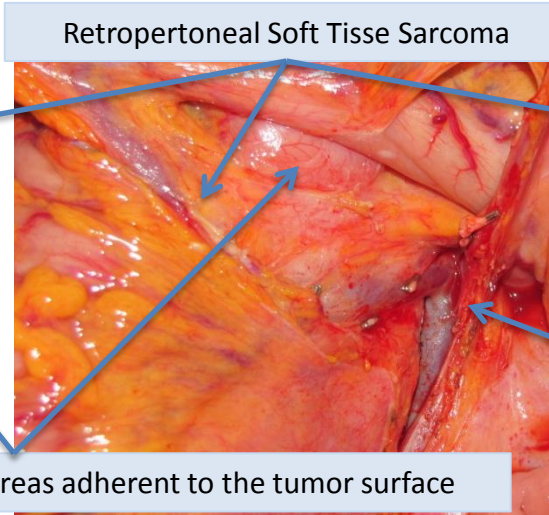




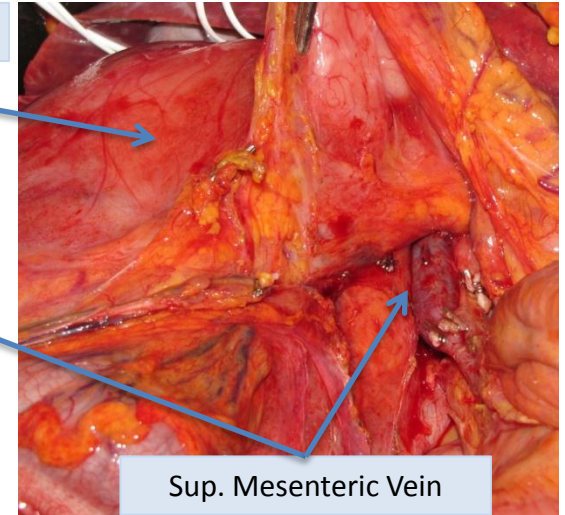
# Pancreaticoduodenectomy



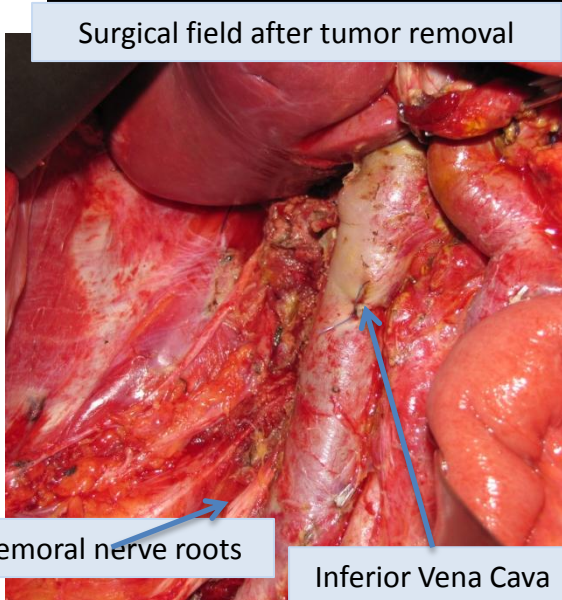
Duodenum and head of the pancreas adherent to the tumor surface



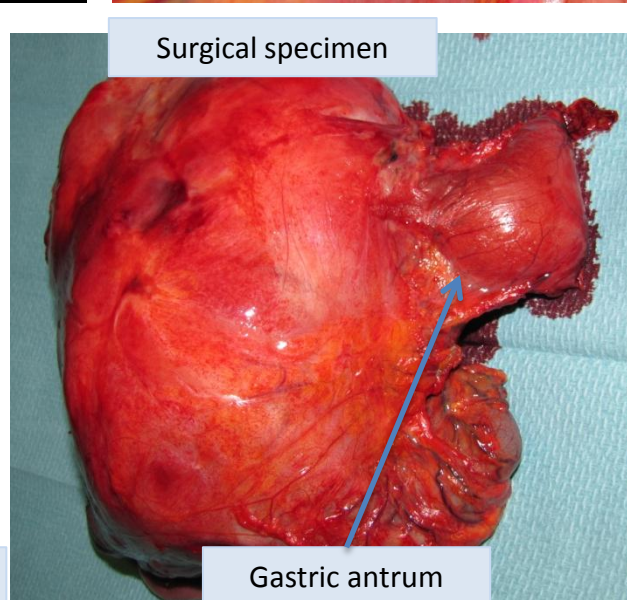
Retroperitoneal Soft Tissue Sarcoma



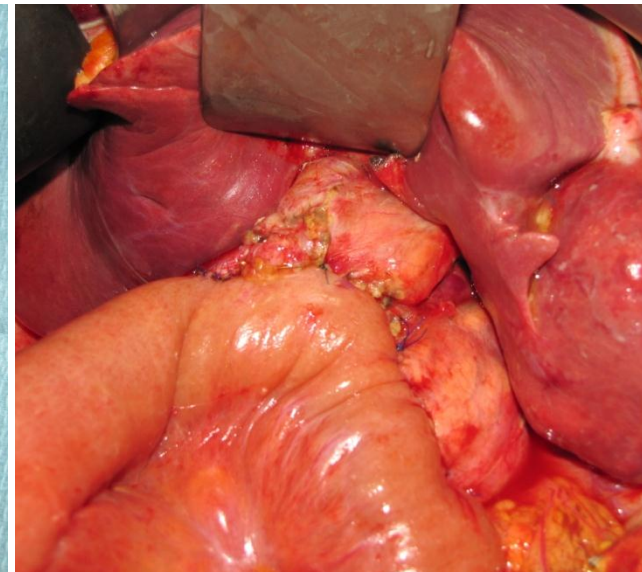
Sup. Mesenteric Vein



Surgical field after tumor removal



Surgical specimen



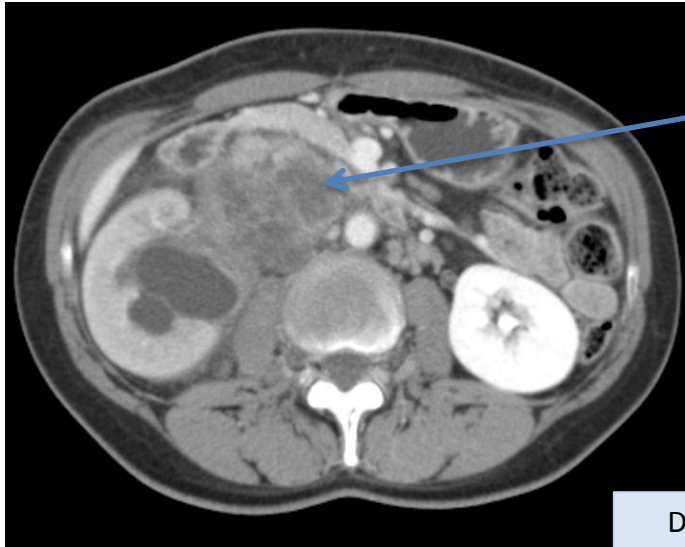
Gastric antrum

Femoral nerve roots

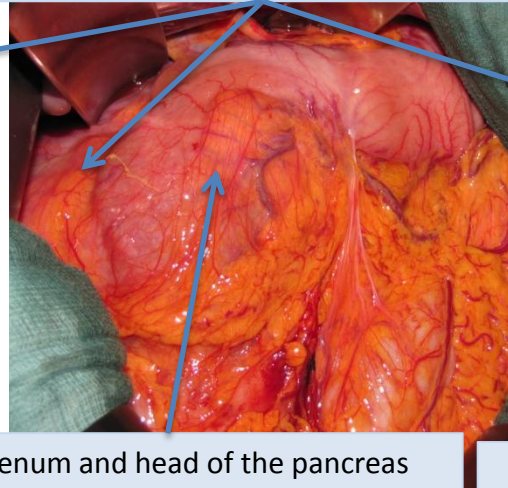
Inferior Vena Cava



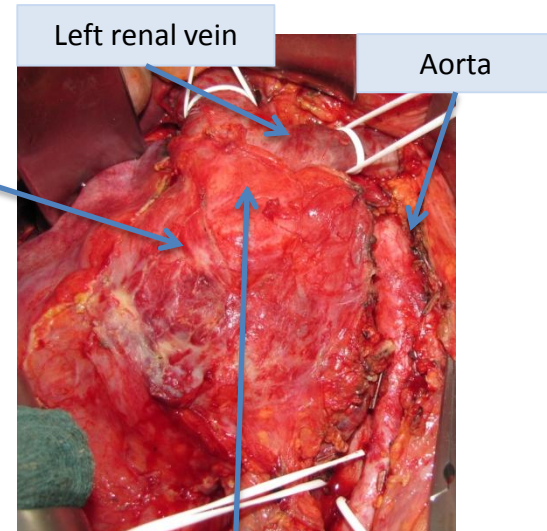
# Vascular resection



Retroperitoneal Soft Tissue Sarcoma



Duodenum and head of the pancreas



Left renal vein

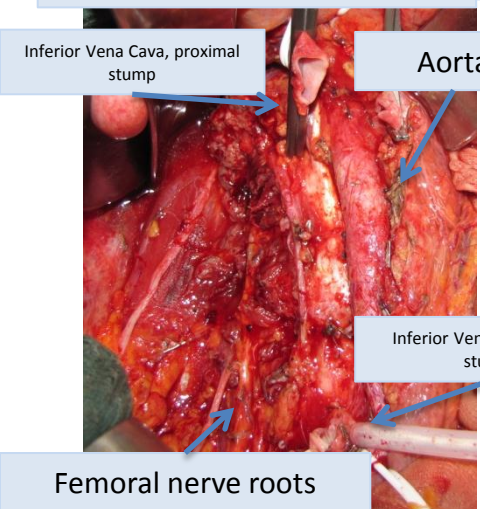
Aorta

Inferior Vena Cava encased by the tumor

Surgical field after tumor removal

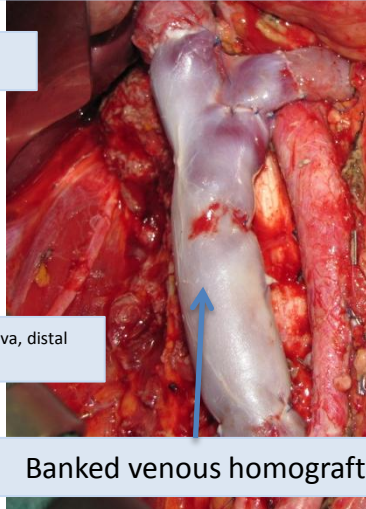
Inferior Vena Cava reconstruction

Surgical specimen



Inferior Vena Cava, proximal stump

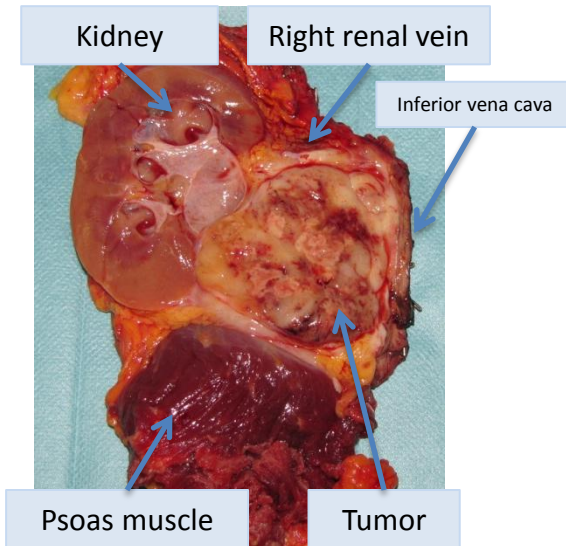
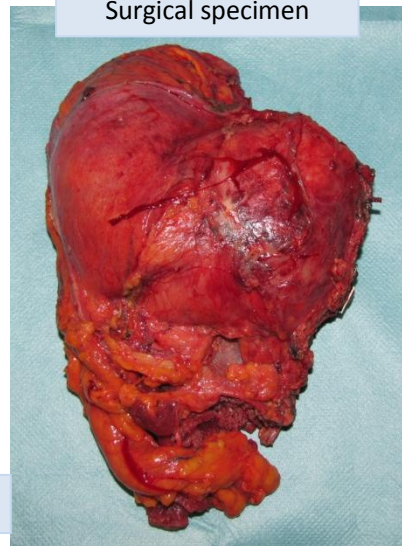
Aorta



Inferior Vena Cava, distal stump

Banked venous homograft

Femoral nerve roots



Kidney

Right renal vein

Inferior vena cava

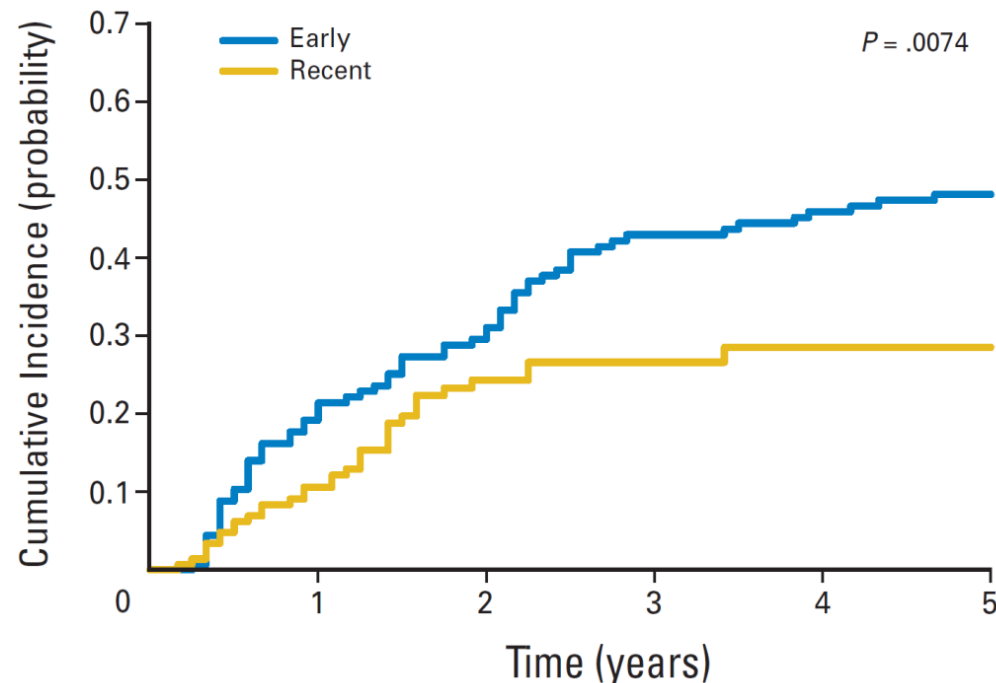
Psoas muscle

Tumor



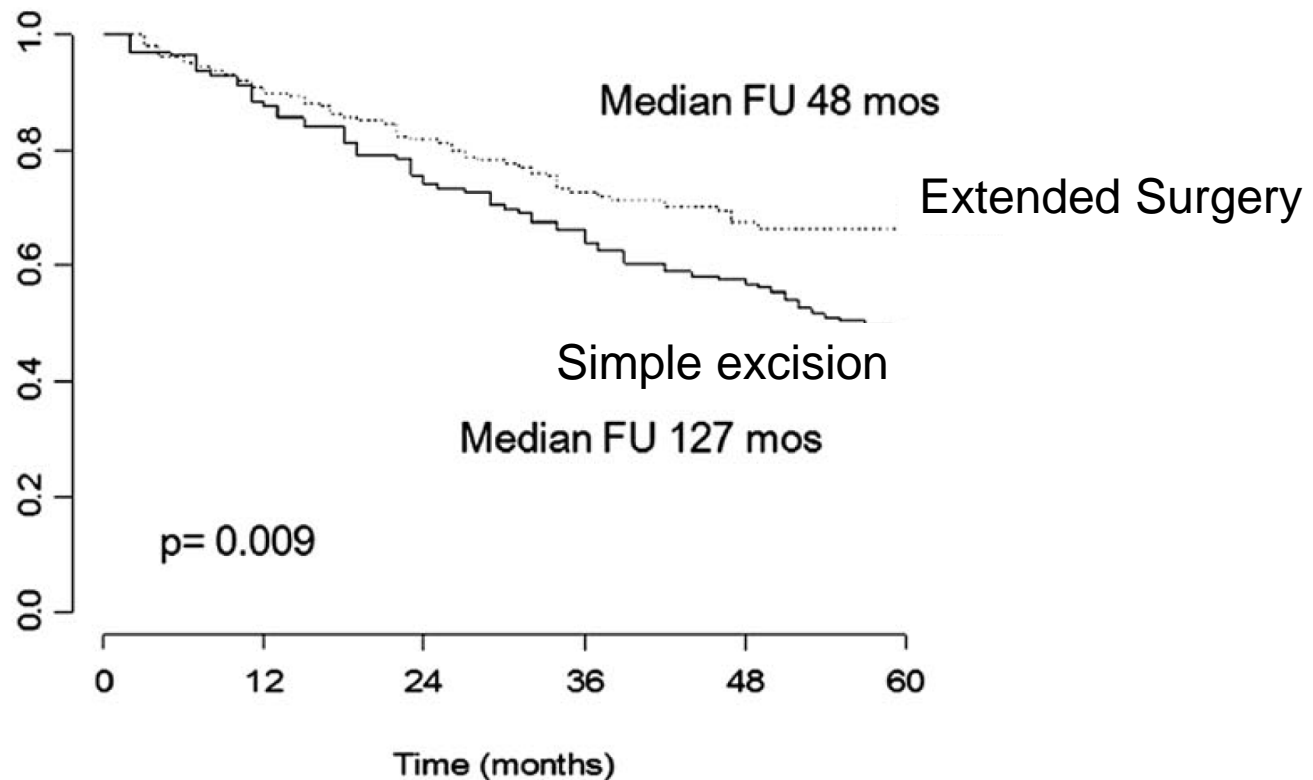
# Aggressive Surgical Policies in a Retrospectively Reviewed Single-Institution Case Series of Retroperitoneal Soft Tissue Sarcoma Patients

*Alessandro Gronchi, Salvatore Lo Vullo, Marco Fiore, Chiara Mussi, Silvia Stacchiotti, Paola Collini, Laura Lozza, Elisabetta Pennacchioli, Luigi Mariani, and Paolo Giovanni Casali*



# Frontline extended surgery is associated with improved survival in retroperitoneal low- to intermediate-grade soft tissue sarcomas

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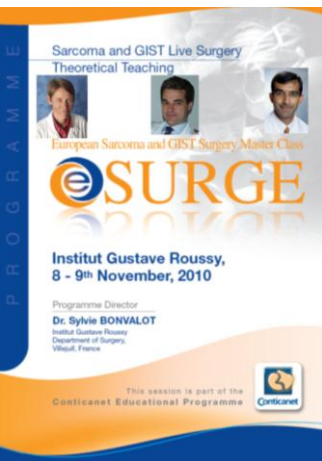




ORIGINAL ARTICLE – BONE AND SOFT TISSUE SARCOMAS

# Technical Considerations in Surgery for Retroperitoneal Sarcomas: Position Paper from E-Surge, a Master Class in Sarcoma Surgery, and EORTC-STBSG

Sylvie Bonvalot, MD, PhD<sup>1</sup>, Chandrajit P. Raut, MD, MSc<sup>2</sup>, Raphael E. Pollock, MD, PhD<sup>3</sup>, Piotr Rutkowski, MD<sup>4</sup>, Dirk C. Strauss, MD<sup>5</sup>, Andrew J. Hayes, MD<sup>5</sup>, Frits Van Coevorden, MD<sup>6</sup>, Marco Fiore, MD<sup>7</sup>, Eberhard Stoeckle, MD<sup>8</sup>, Peter Hohenberger, MD, PhD<sup>9</sup>, and Alessandro Gronchi, MD<sup>7</sup>

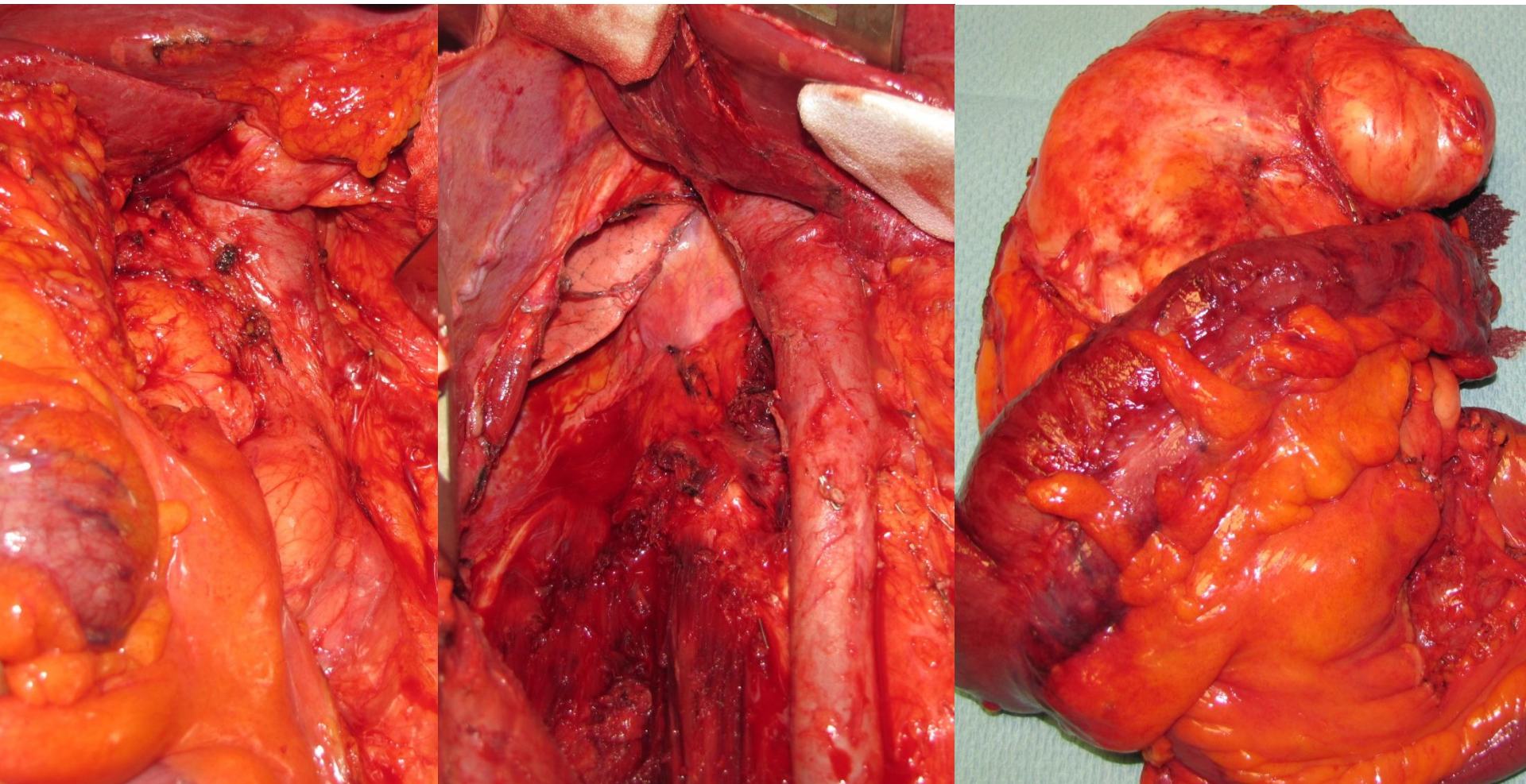


# Re-excisions

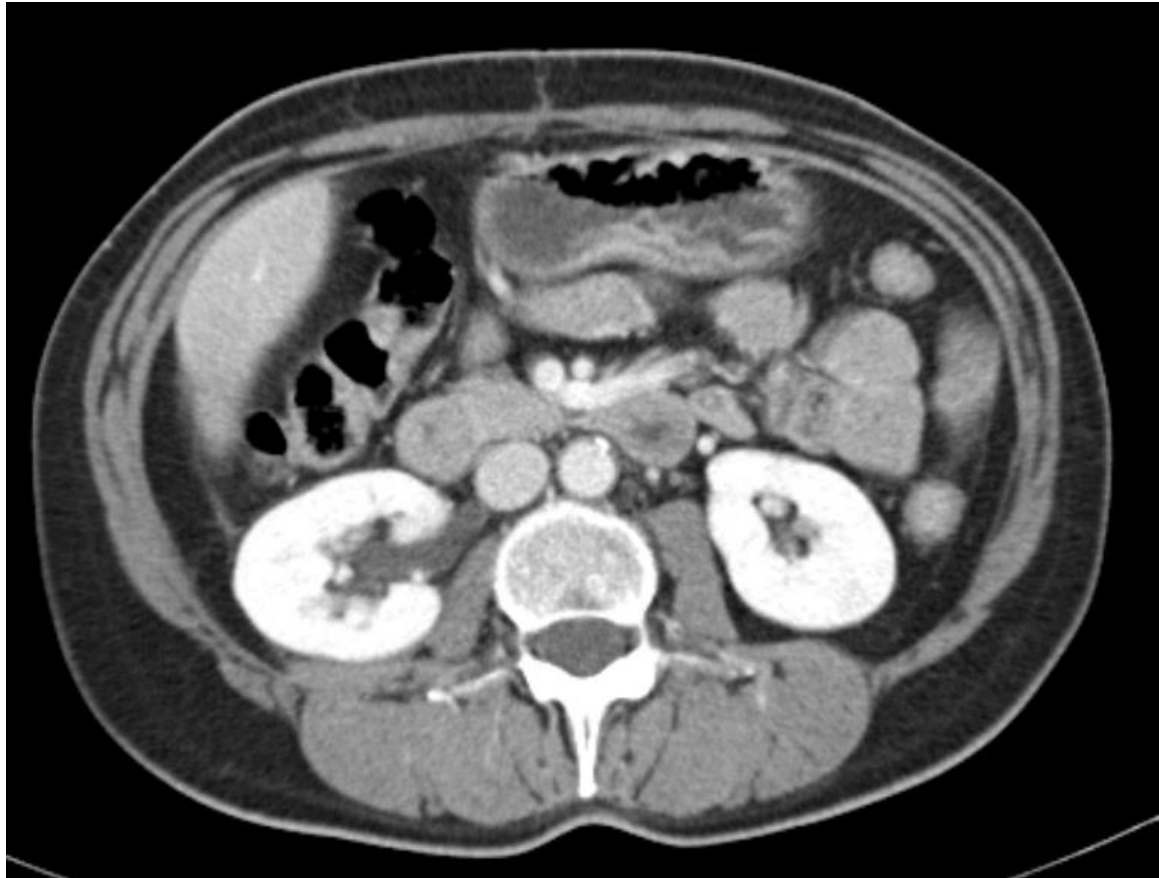




# Re-excisions

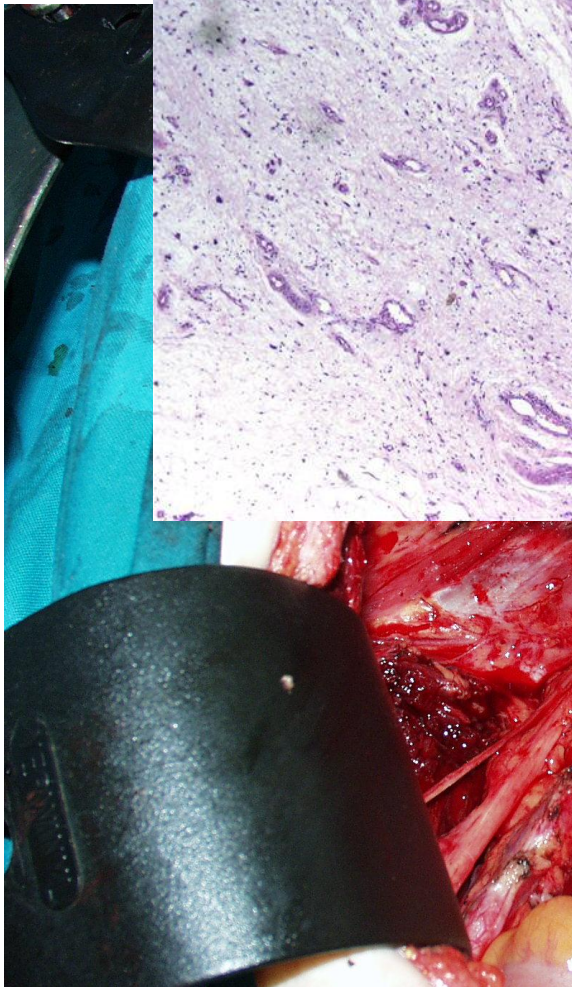
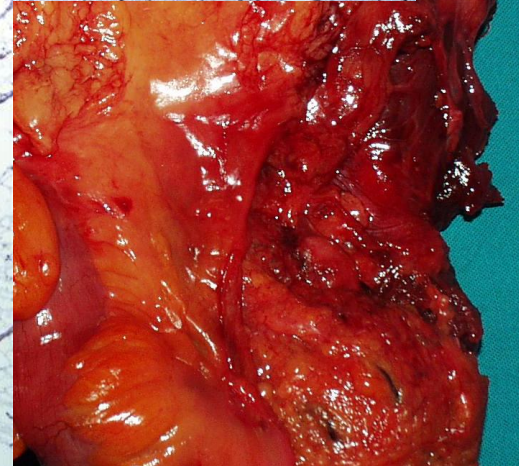
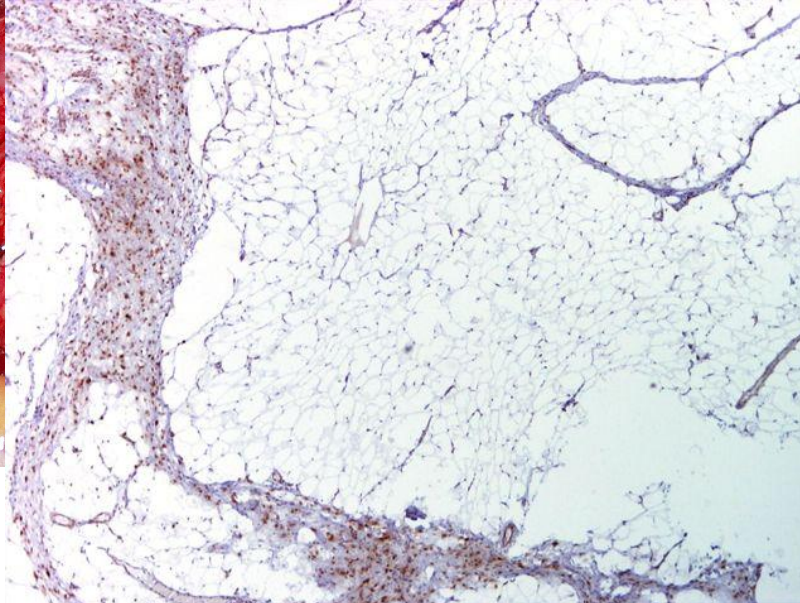
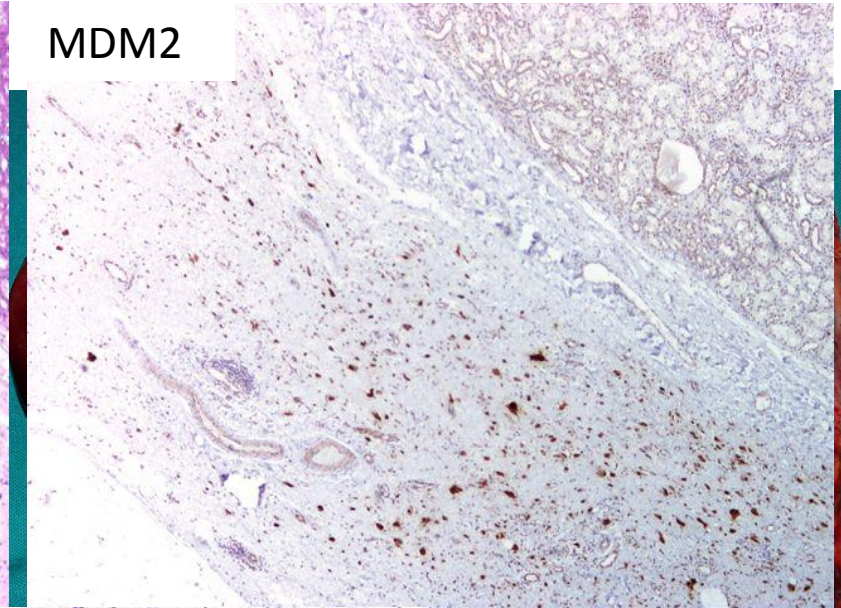
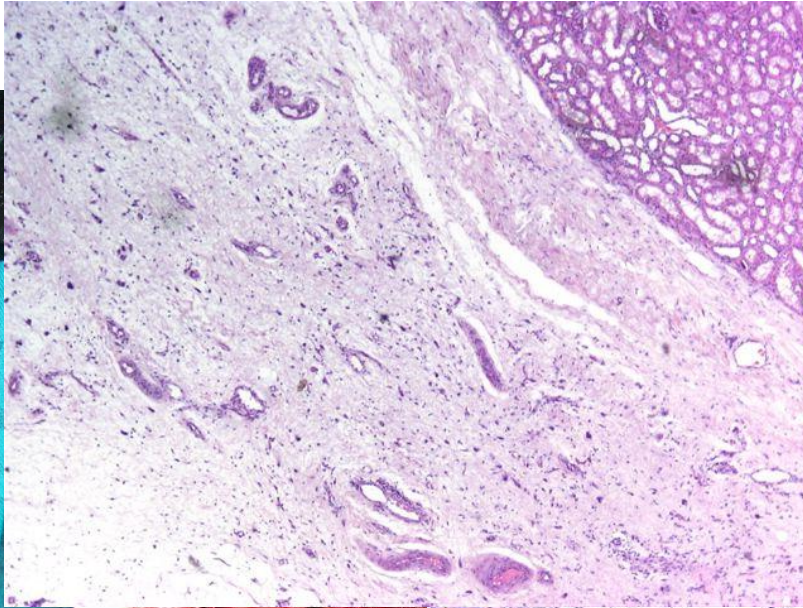


# Re-excisions





MDM2



# Primary Retroperitoneal Sarcomas: A Multivariate Analysis of Surgical Factors Associated With Local Control

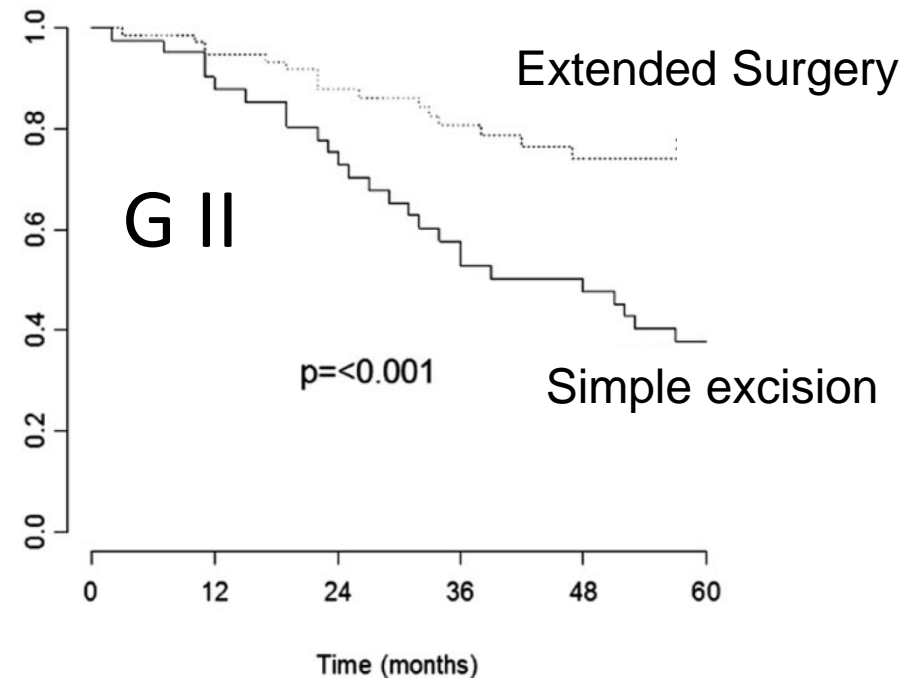
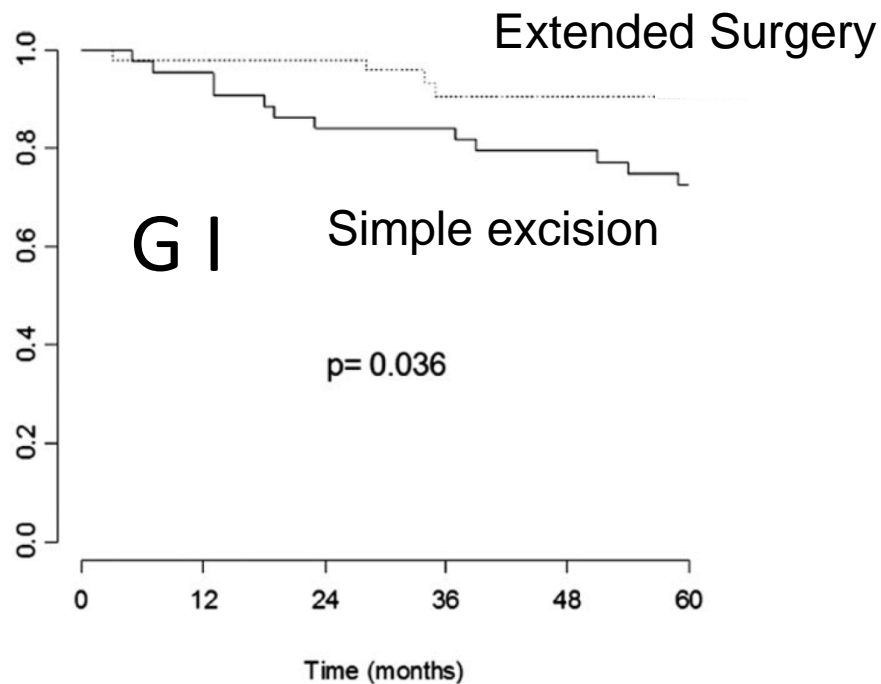
*Sylvie Bonvalot, Michel Rivoire, Marine Castaing, Eberhard Stoeckle, Axel Le Cesne, Jean Yves Blay, and Agnès Laplanche*

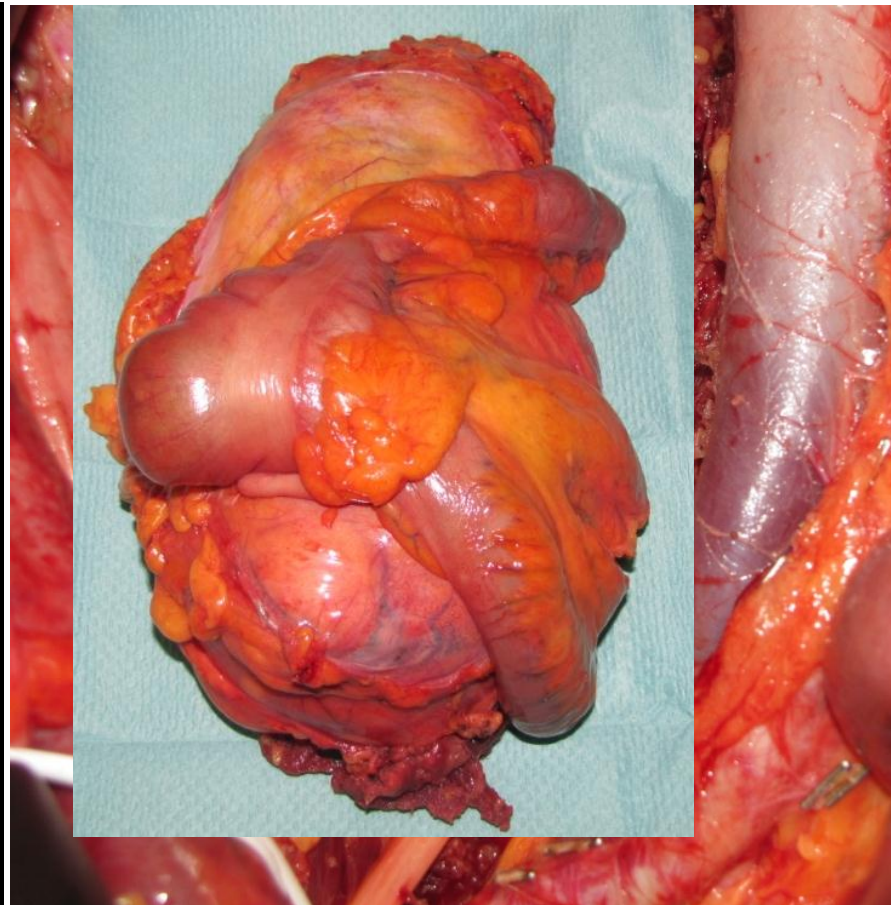
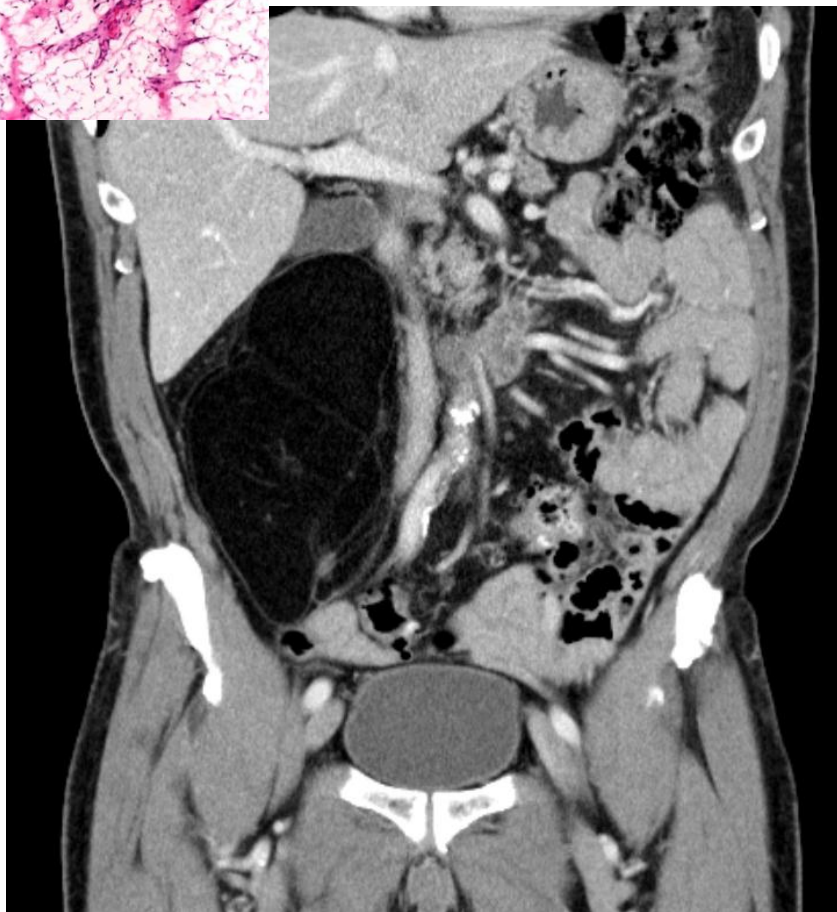
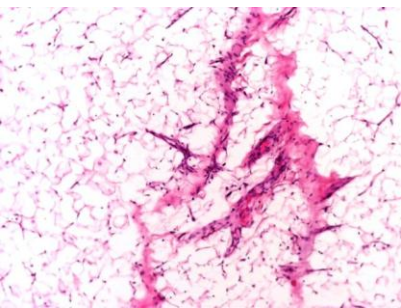
Characteristic	No.	%
Total patients	382	
Type of surgery*		
<b>Residual tumor found in 80% of the cases</b>		
Compartmental complete resection	120	32
Simple complete resection	65	17
Contiguously involved organ resection	130	35
Re-excision	21	6



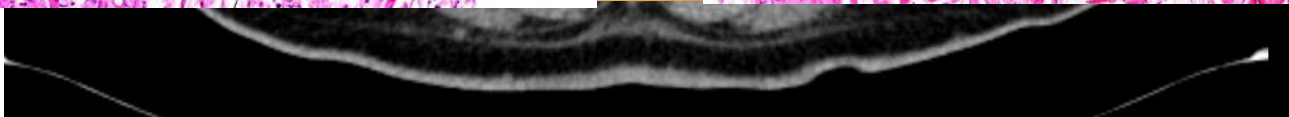
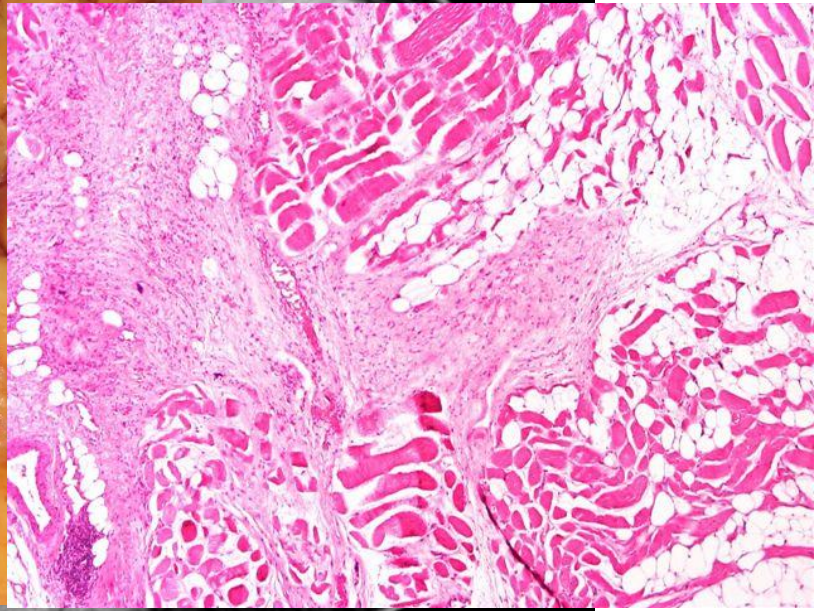
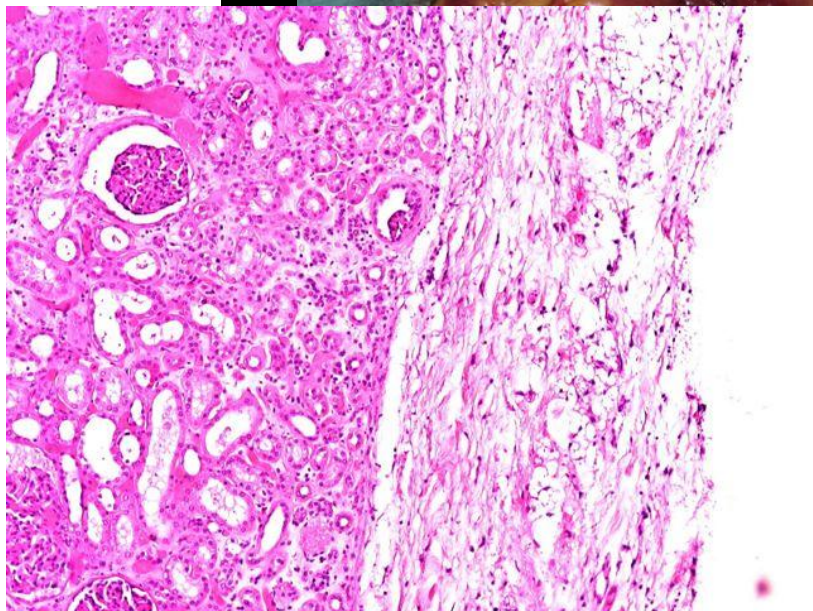
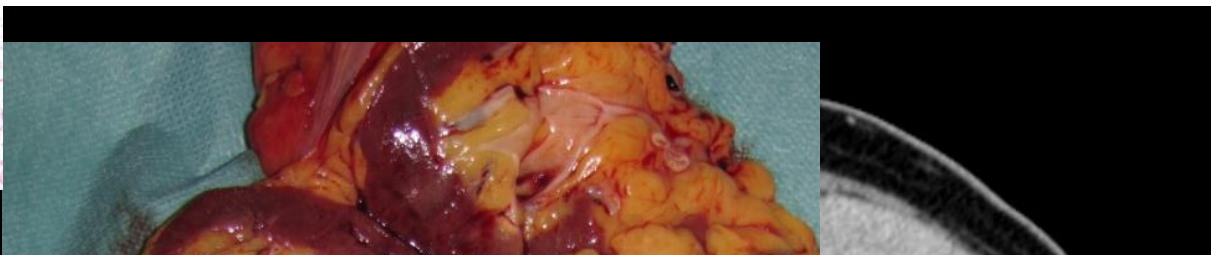
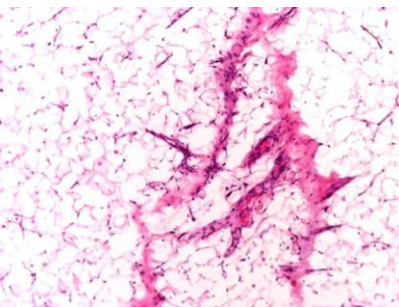
# Frontline extended surgery is associated with improved survival in retroperitoneal low- to intermediate-grade soft tissue sarcomas

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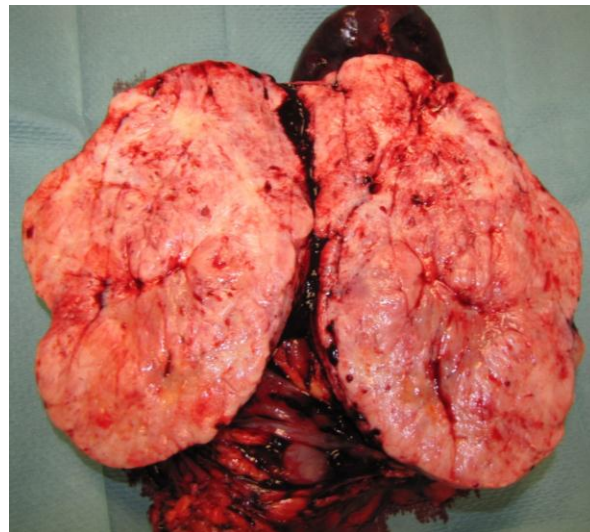
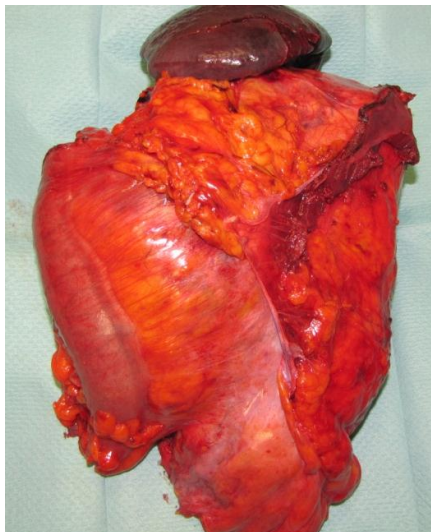
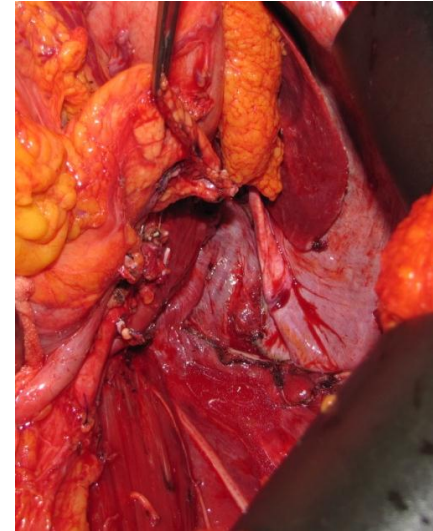
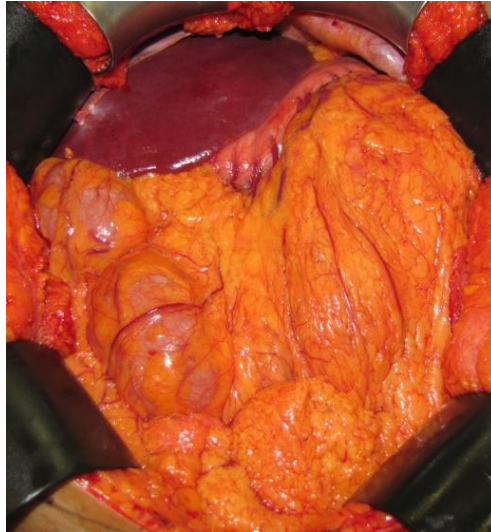








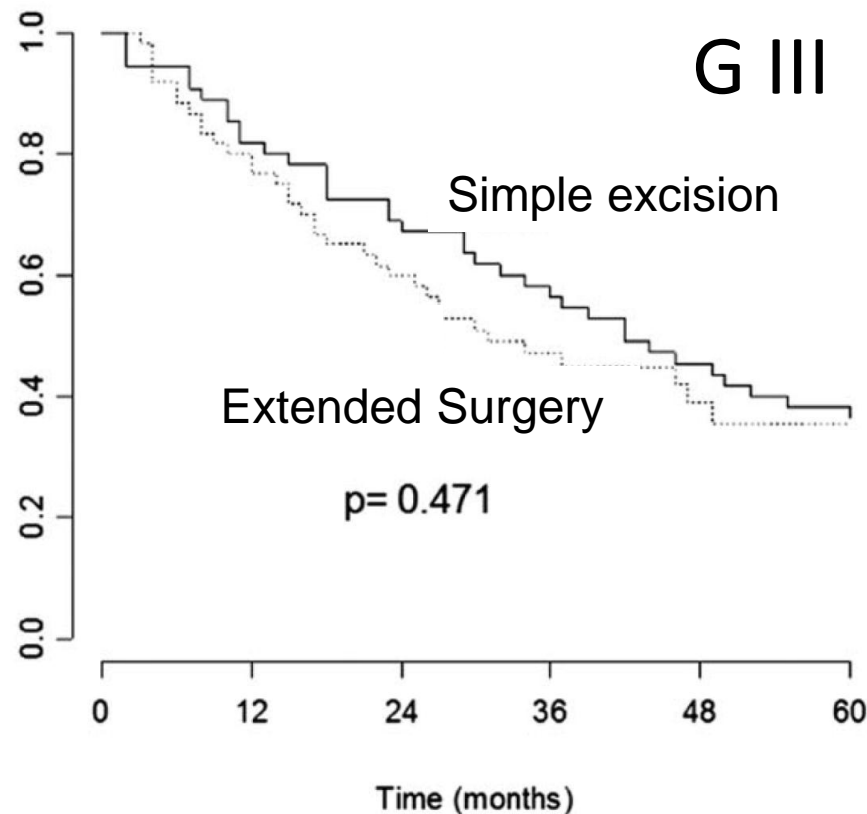
# Solitary Fibrous Tumor



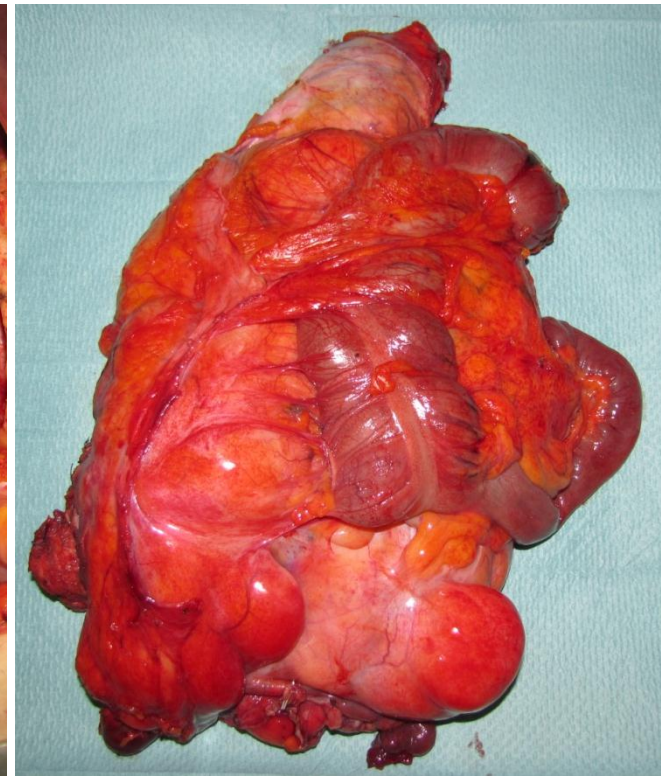
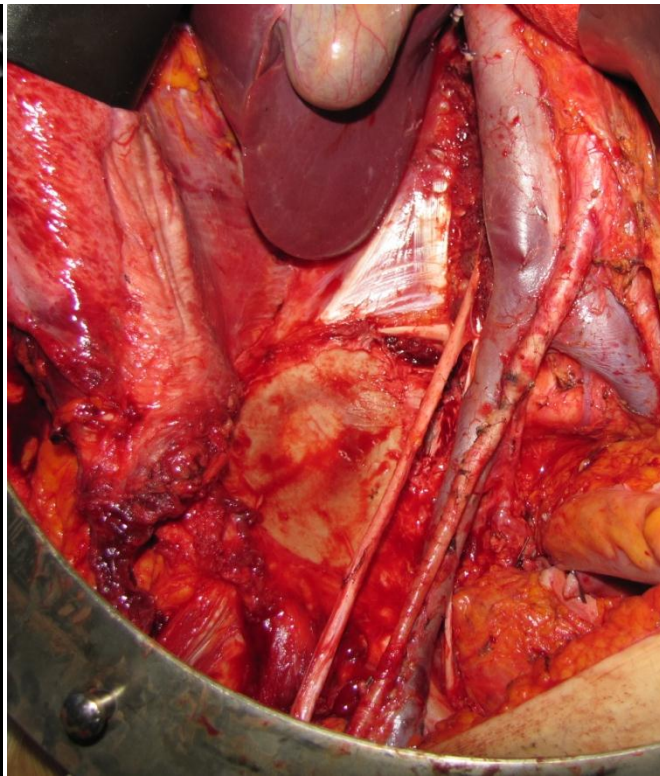
How about high grade...

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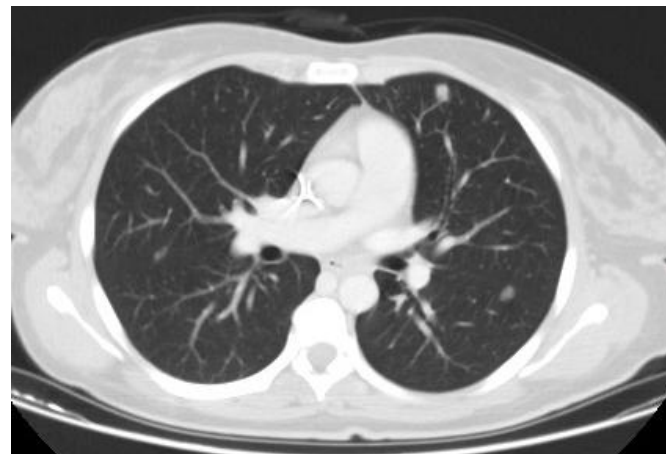


# High grade dediff liposarcoma



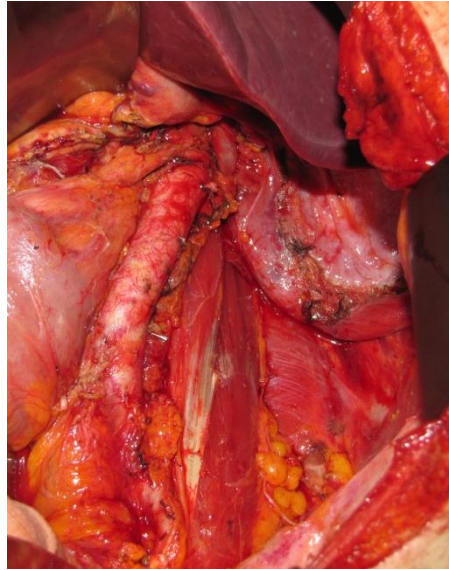


# 2 months later...

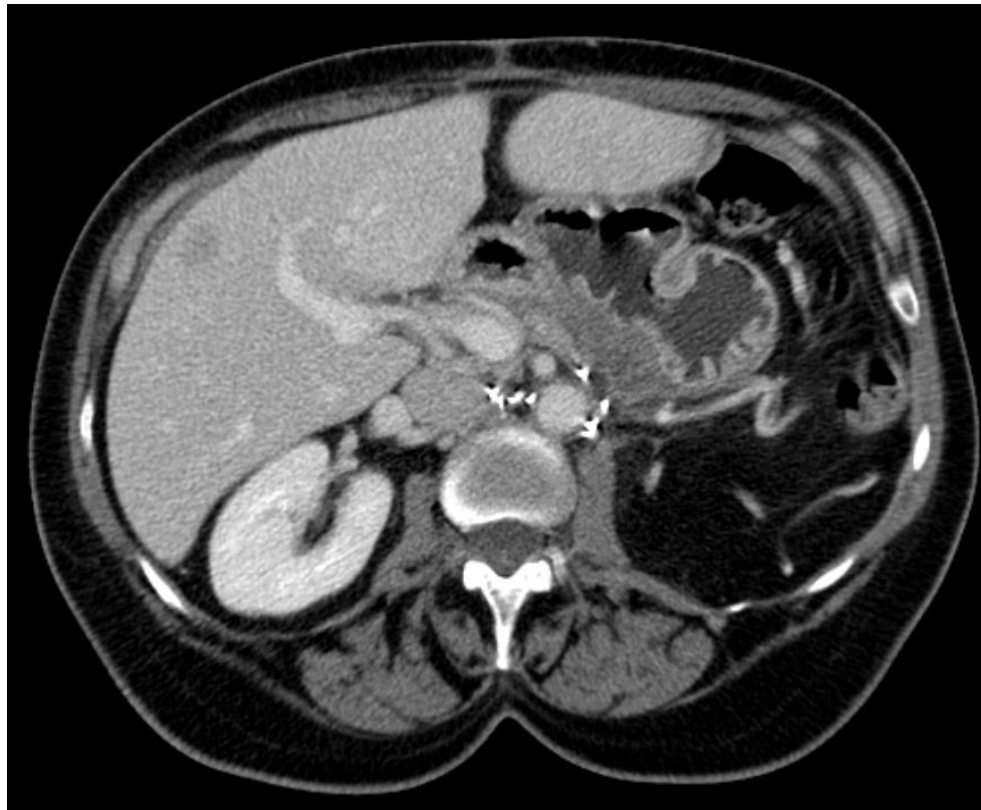




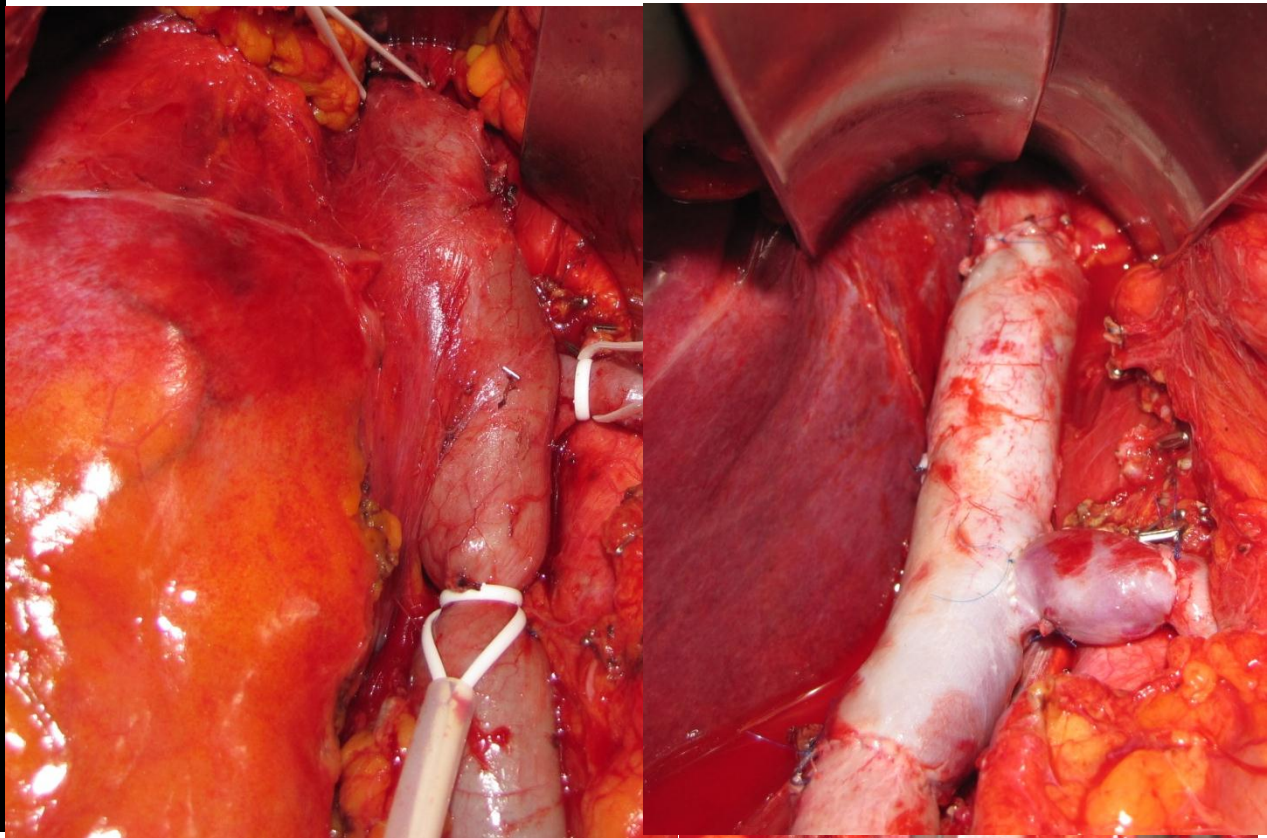
# High grade Leiomyosarcoma



8 months after

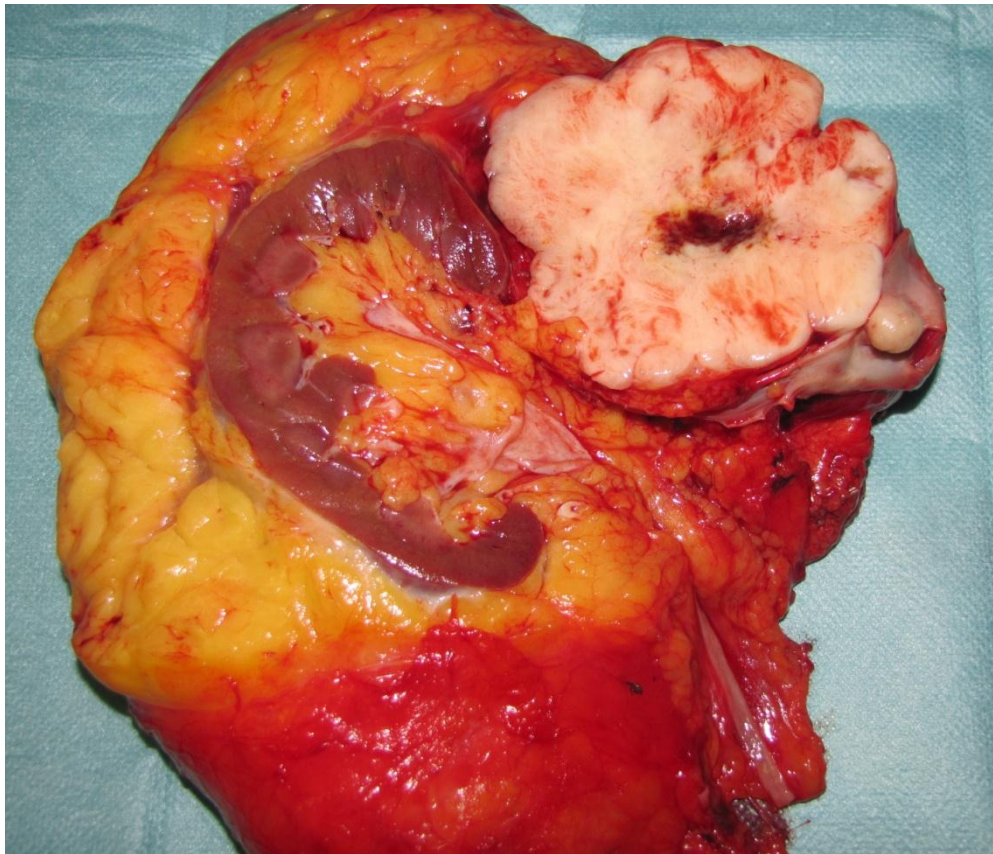


# Vascular leiomyosarcoma



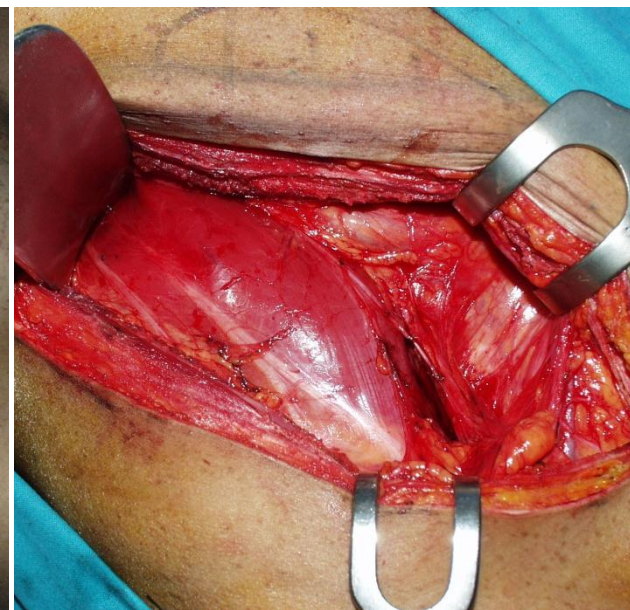


# Vascular Leiomyosarcoma

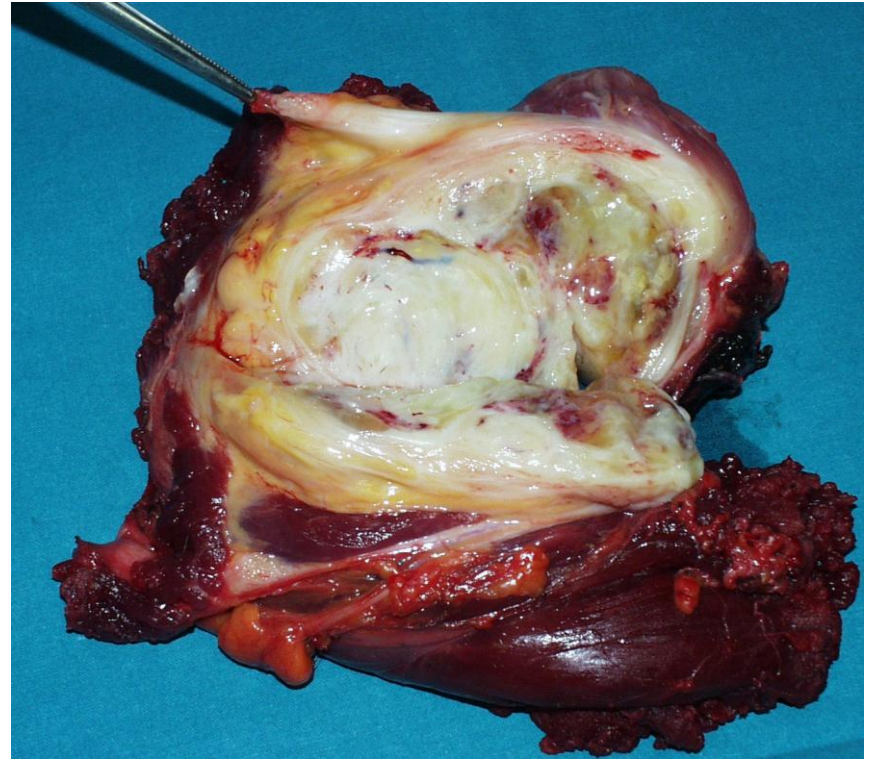
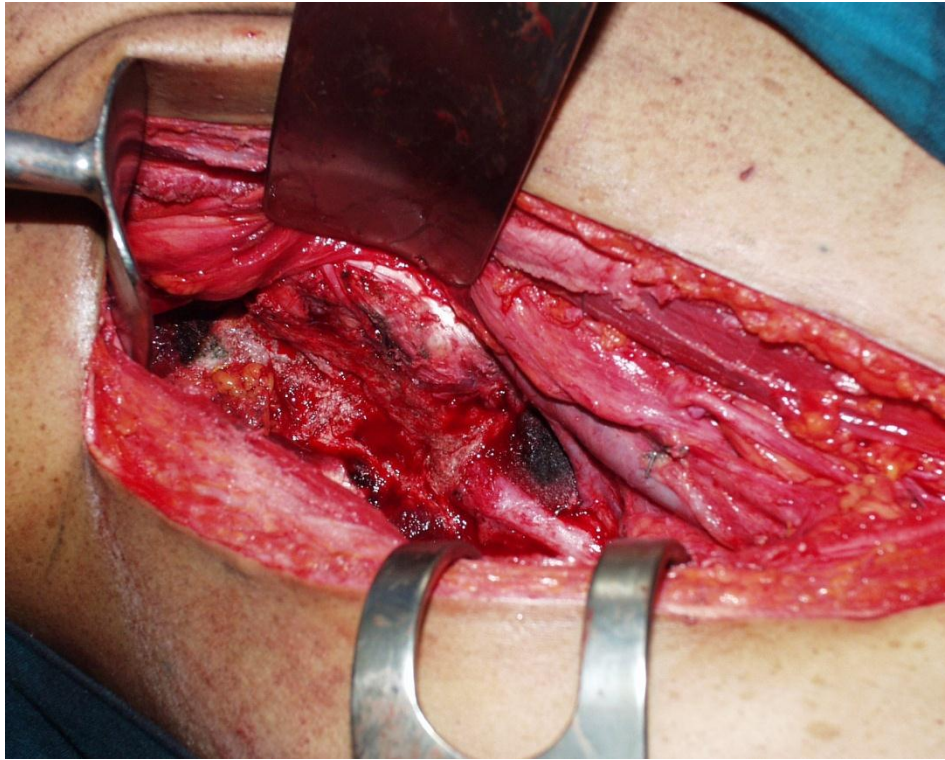




# MPNST



# MPNST



**In brief...**



- **Extent of surgery has to be tailored to histology (preoperative diagnosis mandatory)**
- **A frontline extended approach is associated with improved LR and OS in RPS**
- **The primary approach is crucial: need to minimize marginal margins, often including adjacent uninvolved visceral organs.**
- **Need to refer these patients to high-volume centers to have the best treatment strategy and ratio between surgical aggressiveness, risk of morbidity and predicted outcome.**
- **New therapies to complement surgery are eagerly needed in patients affected by high risk tumors**

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# Supporting evidences

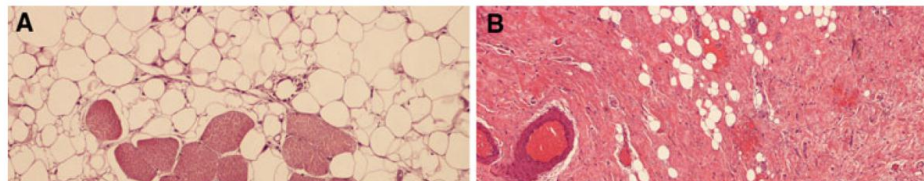


# 1. Pathological involvement of adjacent organs

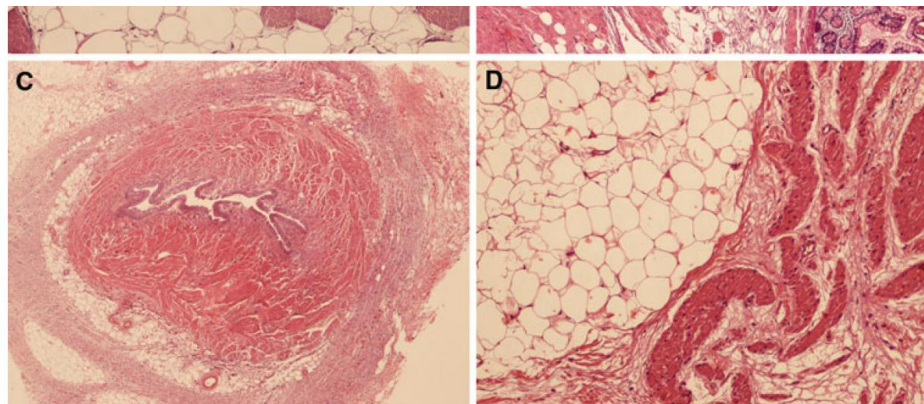
ORIGINAL ARTICLE – BONE AND SOFT TISSUE SARCOMAS

# Retroperitoneal Sarcoma: Is It Time to Change the Surgical Policy?

Chiara Mussi, MD<sup>1</sup>, Piergiuseppe Colombo, MD<sup>2</sup>, Alexia Bertuzzi, MD<sup>3</sup>, Massimiliano Coladonato, MD<sup>1</sup>, Pietro Bagnoli, MD<sup>1</sup>, Simona Secondino, MD<sup>3</sup>, Pierina Navarria, MD<sup>4</sup>, Emanuela Morengi, BSc<sup>5</sup>, Armando Santoro, MD<sup>3</sup>, and Vittorio Quagliuolo, MD<sup>1</sup>



**61% organs involvement**



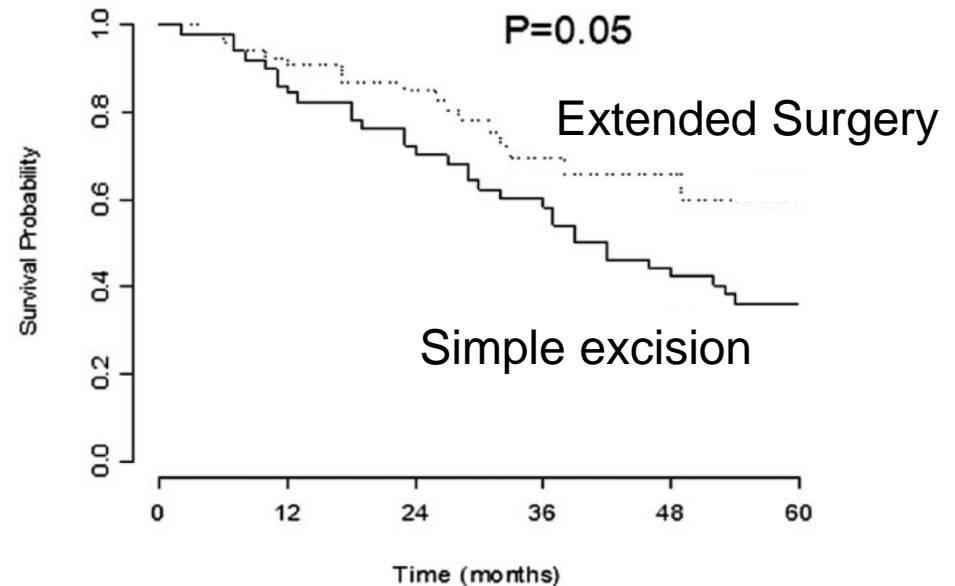
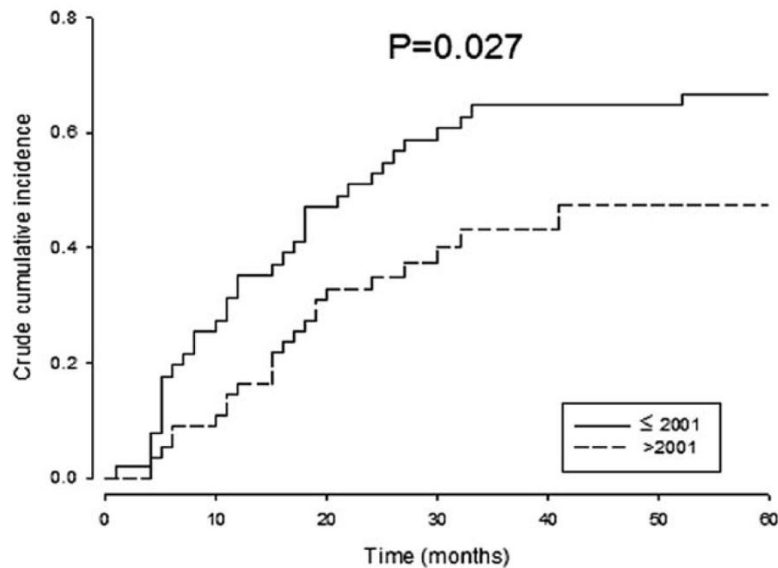
## 2. Rate of residual tumor at re-excision



3. Extended surgery improves outcome also of patients with local recurrence after simple excision

# Frontline extended surgery is associated with improved survival in retroperitoneal low- to intermediate-grade soft tissue sarcomas

A. Gronchi<sup>1\*</sup>, R. Miceli<sup>2</sup>, C. Colombo<sup>1</sup>, S. Stacchiotti<sup>3</sup>, P. Collini<sup>4</sup>, L. Mariani<sup>2</sup>, C. Sangalli<sup>5</sup>, S. Radaelli<sup>1</sup>, R. Sanfilippo<sup>3</sup>, M. Fiore<sup>1</sup> & P. G. Casali<sup>3</sup>



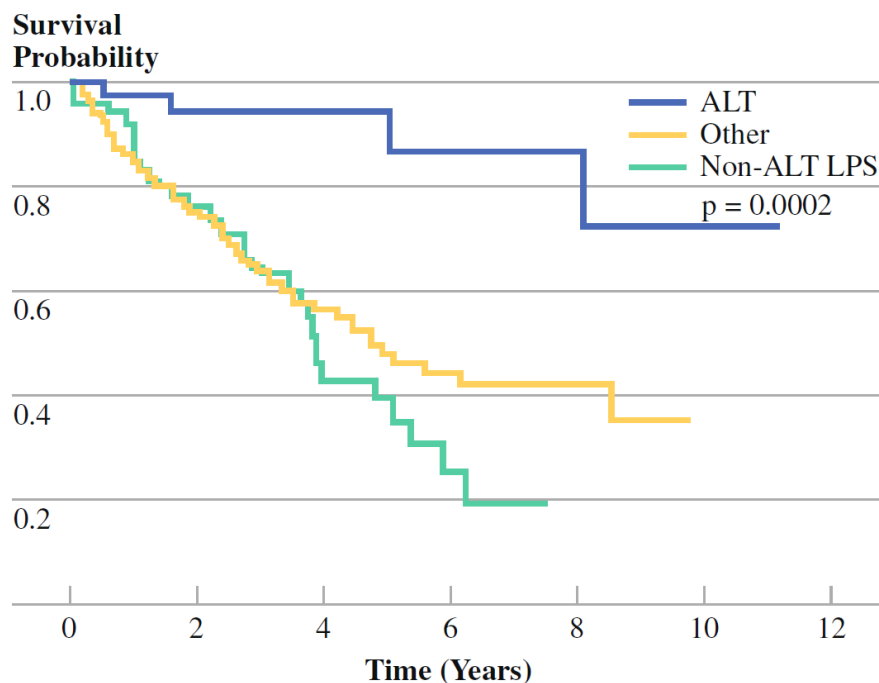
Tailoring extent of surgery to histology  
and grade



ORIGINAL ARTICLE – BONE AND SOFT TISSUE SARCOMAS

# Establishing Prognosis in Retroperitoneal Sarcoma: A New Histology-Based Paradigm

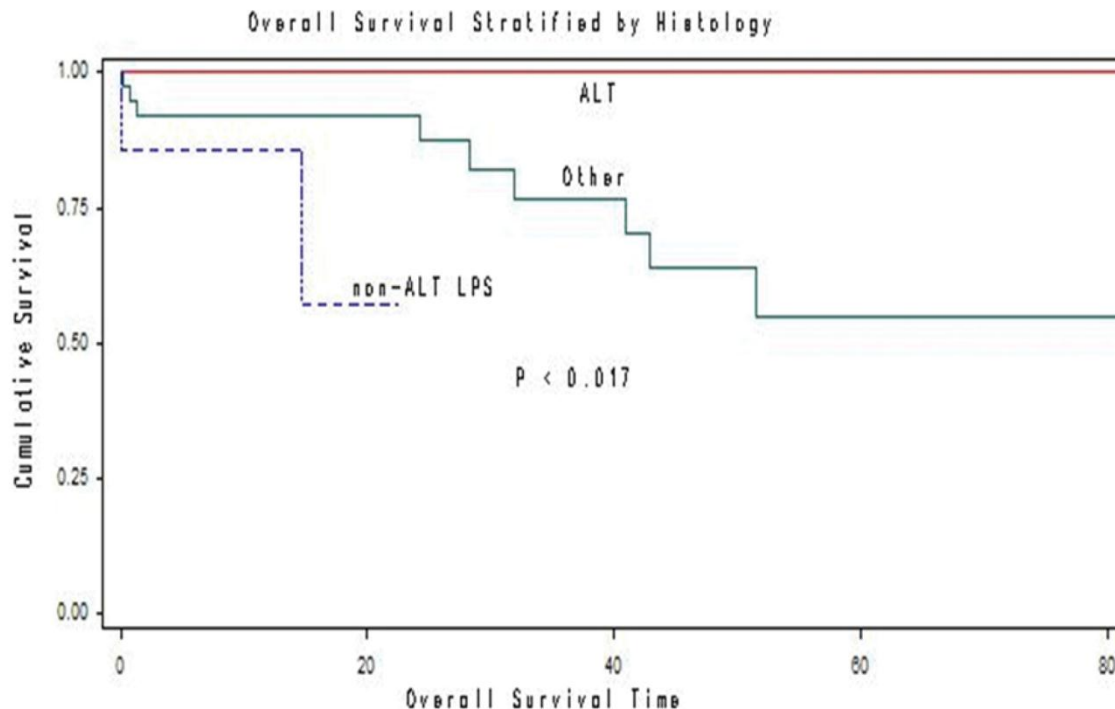
Daniel A. Anaya, MD<sup>1</sup>, Guy Lahat, MD<sup>1</sup>, Xuemei Wang, MS<sup>2</sup>, Lianchun Xiao, MS<sup>2</sup>, Daniel Tuvín, MD<sup>1</sup>, Peter W. Pisters, MD<sup>1</sup>, Dina C. Lev, MD<sup>3</sup>, and Raphael E. Pollock, MD, PhD<sup>1</sup>



# Impact of histology on survival in retroperitoneal sarcoma

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...but

...don't miss the chance for cure !



