Retroperitoneal Sarcoma, Surgical management

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Introduction

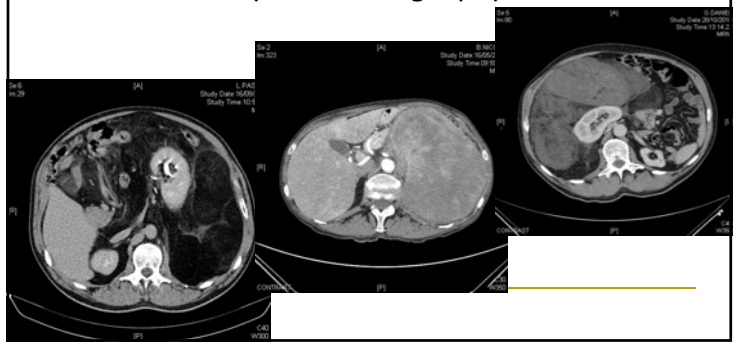
- Rare tumors,incidence of less than 1 case per 100,000 inhabitants/year
- 10-15% of all soft-tissue sarcomas
- Age at presentation:50-65 years
- Liposarcoma is the most common histotype
- Long term pronostic is poor
- Surgery is the mainstay treatment

Diagnosis

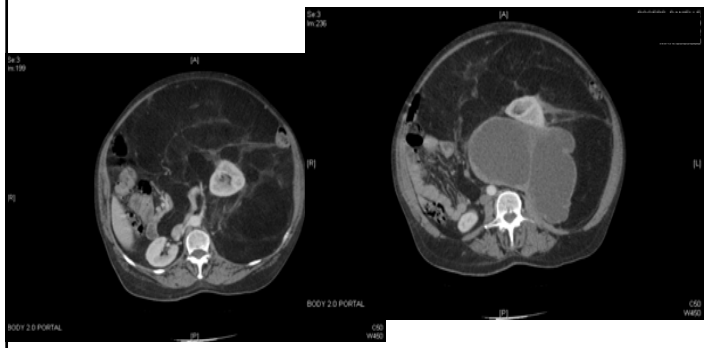
- Large size before they become symptomatics
- Incidentally diagnosed
- Abdominal or back pain
- Abdominal mass
- Bowel or uretral obstruction
- 70% in the abdomen
- 30% inthe pelvis

Initial evaluation

The imaging of choice is contrast-enhanced computed tomography(CT)



Exemple



Exemple

Biopsy required ?!!!

- When radiological characteristics of retro-peritoneal liposarcoma are not in doubt, a pre-operative biopsy is not required
- But RPS accounts for only a third of retroperitoneal tumors
- So biopsy is needed for most of cases

How to do it ?

Posterior way

Differential diagnosis

- Metastatic testicular neoplasm (younger mal patients)…tumors markers:a-foetoprotein,β-human chorionic gonadotrophin
- Intra-abdominal lymphoma
- Benign neurogenic tumours (schwannoma)
- Renal cancer

Histologic subtypes and survival

TABLE 2. Histologic Subtypes of Retroperitoneal Sarcomas

Histologic Type	No. (%) of Patients
Liposarcoma	53 (55)
Leiomyosarcoma	25 (26)
Malignant fibrous histiocytoma	10 (10)
Fibrosarcoma	5 (5)
Malignant peripheral nerve sheath tumor	3 (3)
Extraskeletal osteosarcoma	1 (1)

Operative Management of Primary Retroperitoneal Sarcomas

Annals of Surgery • Volume 239, Number 2, February 2004

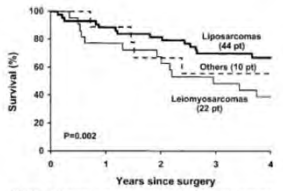


FIGURE 2. Survival curves of patients by histologic subtype. Patients with leiomyosarcomas (n = 22) had a worse survival as compared with patients with liposarcomas (n = 44); P = 0.0001.

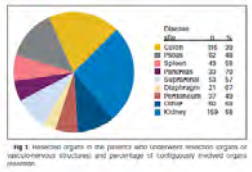
Be carefull !!!!

Metastatic testicular neoplasm

schwanoma

Surgical management

- Perform an « en bloc resection » of the sarcoma and contiguous organs to gain complete macroscopic clearance

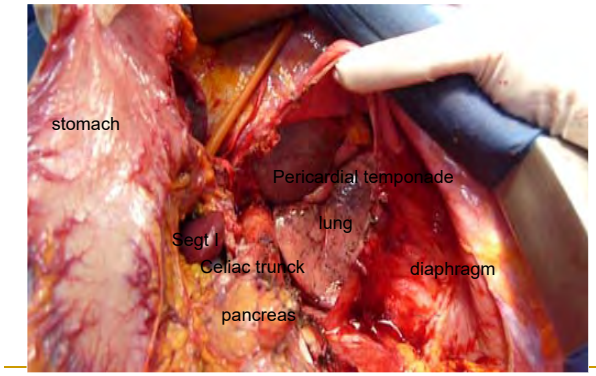


Primary Retroperitoneal Sarcomas: A Multivariate Analysis of Surgical Factors Associated With Local Control

VOLUME 27 · NUMBER 1 · JANUARY 1 2009

JOURNAL OF CLINICAL ONCOLOGY

Per operative view

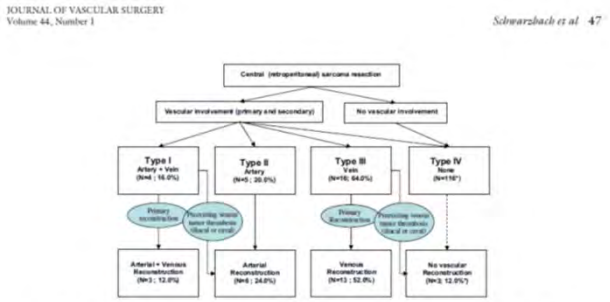


The margin, « I have a dream »




Surgical management

Vascular surgery could be necessary



JOURNAL OF VASCULAR SURGERY
Volume 44, Number 1

Schwarzbach et al 47

Fig 1. Type of vascular involvement and algorithm for vascular reconstruction in patients with retroperitoneal soft tissue sarcoma. *Number of patients with type IV soft tissue sarcomas treated during the respective study period who were excluded from further analysis for the purpose of this report.

Ewing's sarcoma

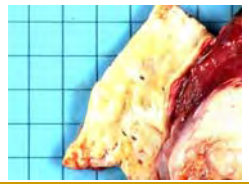
- Nepherctomy and vascular graft of veina cava


Planified surgery…




The margin!!!!





For small tumor, it can be achieved….

VCI involvement

Resection of the Inferior Vena Cava Without Reconstruction for Urologic Malignancies

Brian Duty and Siamak Daneshmand

UROLOGY 74 (6), 2009

VENA CAVAL RESECTION FOR BULKY METASTATIC GERM CELL TUMORS: AN 18-YEAR EXPERIENCE

AARON SPITZ, TIMOTHY G. WILSON, MARK H. KAWACHI, THOMAS E. AHLERING AND DONALD G. SKINNER

Ann Surg Oncol
DOI 10.1245/s10434-011-1954-2

Annals of SURGICAL ONCOLOGY

ORIGINAL ARTICLE – BONE AND SOFT TISSUE SARCOMAS

Surgical Technique, Morbidity, and Outcome of Primary Retroperitoneal Sarcoma Involving Inferior Vena Cava

Marco Fiore, MD[1], Chiara Colombo, MD[1], Piermarco Locati, MD[2], Mattia Berselli, MD[1], Stefano Radaelli, MD[1], Carlo Morosi, MD[3], Paolo G. Casali, MD[4], and Alessandro Gronchi, MD[1]

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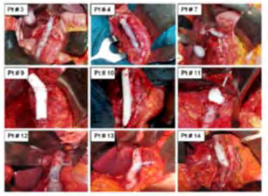
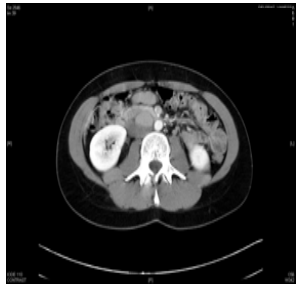


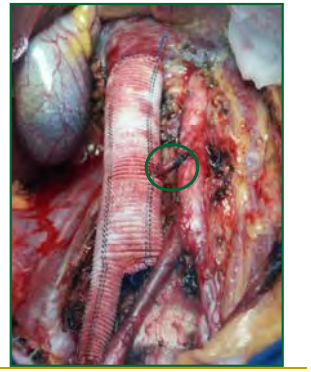
ICV leiomyosarcoma

Before chemo

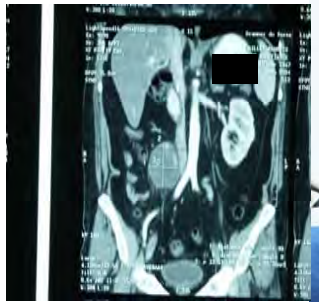


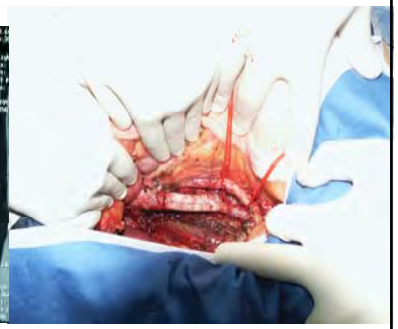
After 6 « adria-holoxan »

Resection and reconstruction

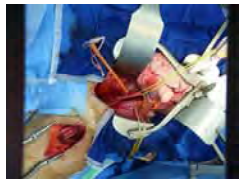


Partial reconstruction of ICV

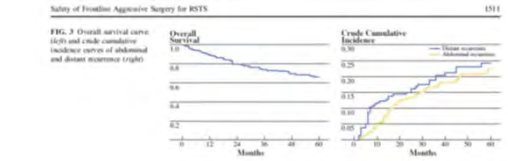


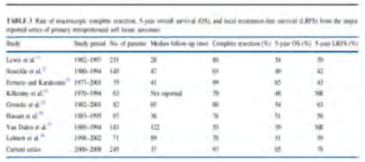


Extension due to anatomy



Impact of surgical technique and surgical strategy





Operative Management of Primary Retroperitoneal Sarcomas

A Reappraisal of an Institutional Experience

Imran Hassan, MD, Sarang Z. Park, MD,* John H. Donohue, MD,* David M. Nagorney, MD,* Paul A. Kay, MD, PhD,† Antonio G. Nascimento, MD,† Cathy D. Schleck, BS,‡ and Duane M. Ilstrup, MS‡*

Annals of Surgery • Volume 239, Number 2, February 2004

Multimodality local therpy for RPS

CLINICAL INVESTIGATION

MULTIMODALITY LOCAL THERAPY FOR RETROPERITONEAL SARCOMA

NITESH N. PARYANI, M.D.,* ROBERT A. ZLOTECKI, M.D.,* ERIKA L. SWANSON, M.D.,* CHRISTOPHER G. MORRIS, M.S.,* STEPHEN R. GROBMYER, M.D.,† STEVEN N. HOCHWALD, M.D.,† ROBERT B. MARCUS JR., M.D.,*‡ AND DANIEL J. INDELICATO, M.D.*‡

From the Departments of *Radiation Oncology and †General Surgery, University of Florida College of Medicine, Gainesville, FL; and the ‡University of Florida Proton Therapy Institute, Jacksonville, FL

Int. J. Radiation Oncology Biol. Phys., Vol. ■, No. ■, pp. 1–7, 2011

0360-3016/$ - see front matter

Role of chemotherapy

- Not well defined (high grade)
- Theorical advantaged of neoadjuvant chemoyherapy focuses on the potential to reduce the complexity of the proposed operation (when they respond!)
- Adjuvant chemotherapy: effect on overall survival could not be determined

Role of radiation therapy

- Althought commonly applied for retroperitoneal sarcomas in either the neoadjuvant or the adjuvant settings
- There is no level I evidence for radiation therapy in the specific management of RPS

Current Diagnosis and Management of Retroperitoneal Sarcoma

John E. Mullinax, MD, Jonathan S. Zager, MD, and Ricardo J. Gonzalez, MD

Cancer Control July 2011, Vol. 18, No. 3

Radiotherapy and Surgery—An Indispensable Duo in the Treatment of Retroperitoneal Sarcoma

Lien Van De Voorde, MD[1], Louise Delrue, MD[2], Marc van Eijkeren, MD, PhD[3], and Gert De Meerleer, MD, PhD[1]

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Cancer Month 00, 2011

1. Adding external RT with or without IORT to surgery improves local control and may be associated with improved OS.[10,18,24,26]
2. The administration of EBRT in the preoperative setting may be the preferred sequence, because it reduces the amount of normal tissue irradiated and, consequently, diminishes gastrointestinal toxicity.[44,47]
3. Adding intraoperative RT improves local control even for minimal microscopic residual disease. The combination of preoperative therapy with an intraoperative boost may favorably effect local recurrence and 5-year OS.[45,49-51]
4. The use of postoperative RT is bounded by bowel toxicity because of small bowel migration into the tumor bed. Consequently, there are more complications in postoperative treatment.[13] If postoperative RT is applied, then modern technology like IMRT and tomotherapy are used preferentially to safely achieve the threshold dose of 55 Gy.[7] However, the implementation of this strategy needs further investigation.[9,60]
5. The use of postoperative brachytherapy should be restricted to the lower abdomen.[14]
6. Although surgeons still are the gatekeepers of treatment, RSTS should be discussed and treated in a multidisciplinary setting. The presence of a radiation oncologist is vital.
7. Multicenter, randomized, controlled trials are urgently needed.

How to do it

Table 1: Incidence data (per 100,000) for sarcomas, 2000-2004.

	N. of cases	Freq. %	Crude rate	Age stand. rate	
				Europe	World
Soft tissue sarcoma (males)	180	0.6	3.9	3.3	2.6
Kaposi's skin (males)	48	0.1	1.0	0.8	0.6
Soft tissue sarcoma (females)	136	0.5	2.8	2.2	1.8
Kaposi's skin (females)	15	0.1	0.3	0.1	0.1

Data from the Veneto Tumor Registry (VTR).

Table 2: cases of local relapse after treatment in sarcoma patients with or without multidisciplinary committee before/after surgery.

		Local relapse		Total
		Yes	No	
Multidisciplinary committee before/after surgery	Yes	9	30	39
	No	27	34	61

A European project on incidence, treatment, and outcome of sarcoma

Mastrangelo *et al. BMC Public Health* 2010, **10**:188
http://www.biomedcentral.com/1471-2458/10/188

Referral center

Aggressive Surgery in Retroperitoneal Soft Tissue Sarcoma Carried Out at High-Volume Centers is Safe and is Associated With Improved Local Control

Sylvie Bonvalot, MD, PhD[1], Rosalba Miceli, PhD[2], Mattia Berselli, MD[3], Sylvain Causeret, MD[1], Chiara Colombo, MD[3], Luigi Mariani, MD[2], Hatem Bouzaiene, MD[1], Cécile Le Péchoux, MD[4], Paolo Giovanni Casali, MD[5], Axel Le Cesne, MD[6], Marco Fiore, MD[3], and Alessandro Gronchi, MD[3]

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Ann Surg Oncol (2010) 17:1507–1514
DOI 10.1245/s10434-010-1057-5

Conclusion

Retroperitoneal tumours: review of management

Dirk C Strauss, Andrew J Hayes, J Meirion Thomas

Sarcoma Unit, Department of Surgery, Royal Marsden Hospital, London, UK

Ann R Coll Surg Engl 2011; **93**: 275–280
doi 10.1308/003588411X571944

- Complete surgical resection is the only potential curative treatement
- The treatement should be done in high-volume centers by a multidisciplinary sarcoma team
- The ability completely to resect a retroperitoneal sarcoma and tumor grade remain the most important predictors of local recrrence and disease-specific survival