



ESPR

European Society of
Paediatric Radiology

institut **Curie**

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Fat-containing soft-tissue tumors in children, adolescents and young adults: Which one requires a biopsy?

L Cardoen, V Le Gaudu, A Gauthier, M Carton, N Nicolas, D Berrebi, J Cyrta, C Collignon, C Cordero, G Pierron, S Pannier, P Philippe-Chomette, D Orbach, HJ Brisse



Fat-containing soft tissue tumors (STT) in children and adolescents

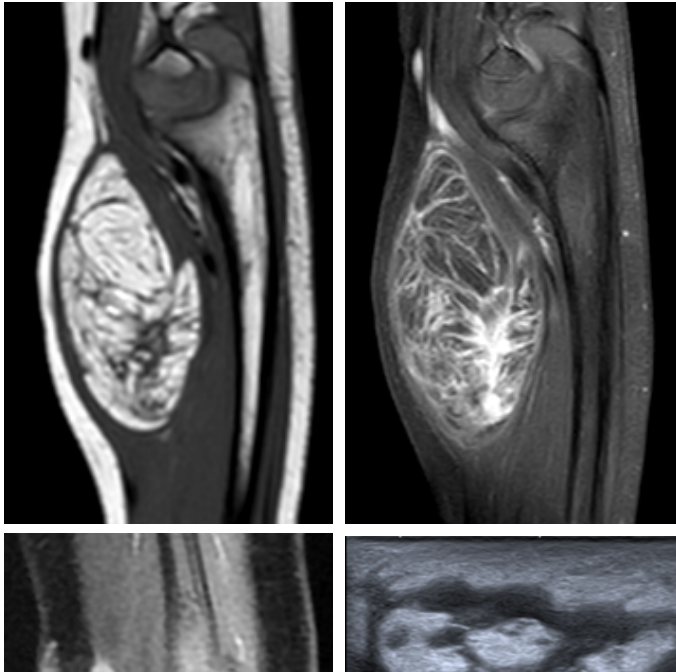
BENIGN

>>>

MALIGNANT

- Lipoma/lipomatosis
- Lipoblastoma/lipoblastomatosis
- Fibrous hamartoma of infancy
- Lipofibromatosis
- Involuting infantile and intramuscular hemangioma
- Hibernoma
- PTEN hamartoma
- FAVA

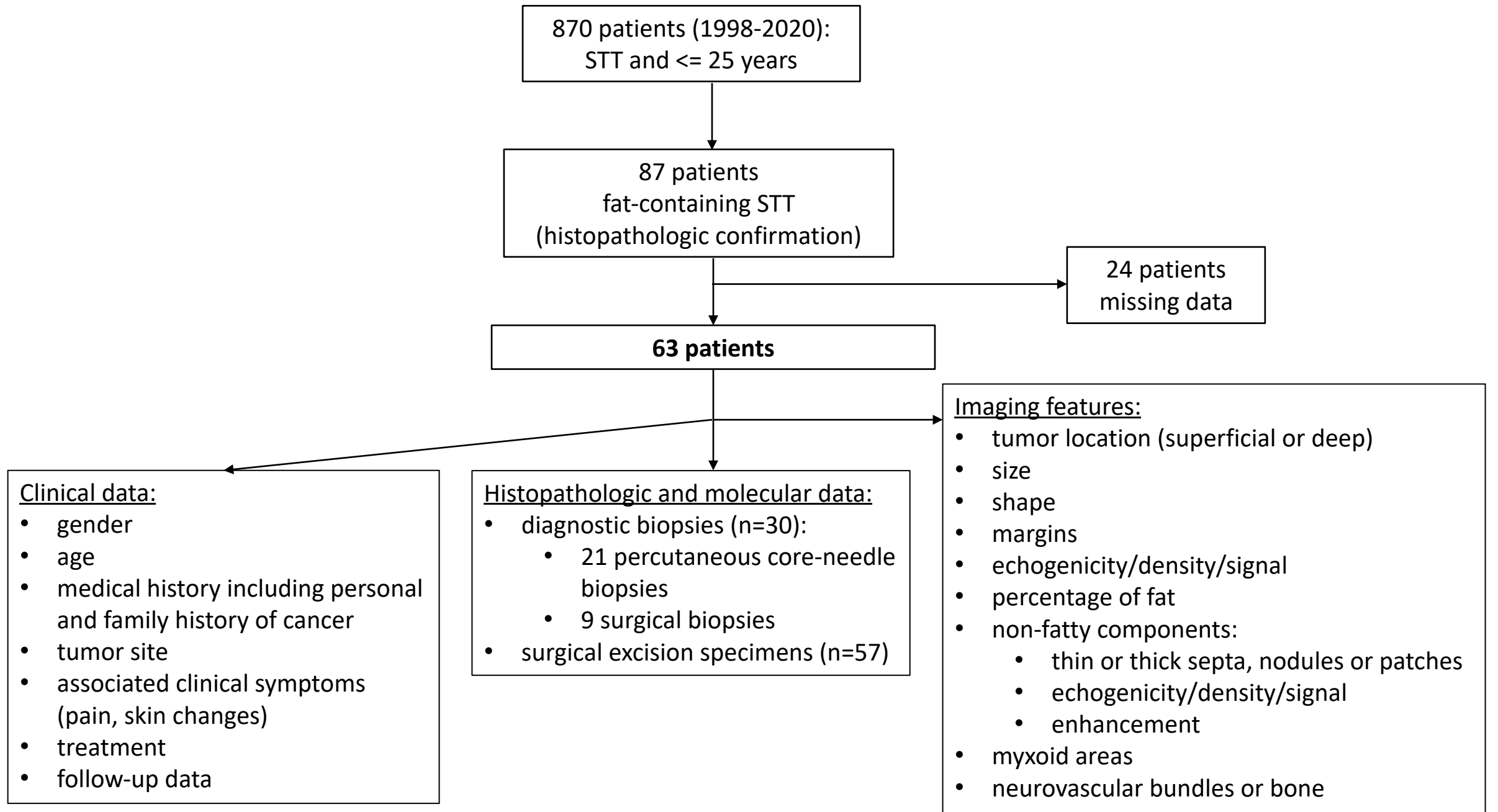
- liposarcoma

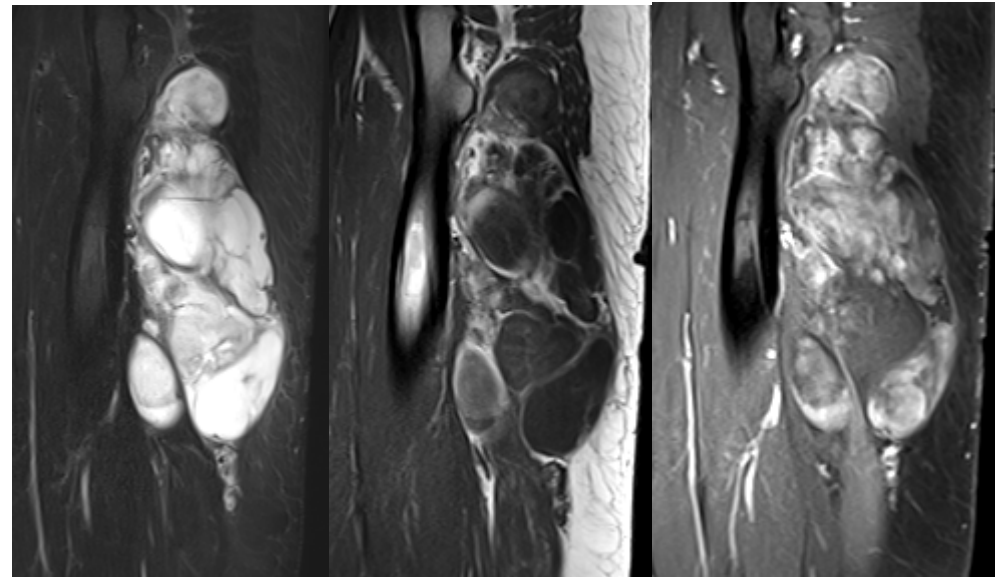
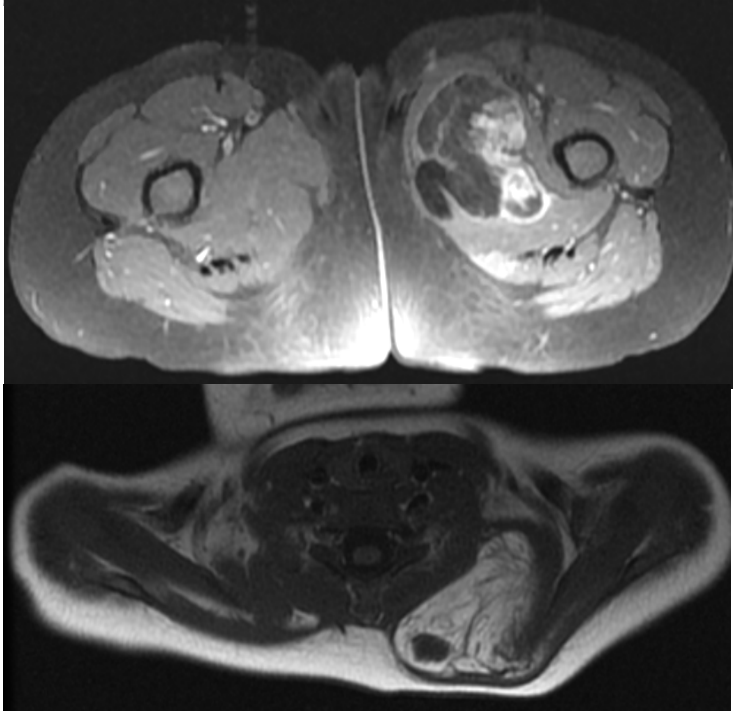
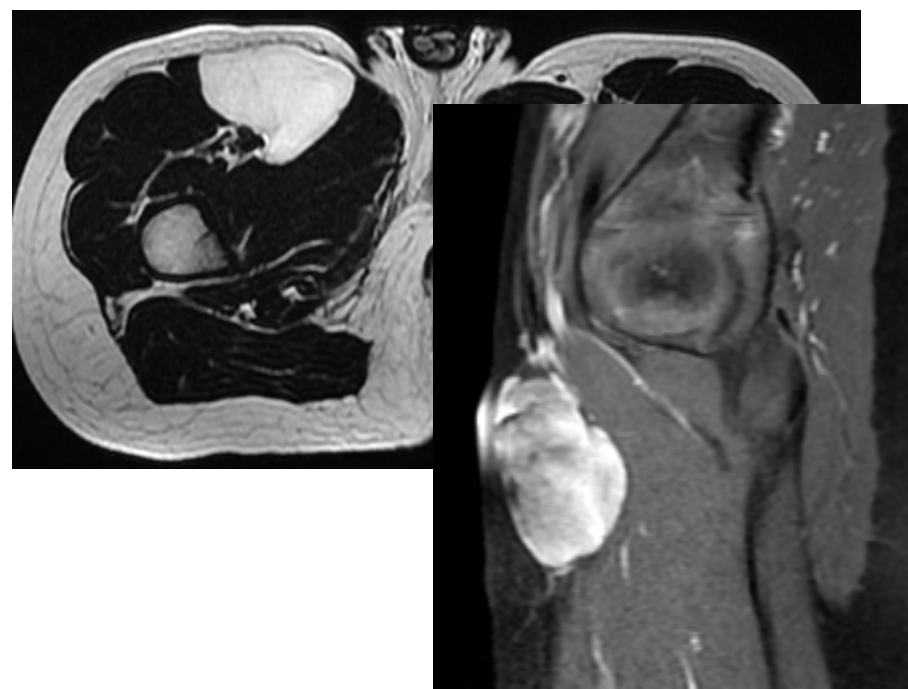
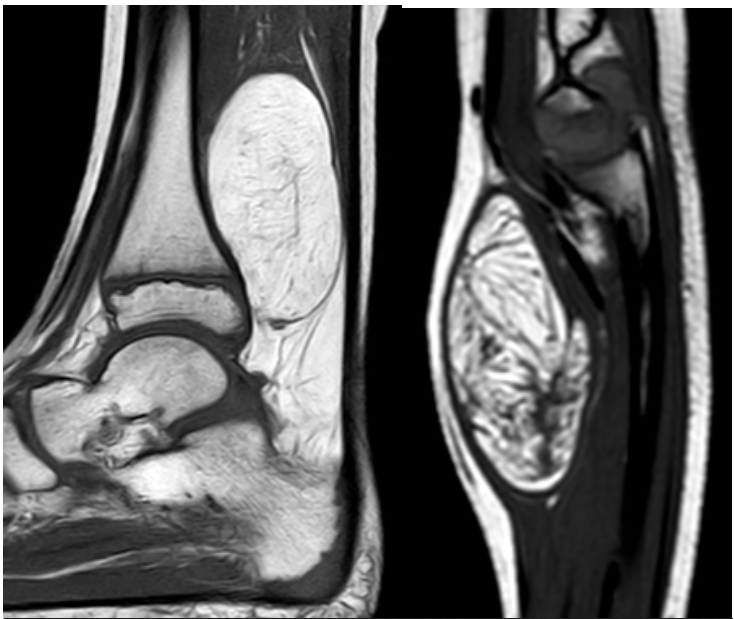


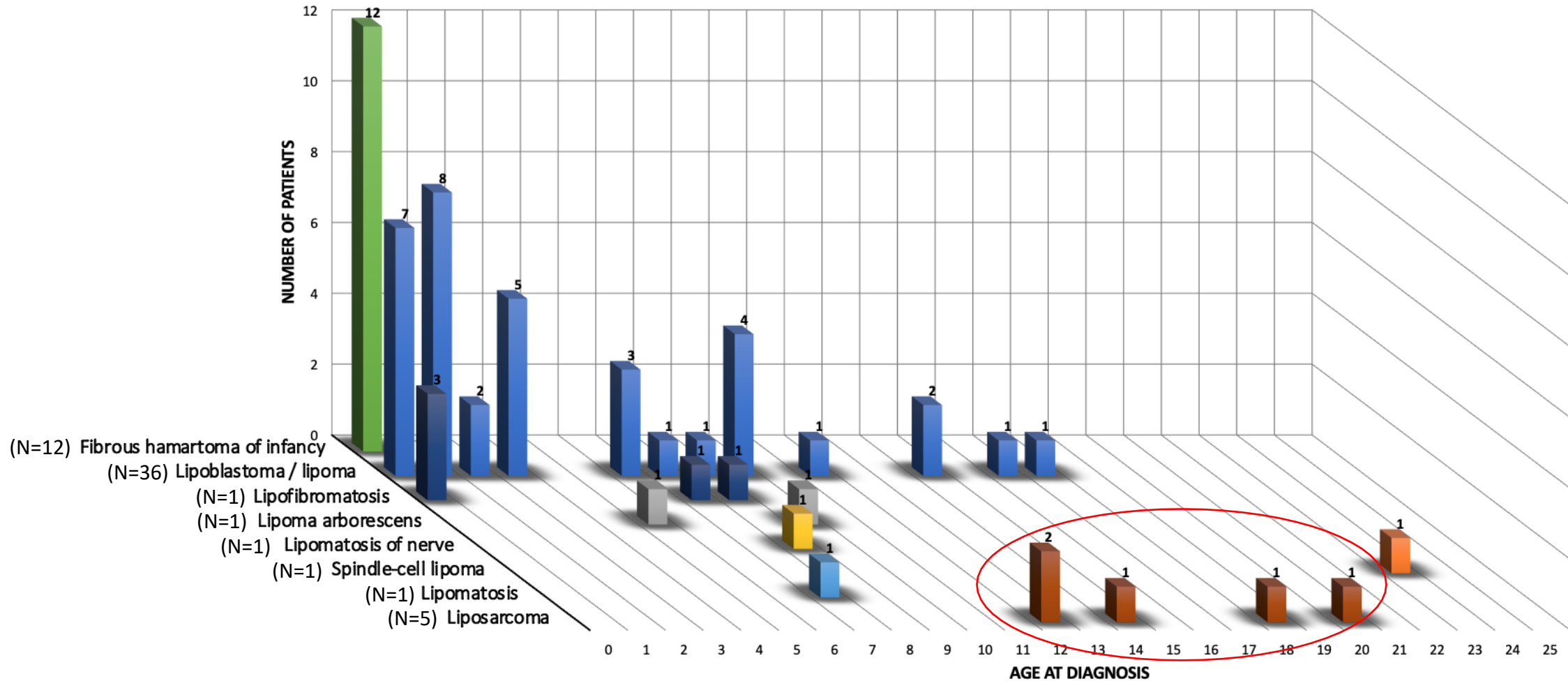
Clinico-radiologic guidelines for fat-containing STT in children and adolescents

Retrospective review of the imaging features of a series of **children** referred for fat-containing STT:

- **clinico-radiologic features associated with malignancy**
- **specific diagnostic strategy**



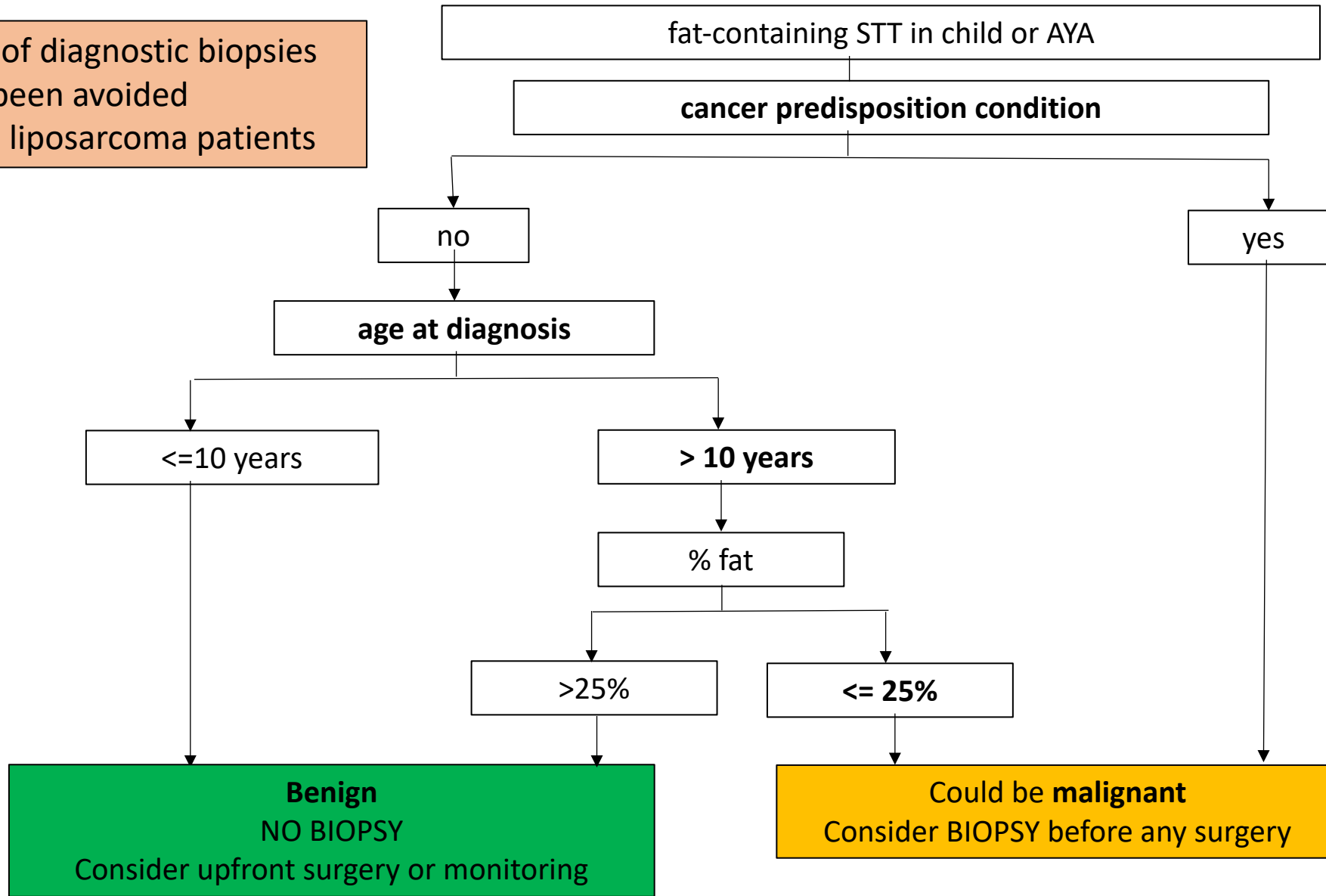




- Liposarcoma
- Lipomatosis
- Spindle-cell lipoma
- Lipomatosis of nerve
- Lipoma arborescens
- Lipofibromatosis
- Lipoblastoma / lipoma
- Fibrous hamartoma of infancy

	positive predictive value	negative predictive value
age at diagnosis (> 10-year-old)	45.5% (16.7% - 76.6%)	100.0% (93.2% - 100.0%)
cancer predisposition	100.0% (29.2% - 100.0%)	96.7% (88.5% - 99.6%)
<25 % fat	28.6% (8.4% - 58.1%)	100.0% (92.6% - 100.0%)
myxoid component	57.1% (18.4% - 90.1%)	100.0% (92.9% - 100.0%)

- 25/30 (83%) of diagnostic biopsies would have been avoided
- Biopsy for all liposarcoma patients



Conclusion

Fat-containing STT in children and AYA

- **almost exclusively benign**
- dominated by lipoblastomas at various stages of maturation
- clinical and imaging features statistically associated with malignancy (**biopsy+++**):
 - **predisposition** (genetic predisposition to cancer or previous oncologic treatment)
 - **age ≥ 10 -year-old**
 - **a low amount of fat (<25%)**
 - **myxoid areas**