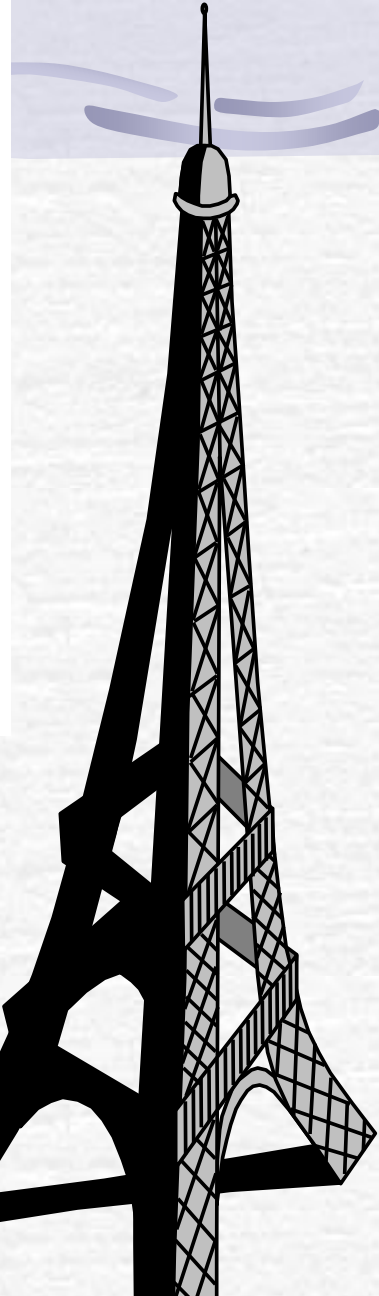


Ewing's sarcoma :long term favourable outcome in children with combinated modality therapy and conservative surgery

Standard treatment : chemotherapy and
surgery avoiding radiotherapy

H. Cornille, F. Delepine, S. alkalaf, A. Tabbi, G. Delepine
Nicole Delepine

www.nicoledelapine.fr

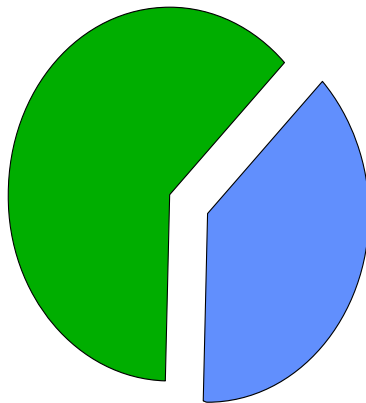


Patients

From november 1985 to january 2000, 21 children aged de 4.5 to 18 were treated by EWDD protocol for localized Ewing's sarcoma

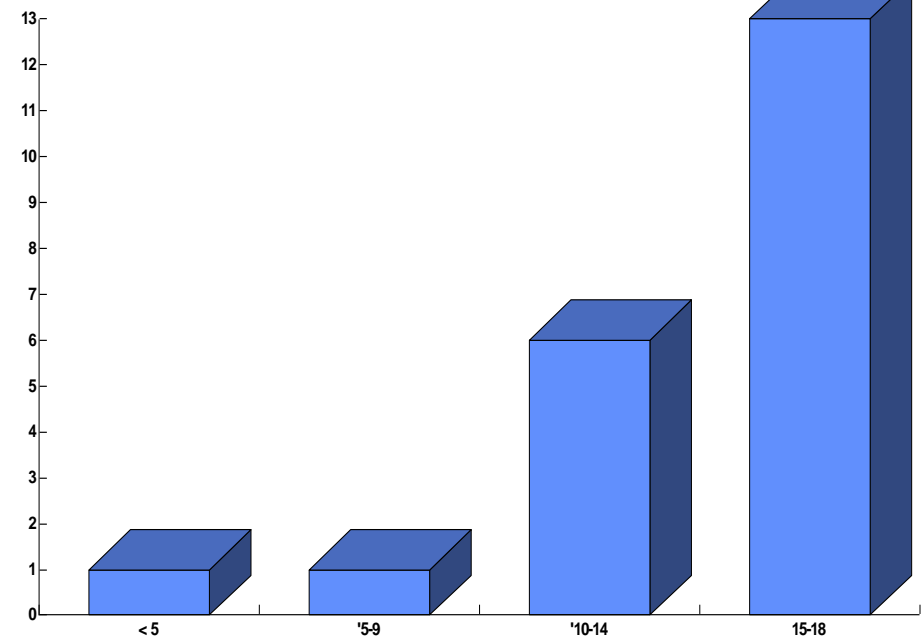
Sex

13 males



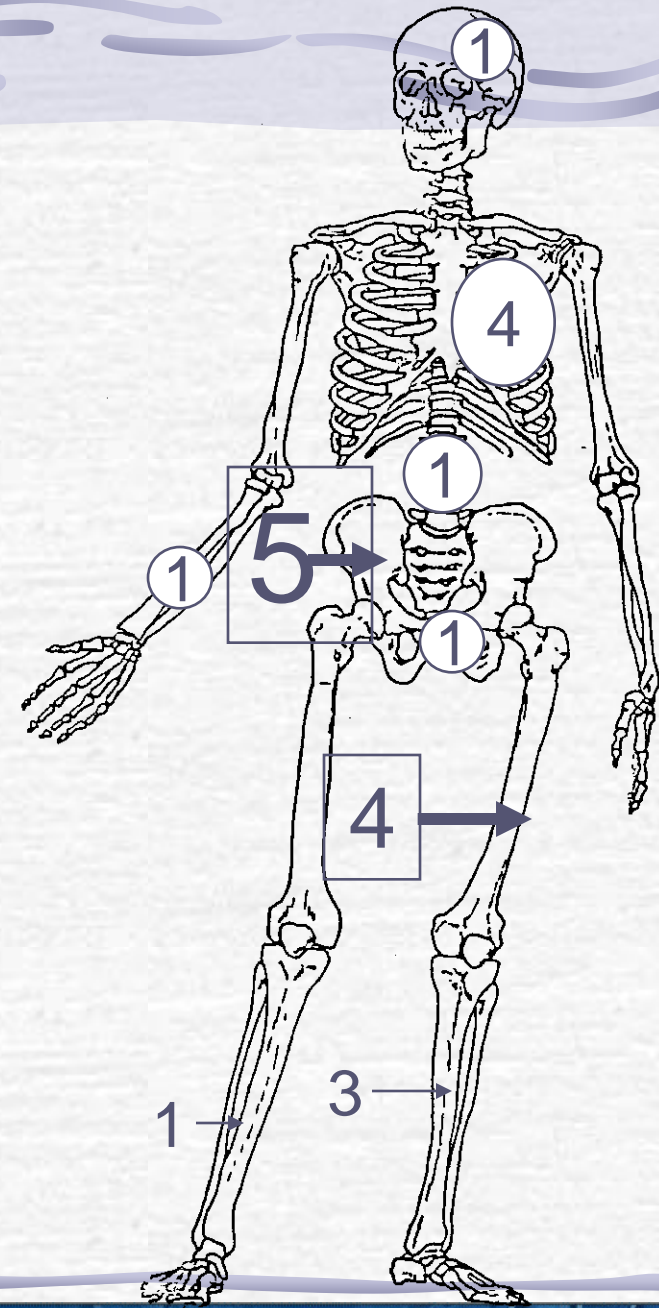
Females
8

Age of patients at biopsy.



TUMOR LOCATIONS

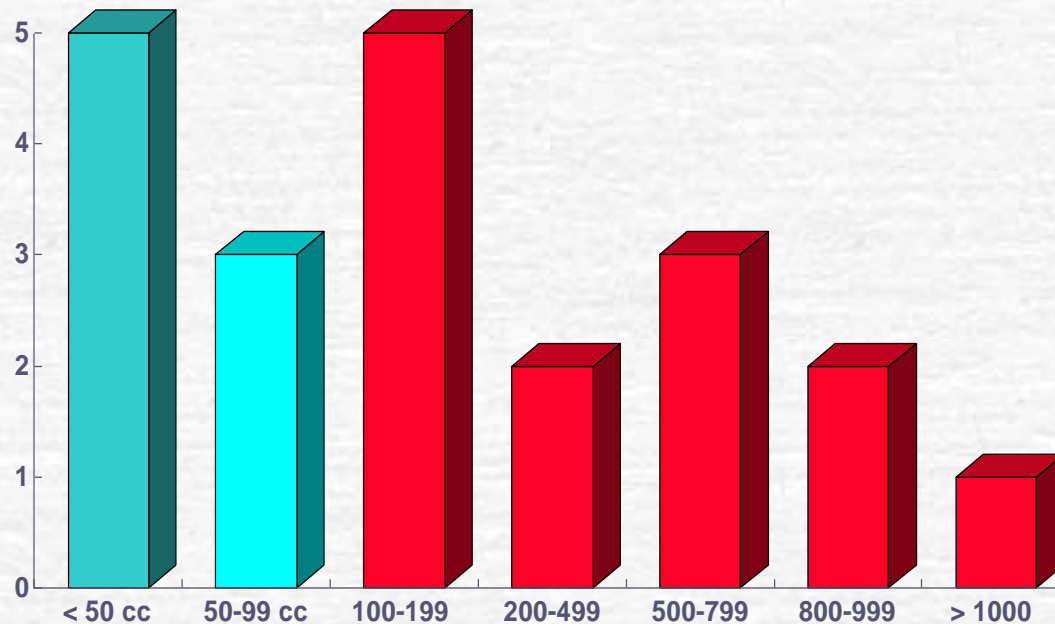
- ✎ Femur : 4
- ✎ Iliac : 5
- ✎ Rib : 4
- ✎ tibia : 3
- ✎ Fibula : 1
- ✎ spine : 1
- ✎ sacral : 1
- ✎ radial : 1
- ✎ mandibular : 1



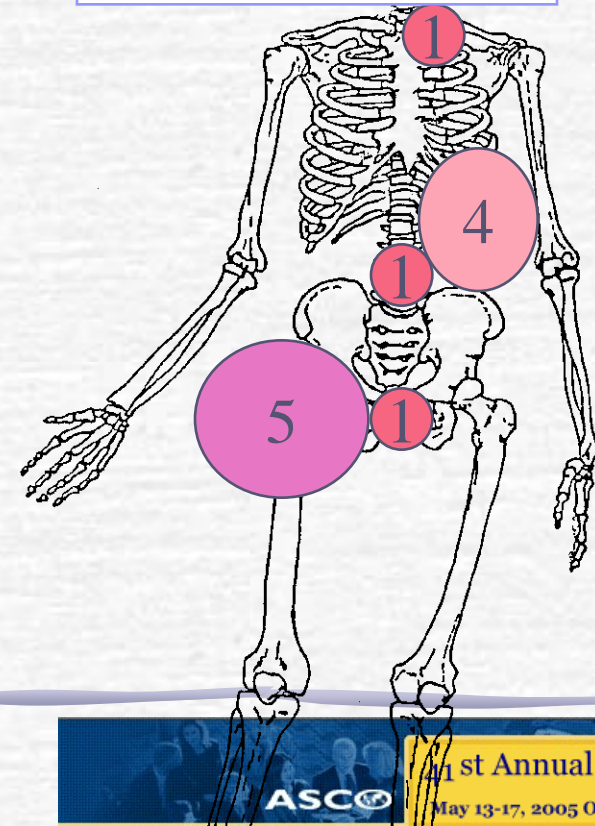
PROGNOSTIC FACTORS

18/21 PATIENTS HAD AT LEAST ONE CLASSICAL
BAD PROGNOSTIC FACTOR (tumoral volume >100ml or
central location).

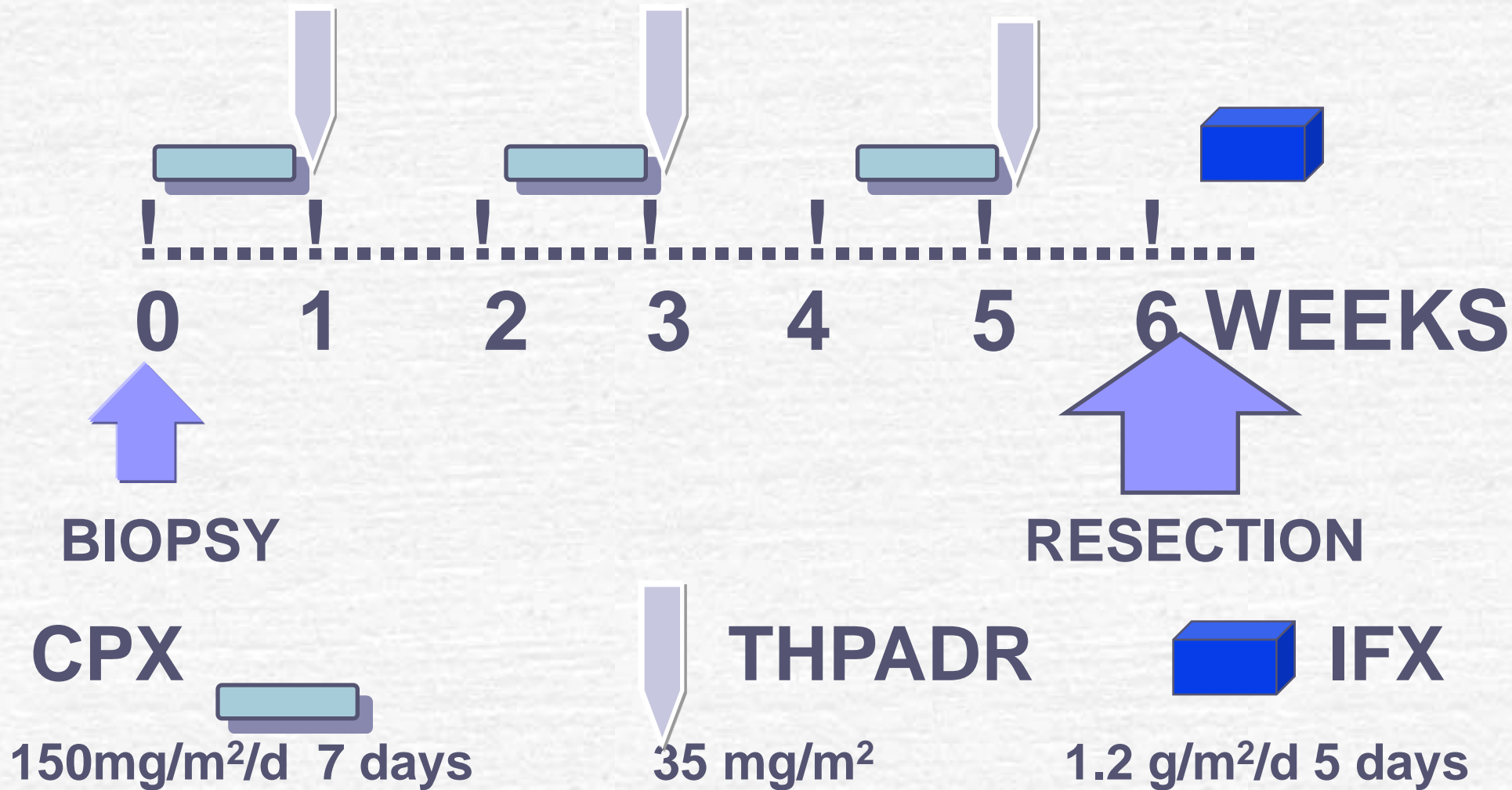
13 INITIAL TUMOR VOLUMES > 100 ml



12 central
locations

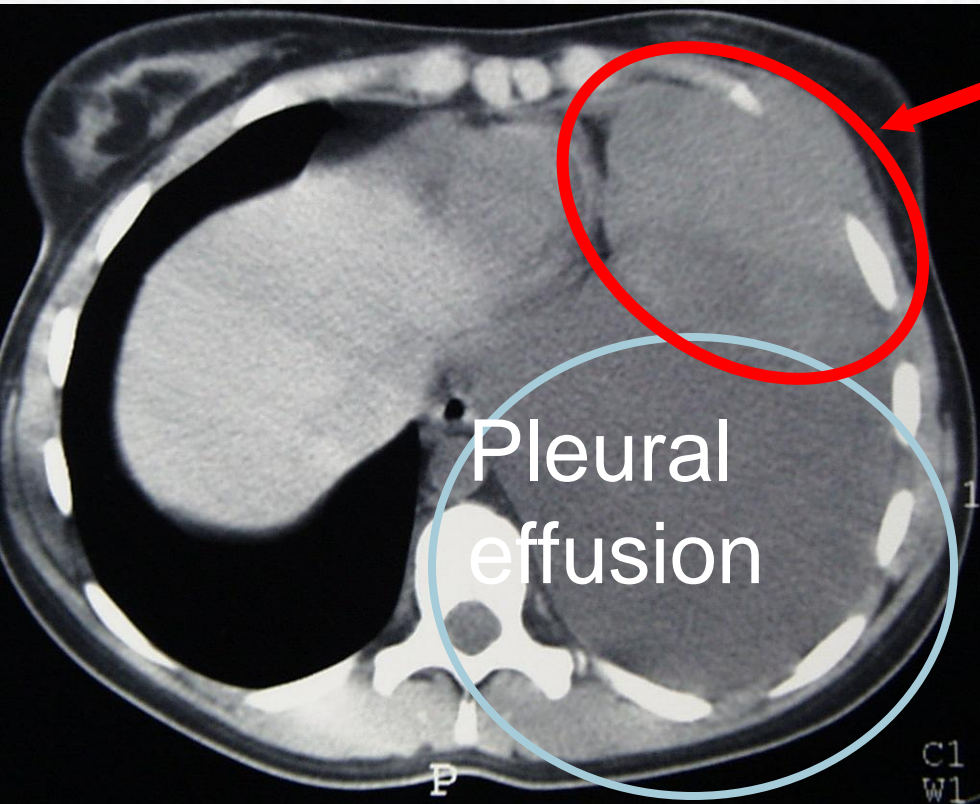


EW DD2 INDUCTION CHEMOTHERAPY

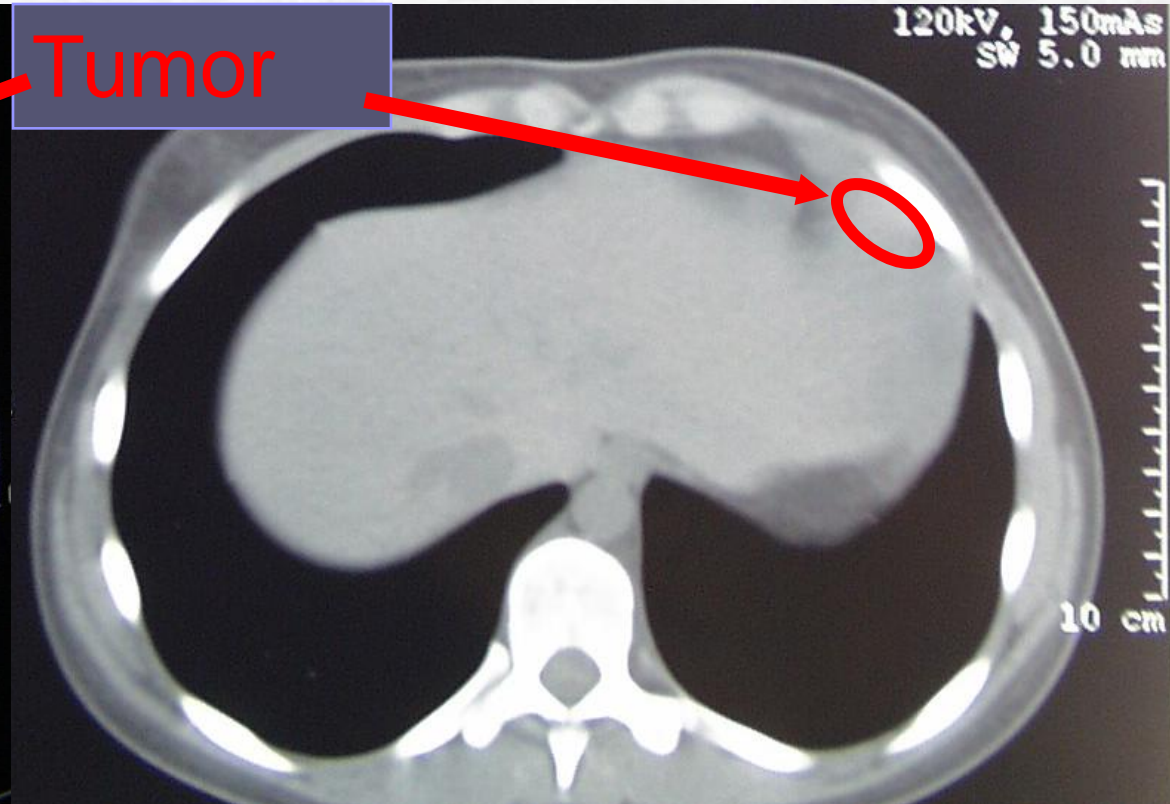


Response to preoperative chemotherapy

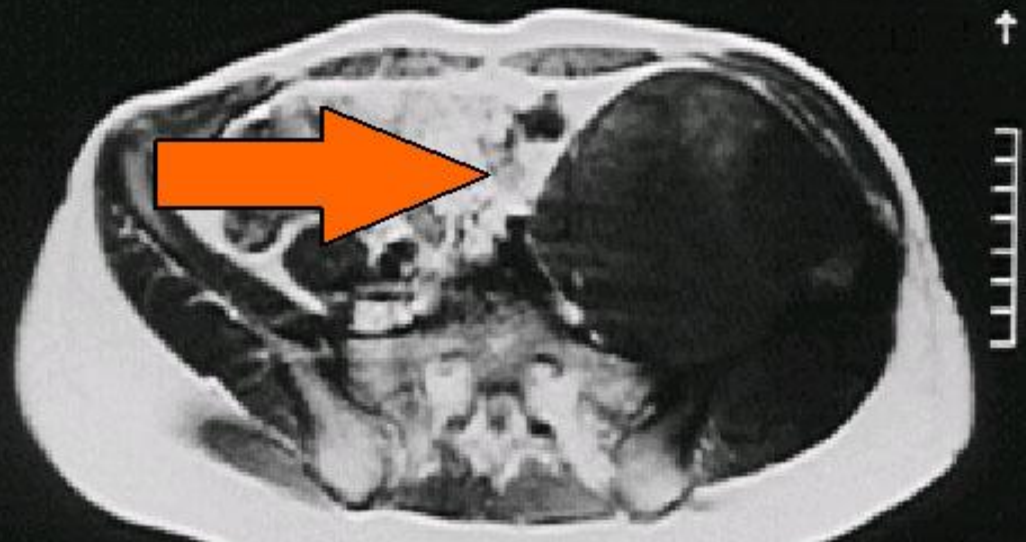
18 y old girl with a huge pleural infusion leading to discovery of a rib tumor with little pain. Very impressive radiologic response in 6 weeks.



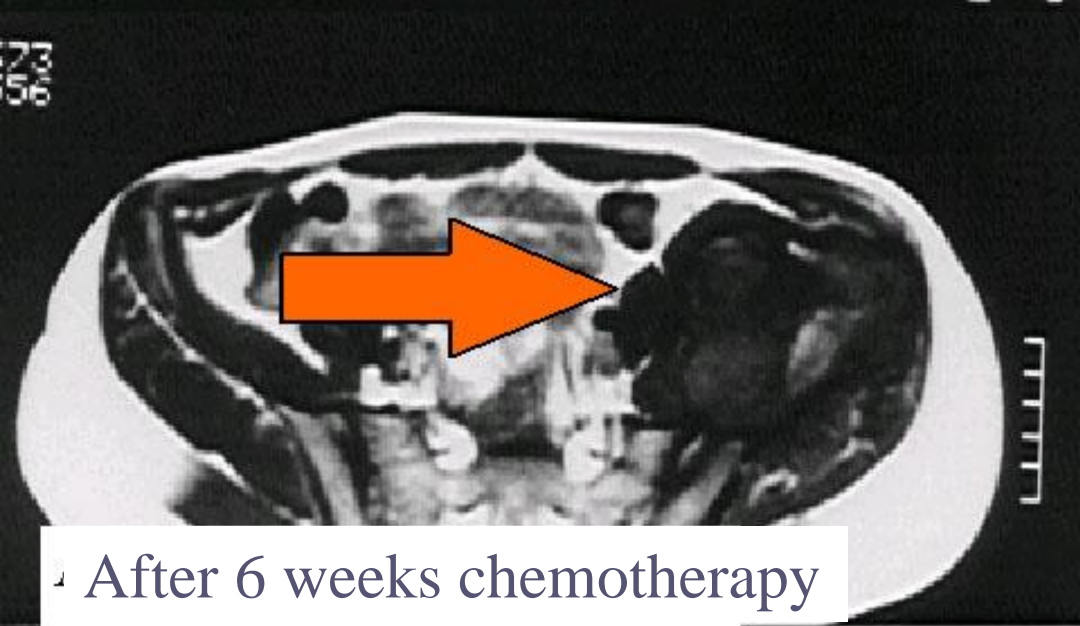
Before chemotherapy



After 6 weeks bidrug chemotherapy



Before chemotherapy



After 6 weeks chemotherapy

Response to preoperative chemotherapy

Decrease of tumoral diameter : 38 %

Decrease of tumoral volume : 76%



Before chemotherapy

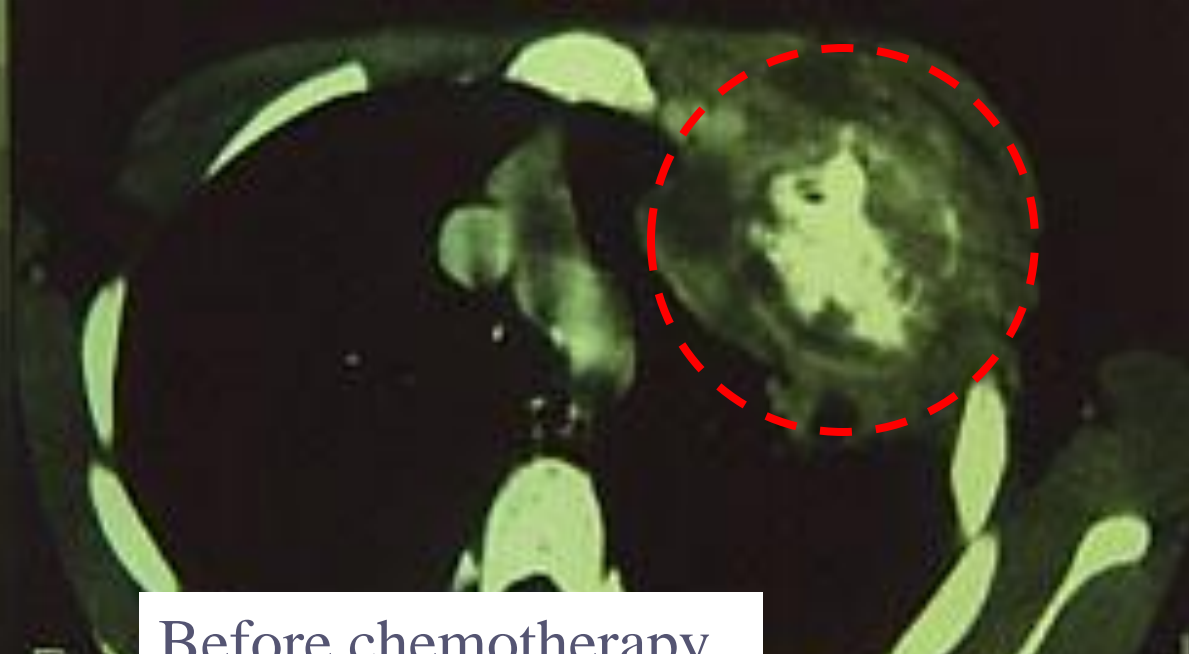


After 6 weeks chemotherapy

Response to preoperative chemotherapy

Decrease of tumoral diameter : 28 %

Decrease of tumoral volume : 63%



Before chemotherapy



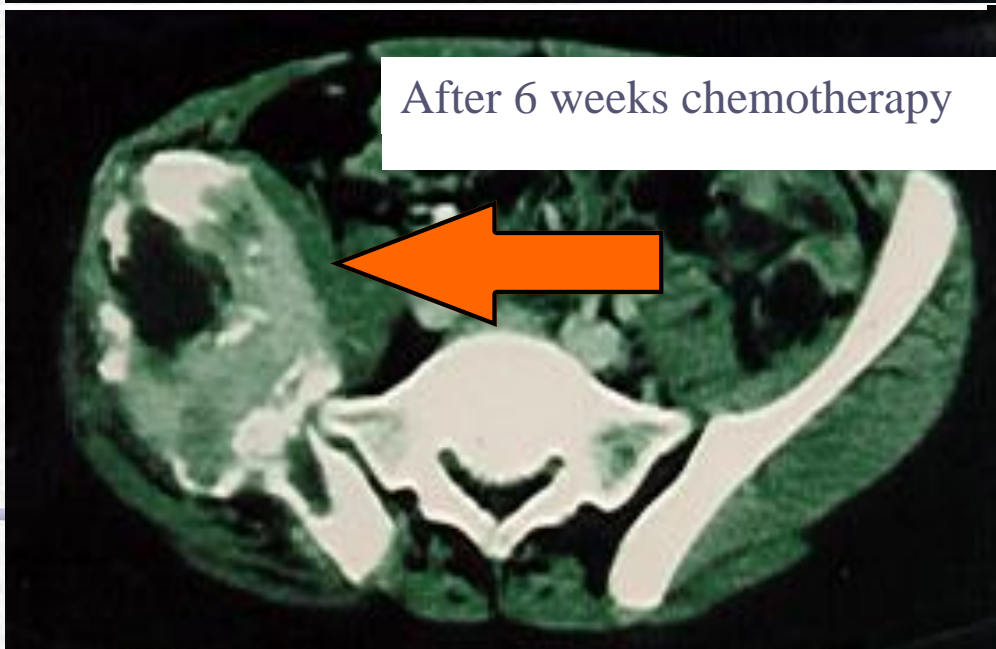
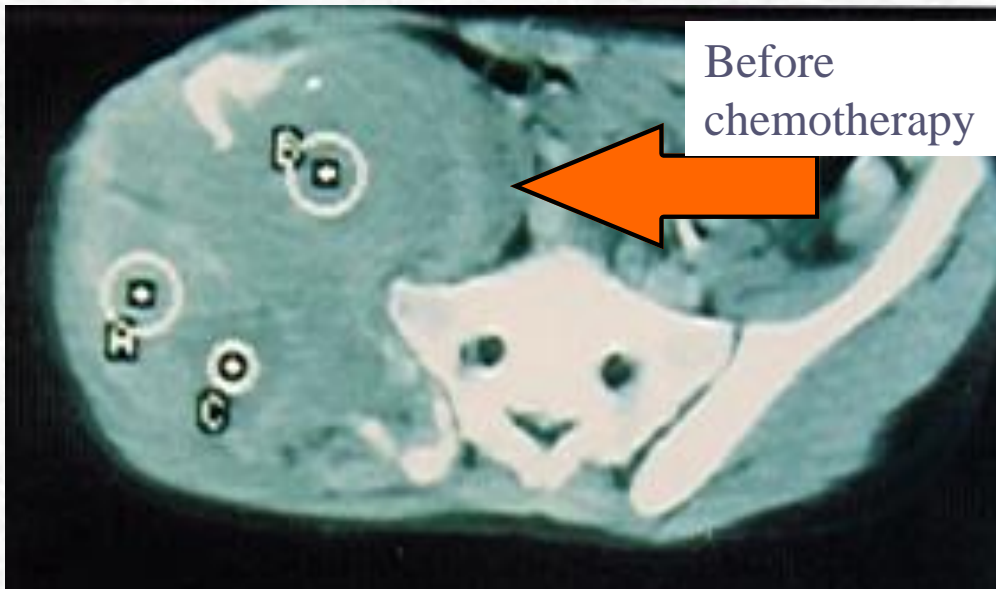
After 6 weeks chemotherapy

Response to preoperative chemotherapy

Decrease of tumoral diameter : 50 %

Decrease of tumoral volume : 88%

Response to preoperative chemotherapy



Decrease of
tumoral size : 66%

**Decrease of
tumoral volume :
95%**

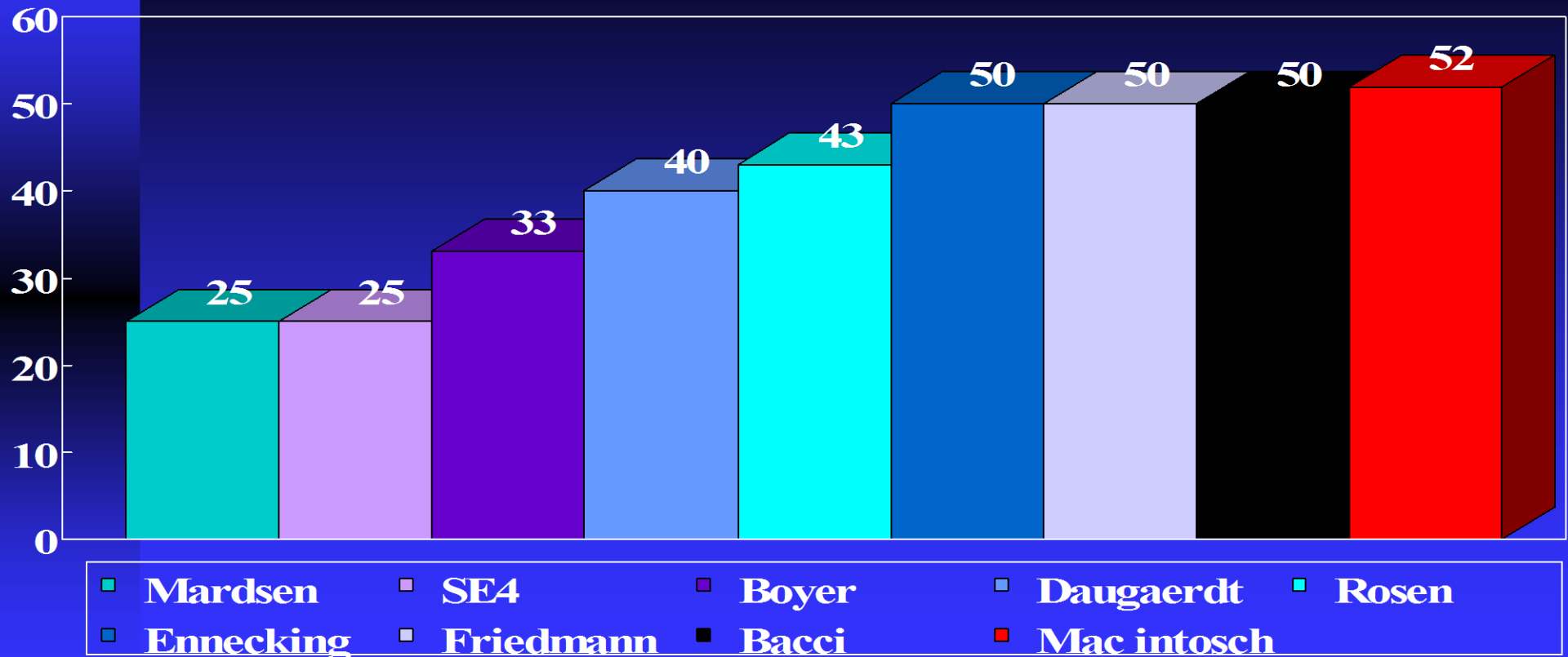
Standard treatment excluded radiotherapy

- In this protocol early extra tumoral en bloc resection without radiotherapy was the standard local treatment.
- It was performed in all cases without risk of neurological sequelae.
- 3 patients with contaminated margins received postoperative radiotherapy

Why all our patients were operated ?

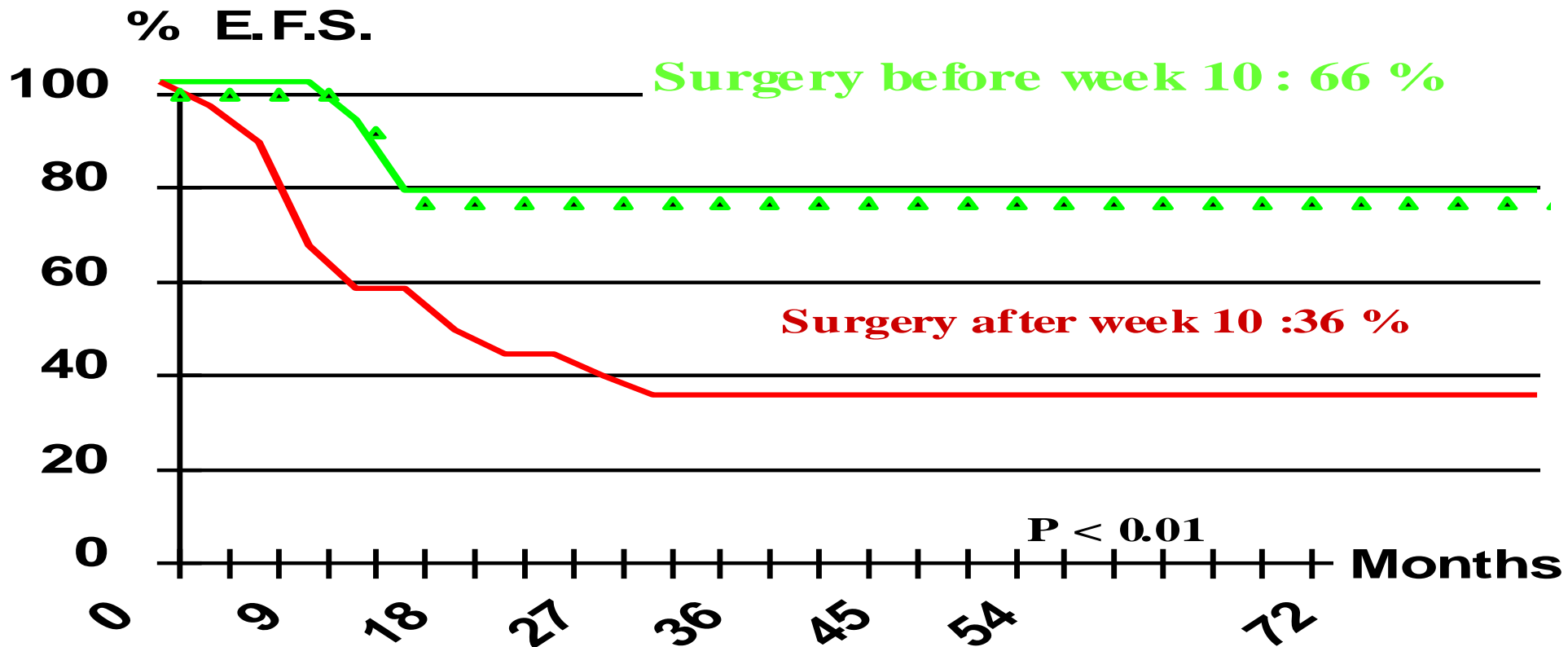
In the litterature , risk of local reccurence following radiotherapy reaches 20% to 50%

Mean published risk : 36%



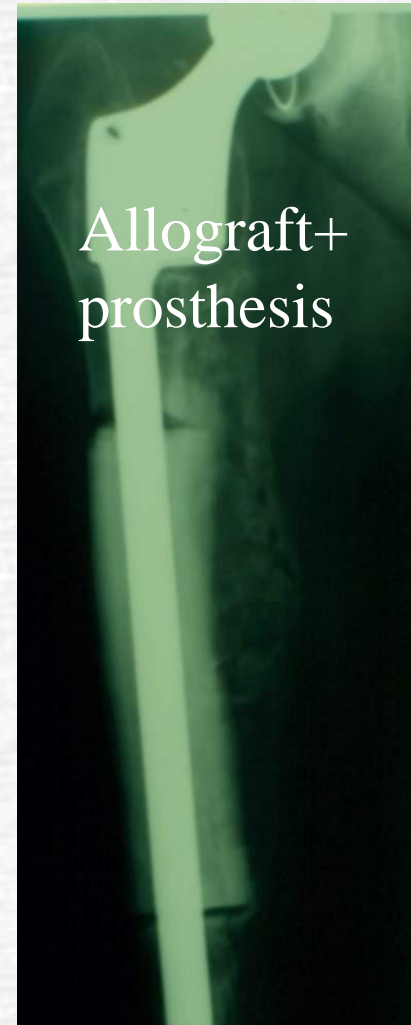
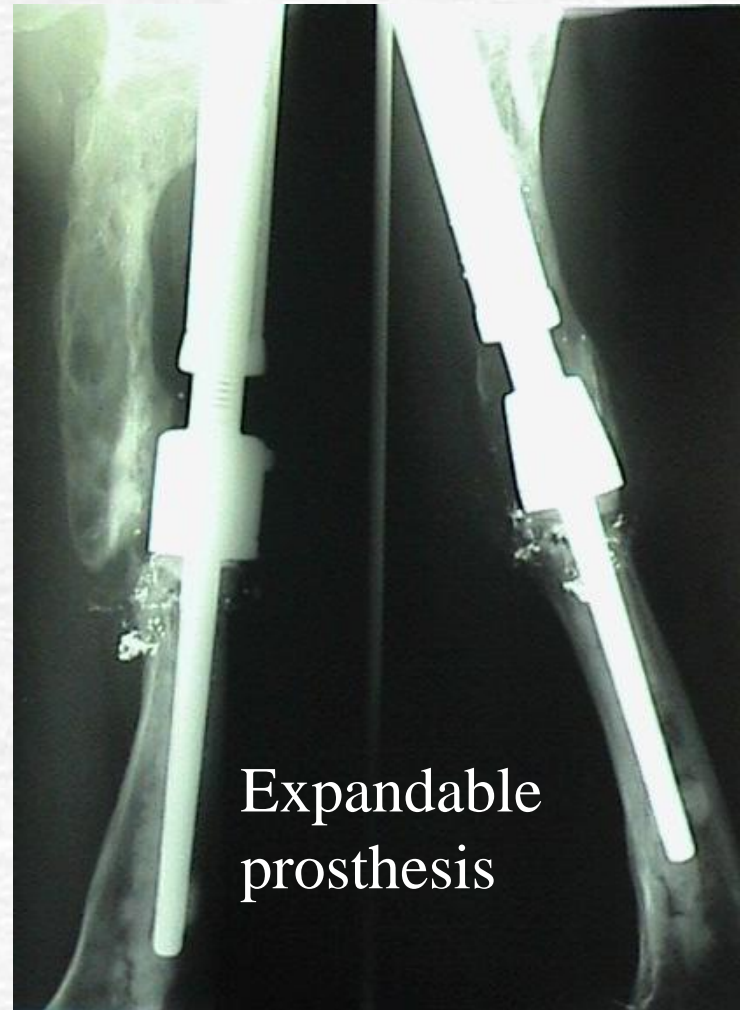
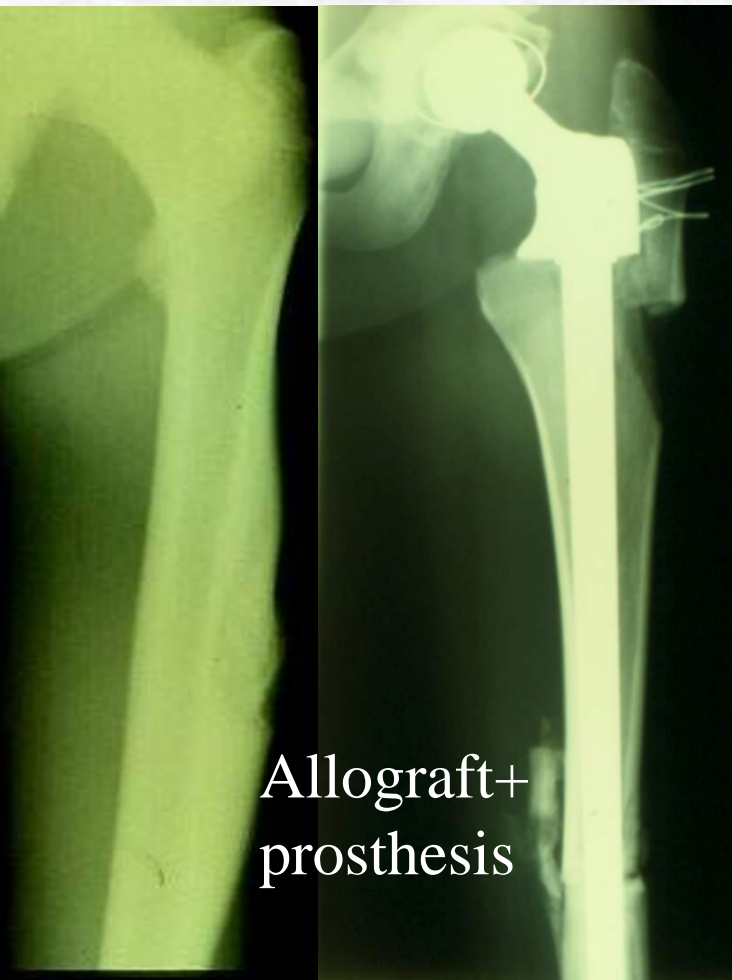
All patients were operated EARLY

In our surgical experience ⁽¹⁾ early resection is a significant prognostic factor



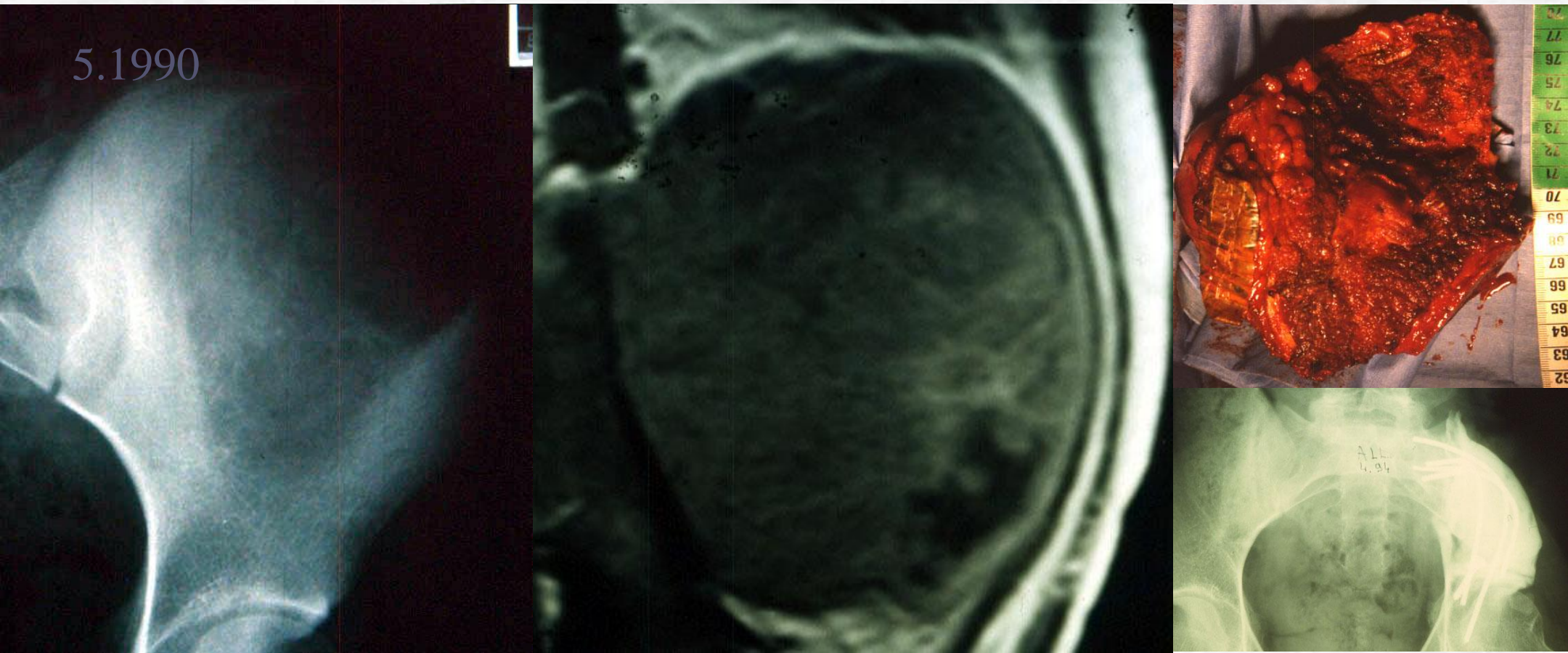
⁽¹⁾ Analysis of a monocentric experience of surgery in Ewing's sarcoma. N. Delepine and all
Med. and Ped. Oncology. Vol. 27 n°4, 316, octobre 1996.

All limb tumors were resected



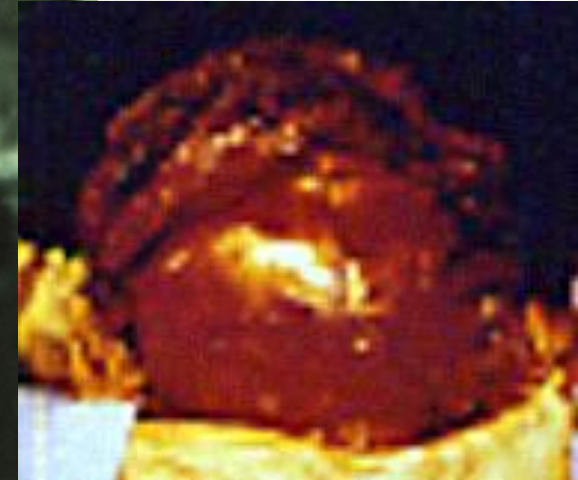
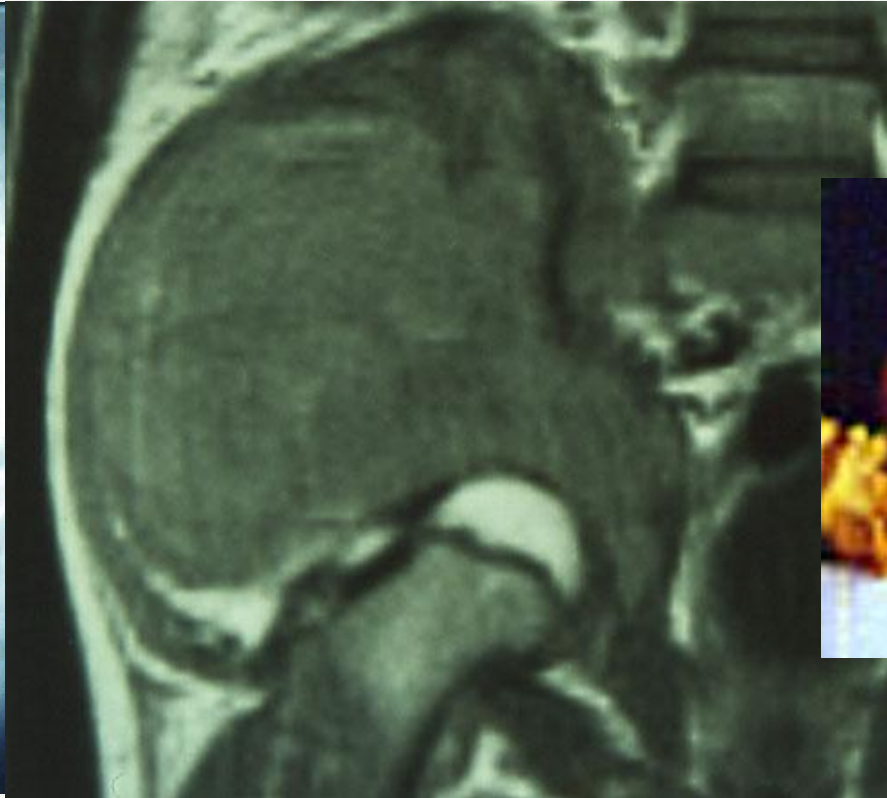
Some cases of reconstructive procedures used after resection of femoral Ewing

All pelvic tumors were resected



- 16 Y old girl with a huge IIB tumor of iliac wing.
- En bloc resection after 6 weeks chemotherapy.
- Skeletal reconstruction using cement. Excellent oncologic and fonctionnal results with 15 years follow up

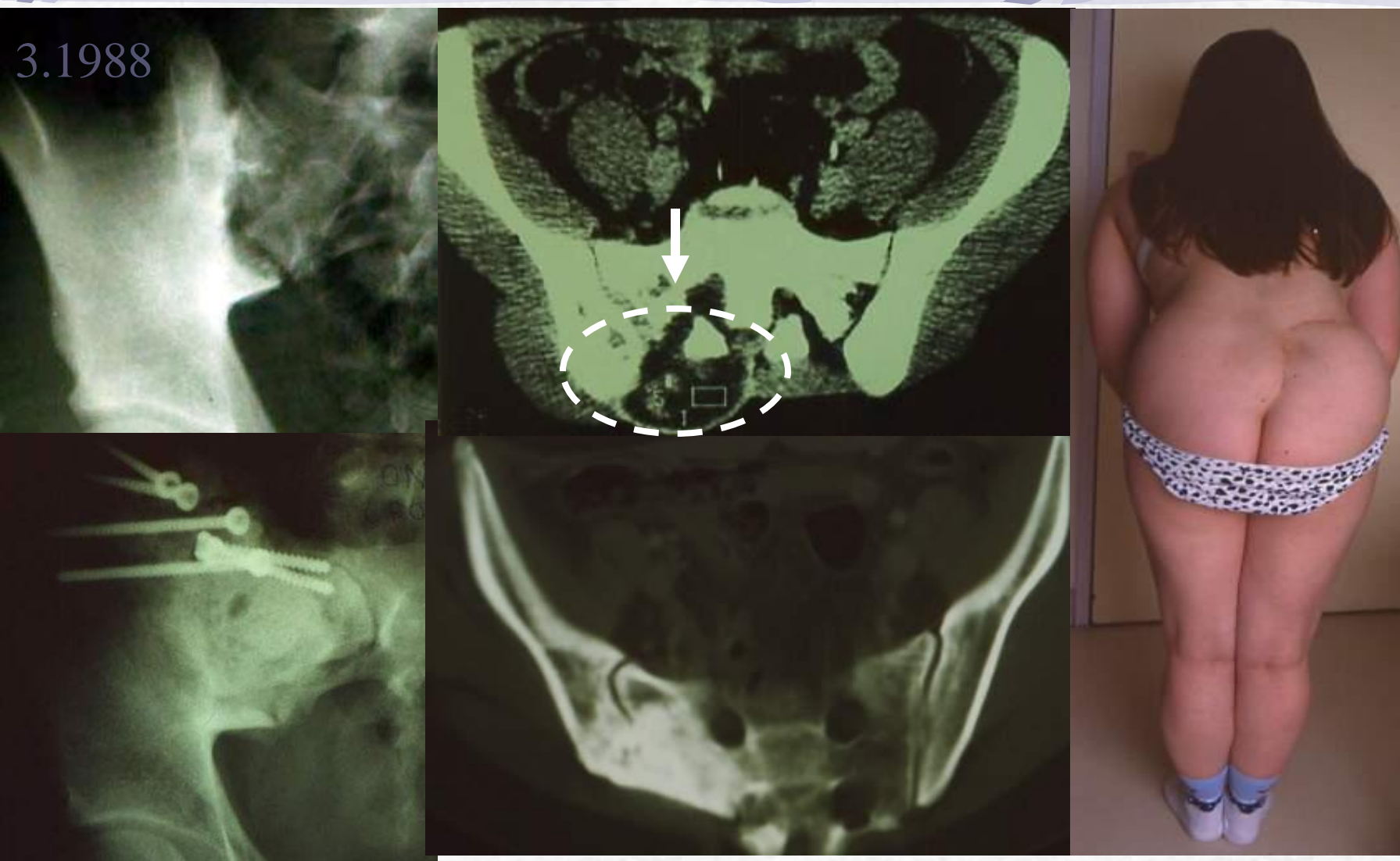
Even huge pelvic tumors were resected



Resection of huge tumors are challenges but most important for prognosis.

Early resection of huge tumoral mass can prevent chemoresistance

Even sacroiliac tumors



17 years remission after en bloc resection
and reconstruction with cement

POSTOPERATIVE CHEMOTHERAPY

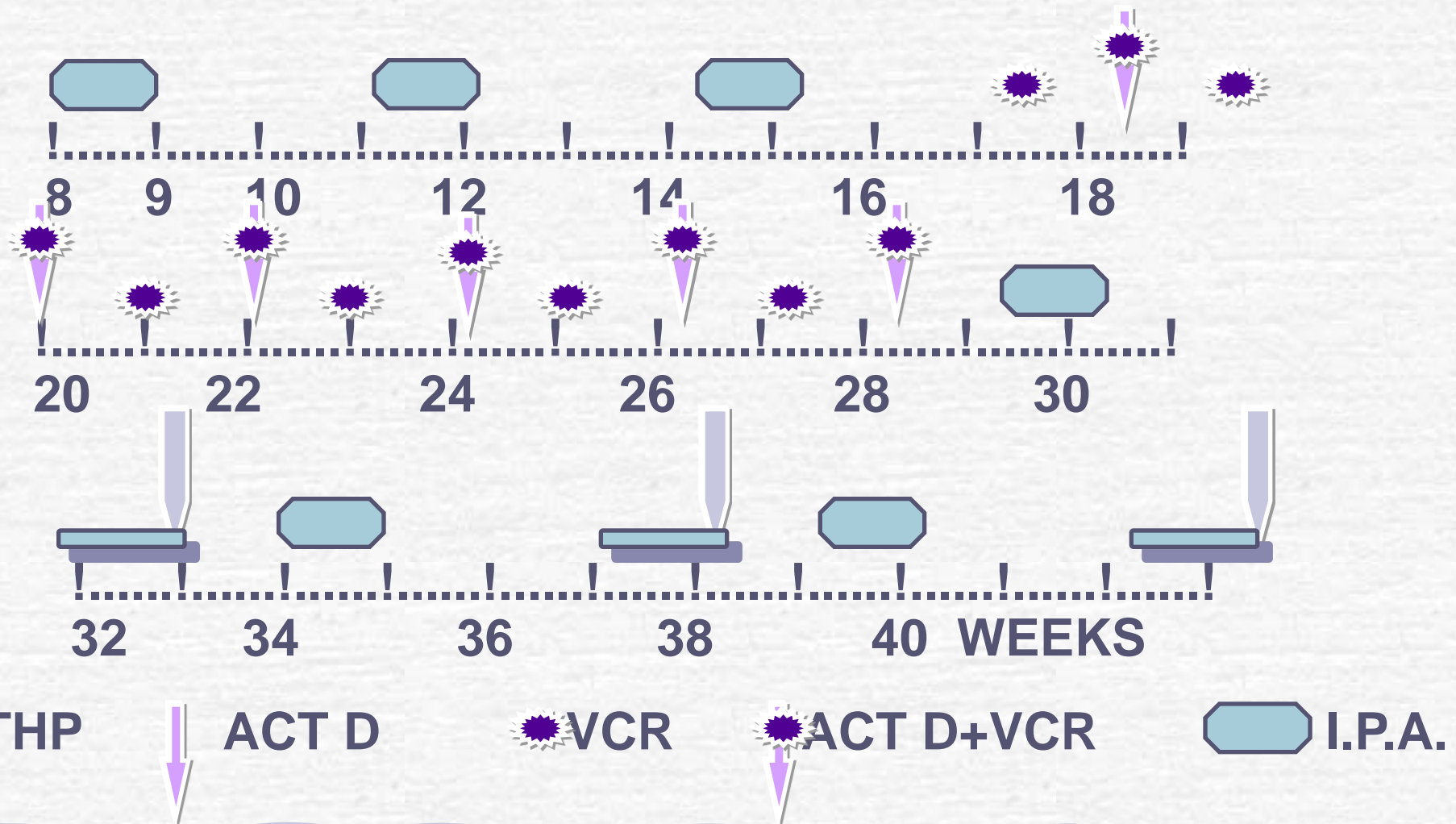
Postoperative chemotherapy alternated :

- 6 IPA (Ifosfamide 6 gr/sqm, Cisplatinum 125 mg/ m², Pirarubicine 35 mg/ m²)

- 3 Cyclophosphamide(150 mg/m² 7d)
+Pirarubicine (35 mg/m² d 8)

- 12 weeks of Vincristine (2 mg/ m² x 12),
Actinomycine D (2 mg/ m² x 6)

EW.DD2 PROTOCOL. POST OPERATIVE CHEMOTHERAPY



TREATMENT TOLERANCE

Tolerance of preoperative chemotherapy is excellent and permits best conditions for the surgery.

Toxicity of postoperative chemotherapy is heavier

1. 20% Vincristine induced multinevritis.
2. 1 Vesical grade 4 toxicity induced by Ifosfamide.
3. 1 Renal toxicity following a course of IPA.
4. Anthracyclines (pirarubicine) low toxicity : only two ECG transitory anomalies.

Late complications related to treatment

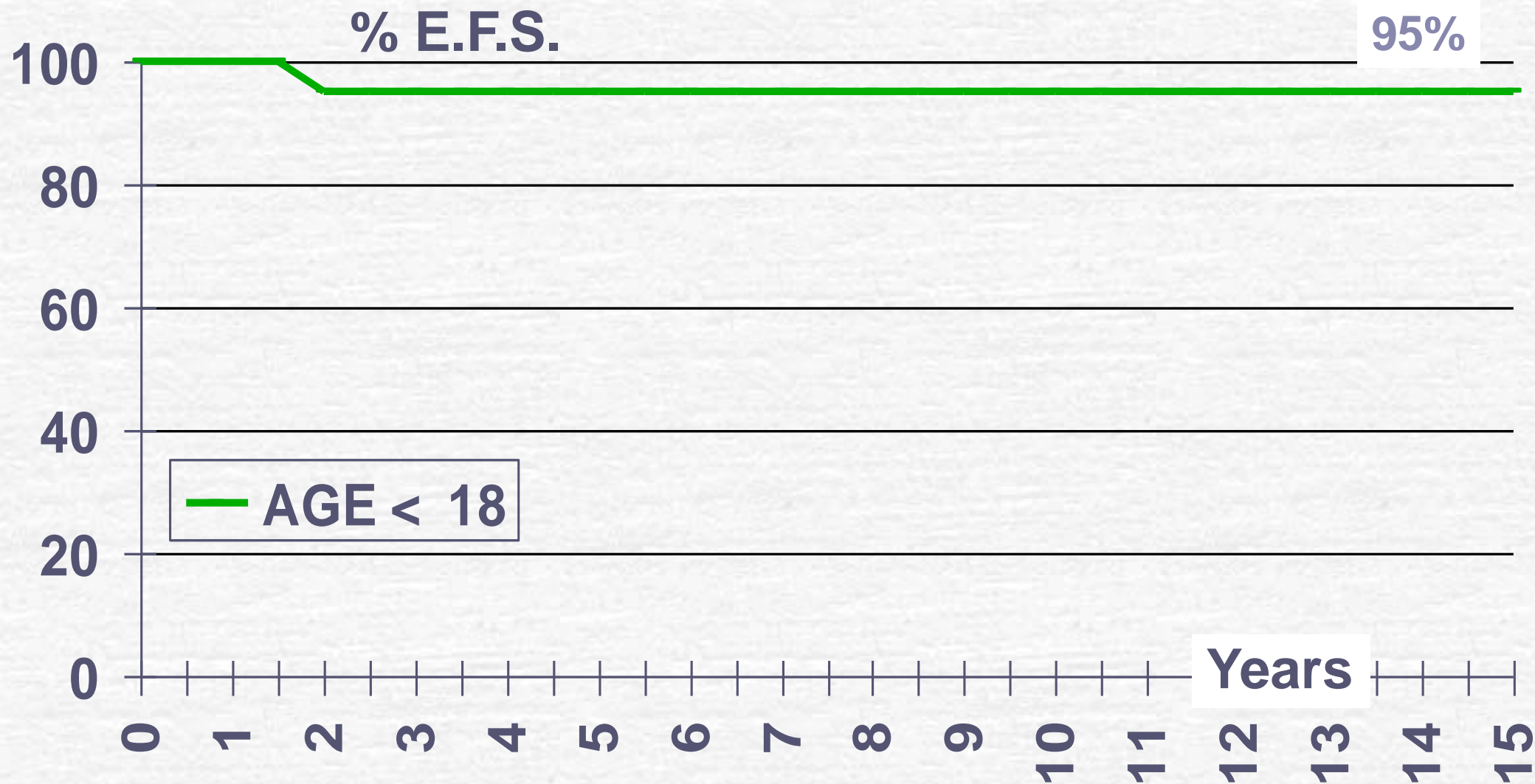
We observed two colic cancers in patients treated by this protocol.

Patients were even free survivors when colic cancer occurred, respectively 13 years and 15 years following treatment.

Both patients received post operative radiotherapy after contaminated resection of sacroiliac tumors.

Both patients are in CR for the second cancer

Oncologic results



EW DD. 21 children with localized Ewing .Median follow up :
10 years (min 5 , max 19,5). 20/21 patients are DFS.(15 / 04 / 2005)

CONCLUSION 1

- ✓ This series shows the excellent long term prognosis of children with localized Ewing's sarcoma treated by this protocol derived from Hayes , with shorter (6 weeks) bidrug induction.
- ✓ and systematic conservative surgery.
- ✓ followed by six drugs postoperative chemotherapy

CONCLUSION 2

- ✓ This series confirms the results of Hayes
- ✓ on patients treated by surgery : 10/11 operated patients were DFS

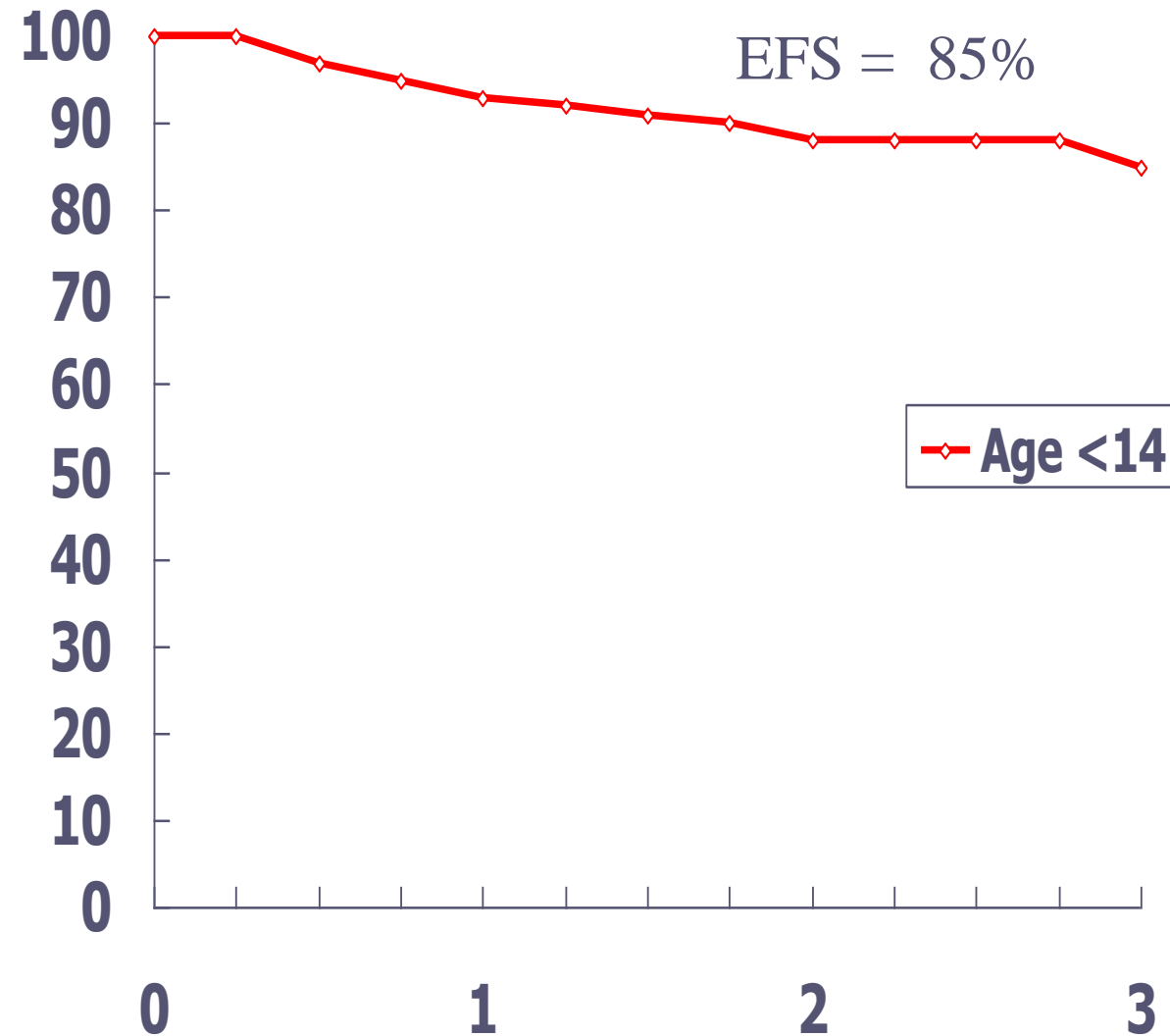
Therapy for localized ewing's sarcoma.

Hayes J.Clin.oncol. 1989, 7, 2, 208-213.

CONCLUSION 2

✓ This series also confirms the good prognosis of young patients observed in the multicentric italian SE 91 study published by Rosito

Rosito P. et al
Cancer, 1999; 86: 421-428.



CONCLUSION 3

- It emphasizes the low toxicity of this chemotherapy.
- And underlines the risks of radiotherapy even at mild doses (2 second cancers out of 3 patients irradiated) and the need to avoid it as often as possible.