

Acrylic reconstruction after en bloc resection of iliac bone for sarcoma



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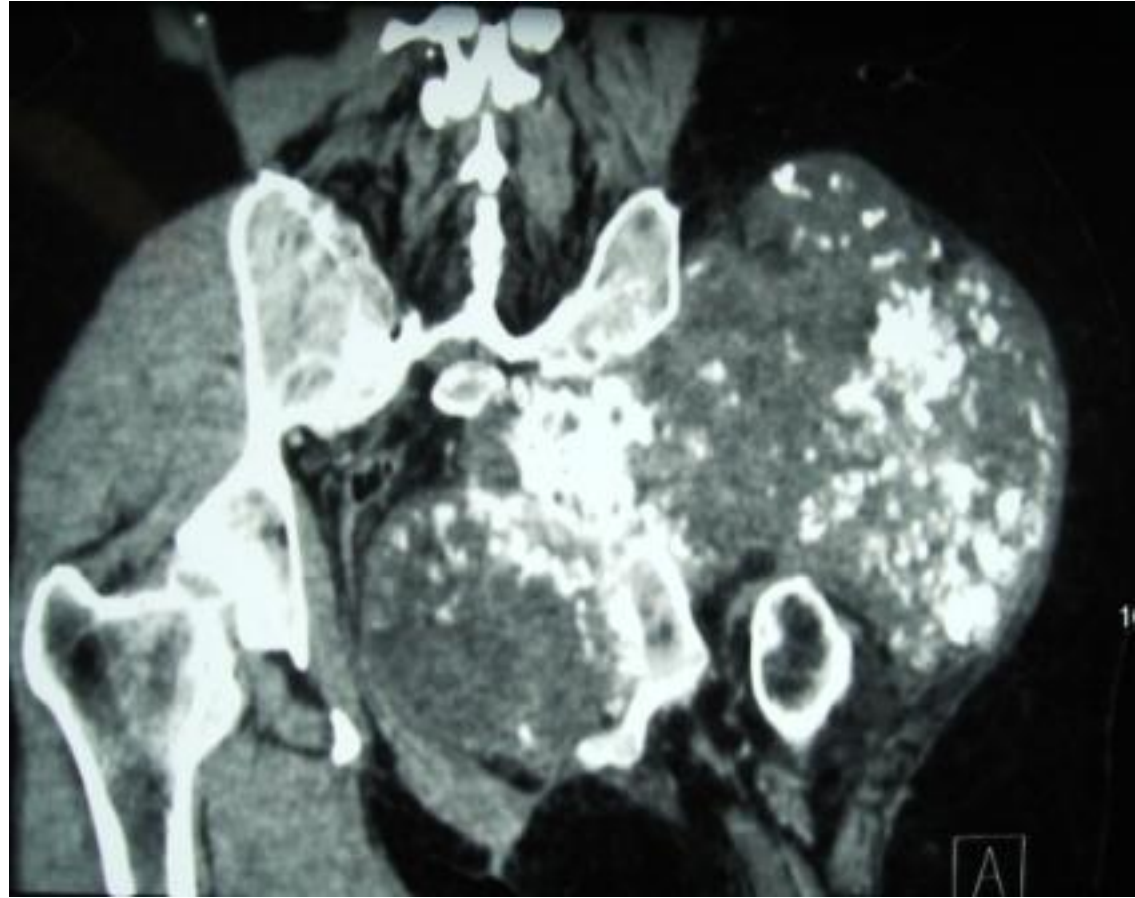
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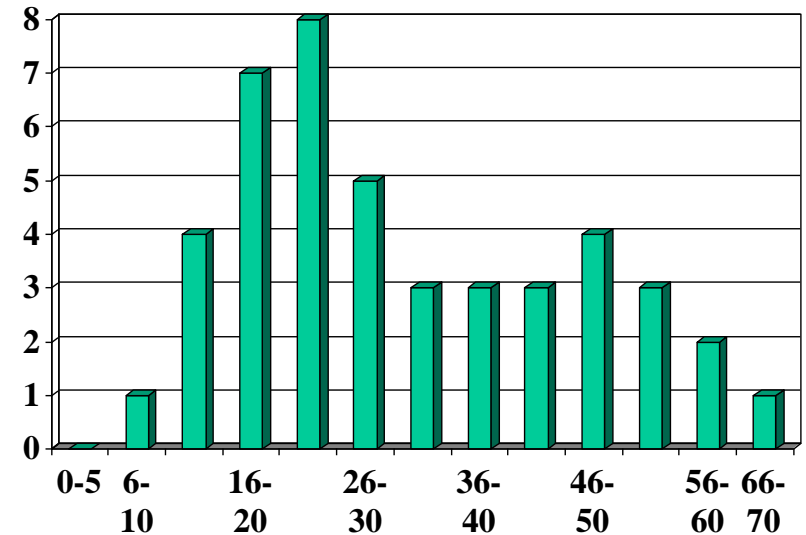
Introduction

Location on iliac bone accounts for 20% to 30% of sarcoma.. Gold standard of local treatment is wide resection but till now few papers have tried to evaluate the long term results of reconstructive procedures when chemotherapy and /or radiotherapy are used

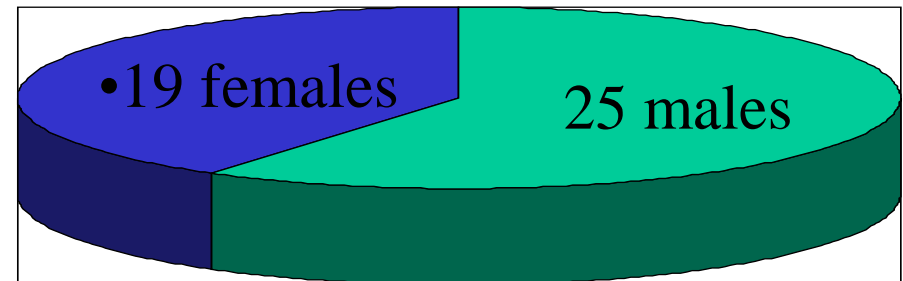


Patients

44 patients (25 males and 19 females aged 9 to 66 years) with bone sarcoma of innominate bone in Zone 1, 2 or 4 (without involvement of acetabulum) were treated and/or followed up by the same team in 23 years



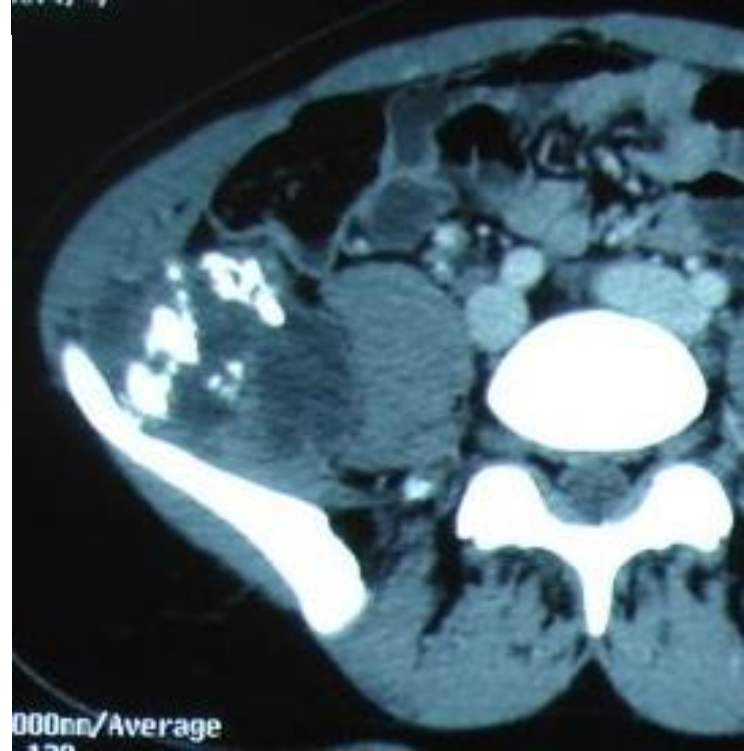
Age



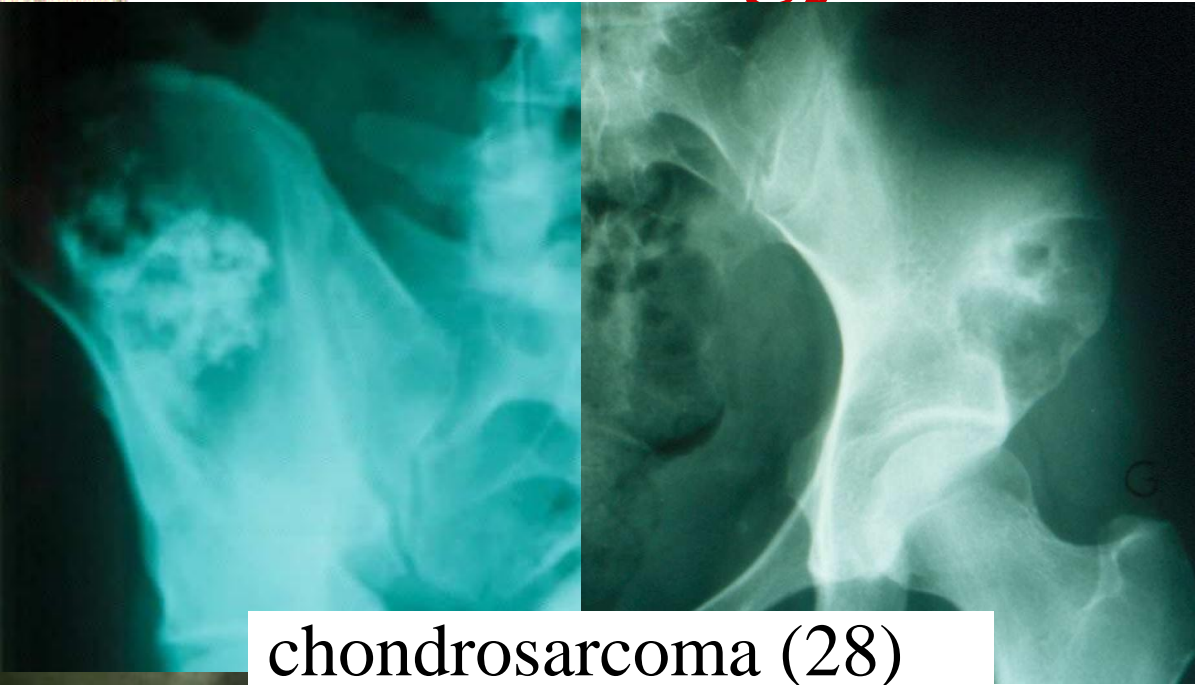
Initial staging

Preoperative screening of patients included standard X rays, CT and bone technetium scan in all cases and MRI in 15 cases

Diagnosis was made by open biopsy except for 4 cases of chondrosarcoma for these preoperative screening was sufficient (postoperative histological examination confirmed diagnosis)



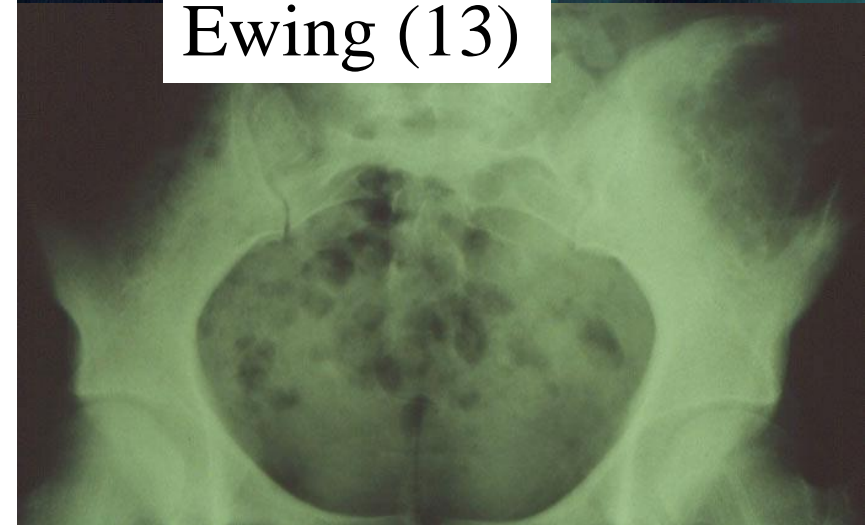
Histology was:



chondrosarcoma (28)



Ewing (13)



osteosarcoma (2),
MH (1)

LOCATION of TUMORS

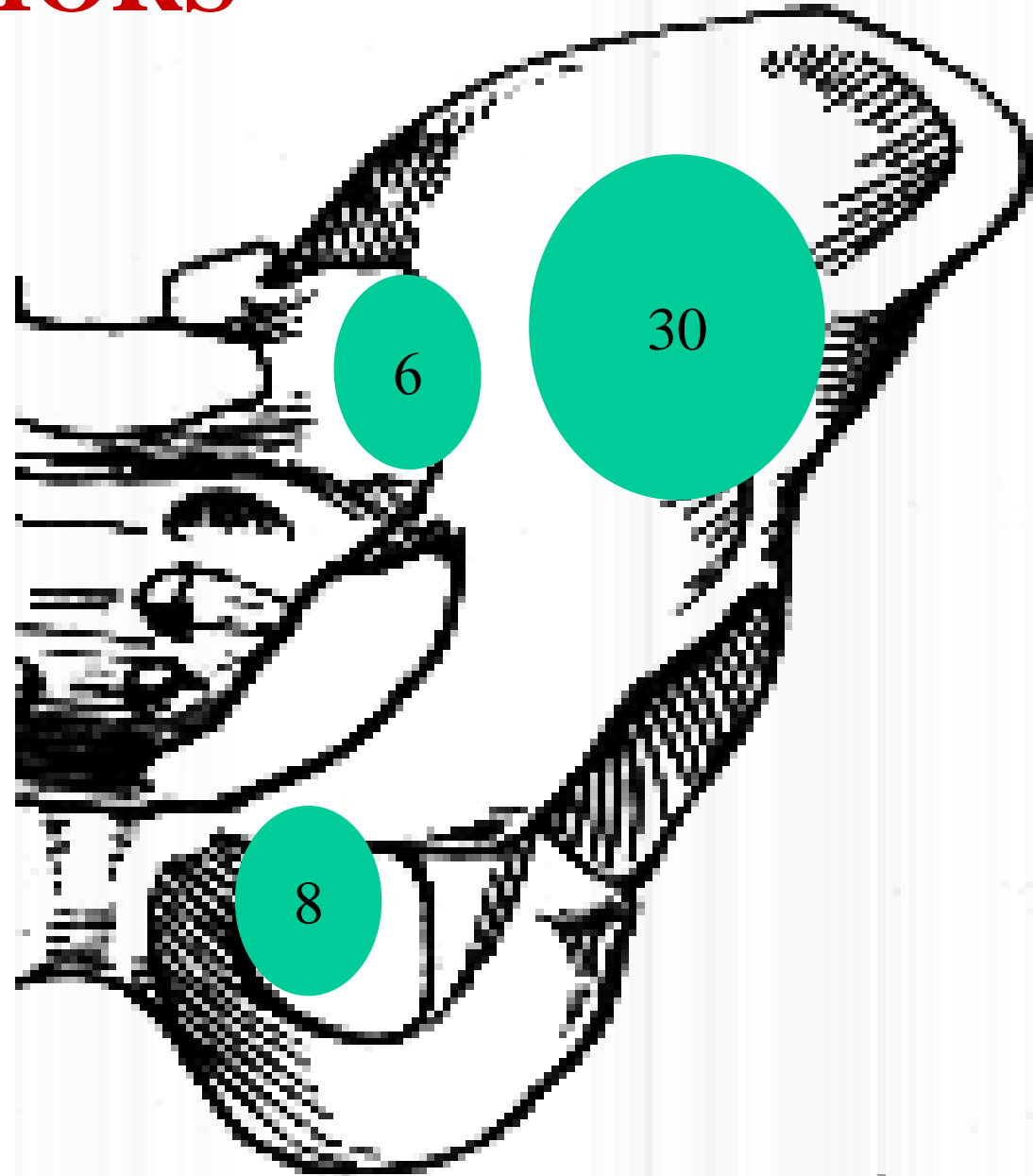
tumors involved :

zones I : 8

zone II :0

zones III :30

zones I+IV: 6

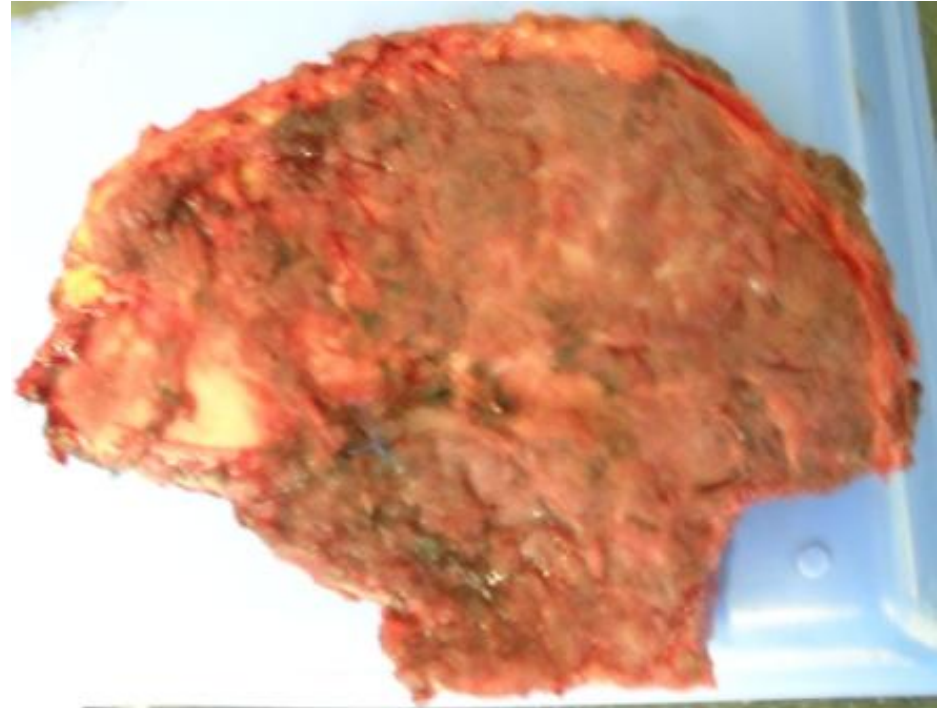


Resections

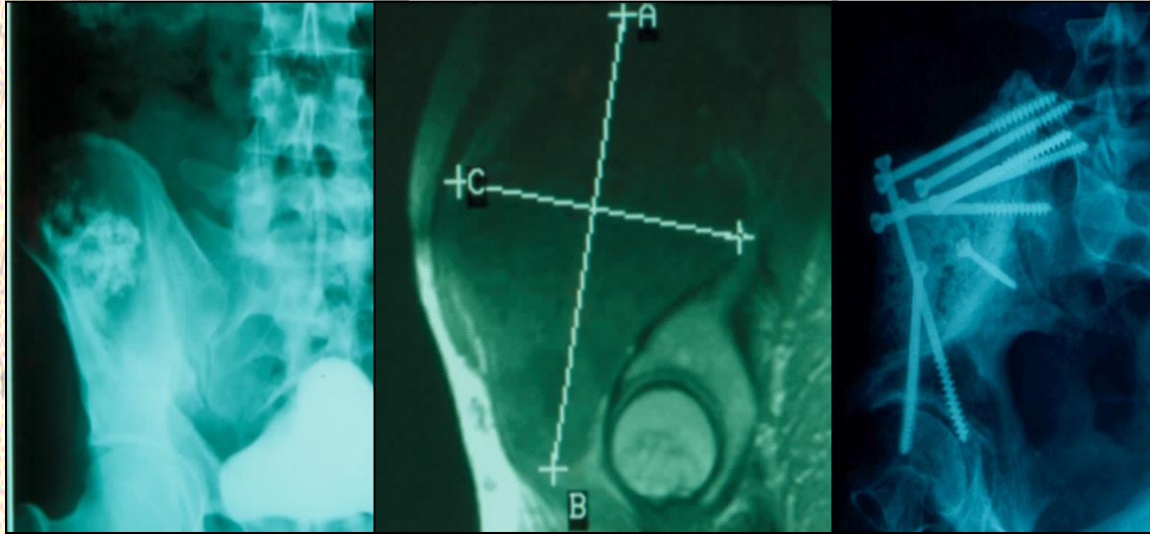
- **44 en bloc resections:**
 - All limb sparing
 - 39 for localized tumors
 - 5 for metastatic lesions

— MARGINS

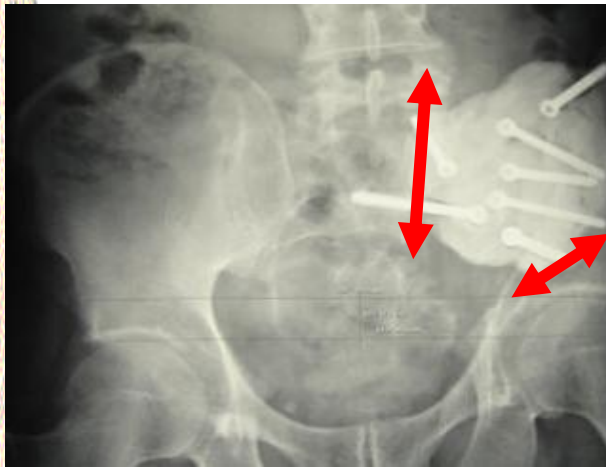
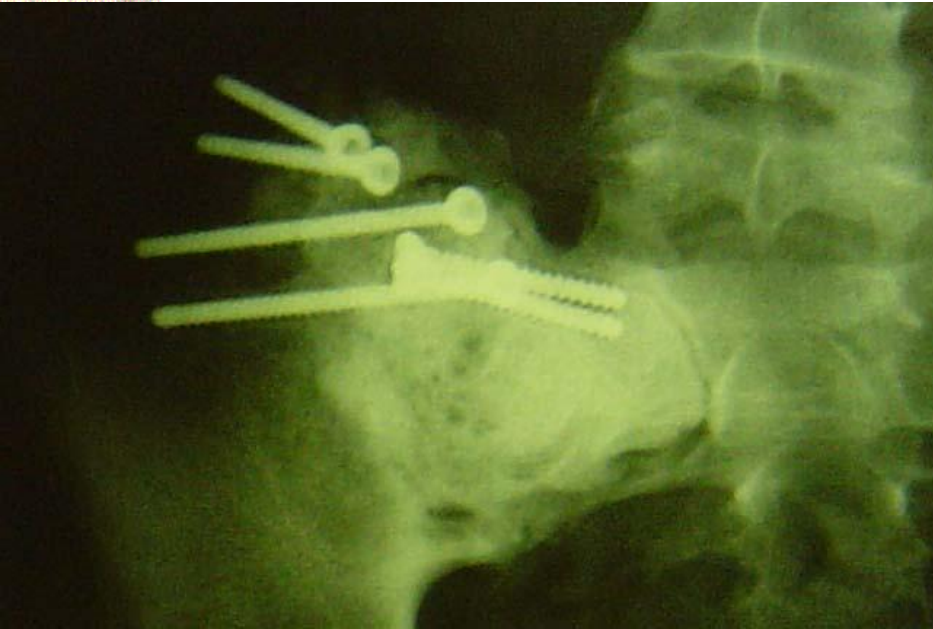
- 4 extratumoral
.....
- 40 contaminated



The resection respected the pelvic ring continuity in 23 cases

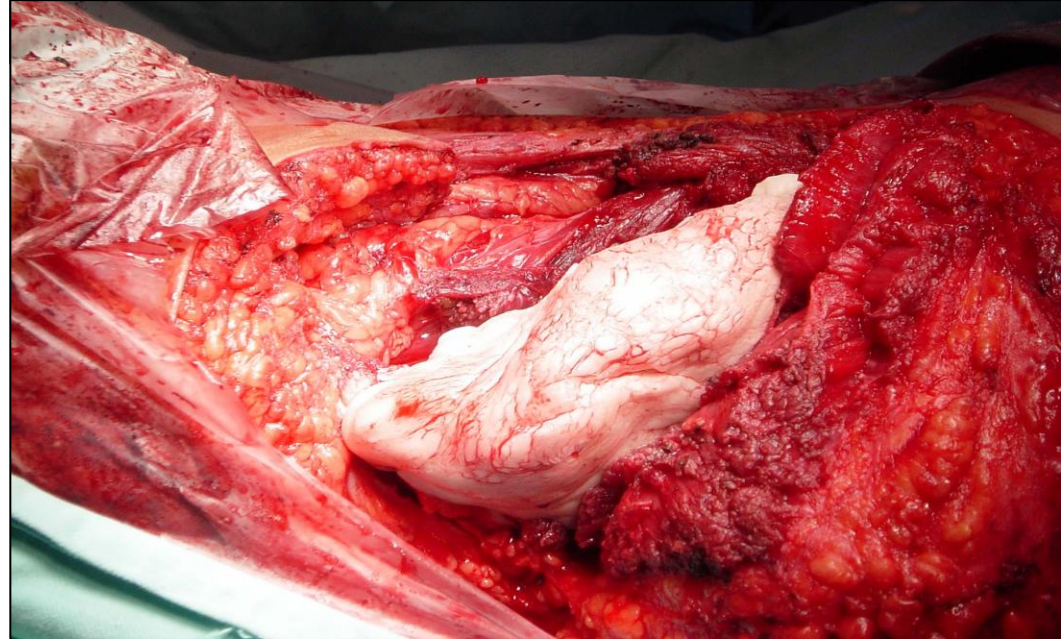
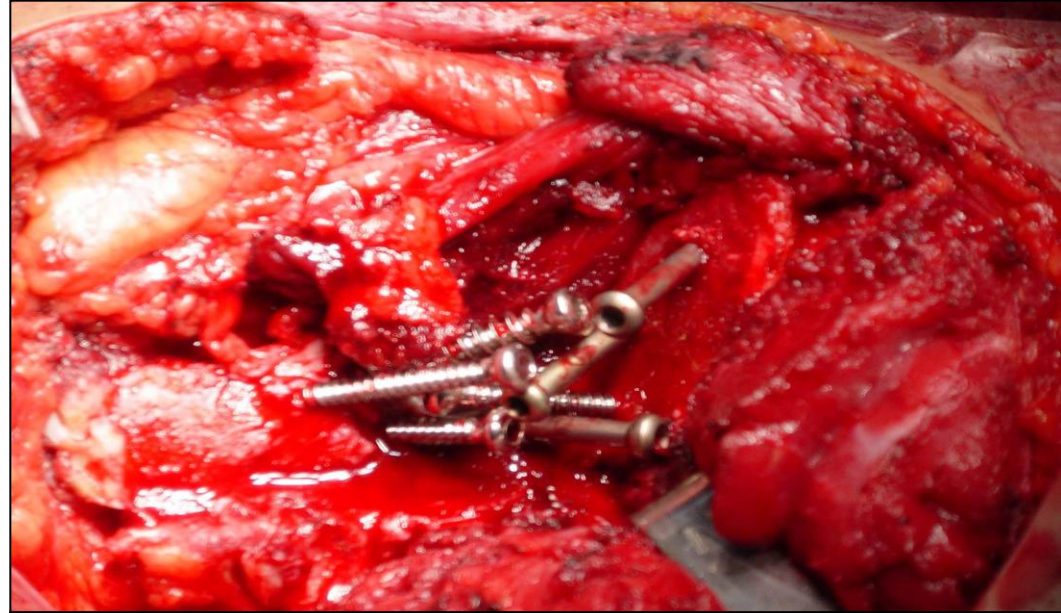


The resection interrupted the pelvic continuity in 21 cases

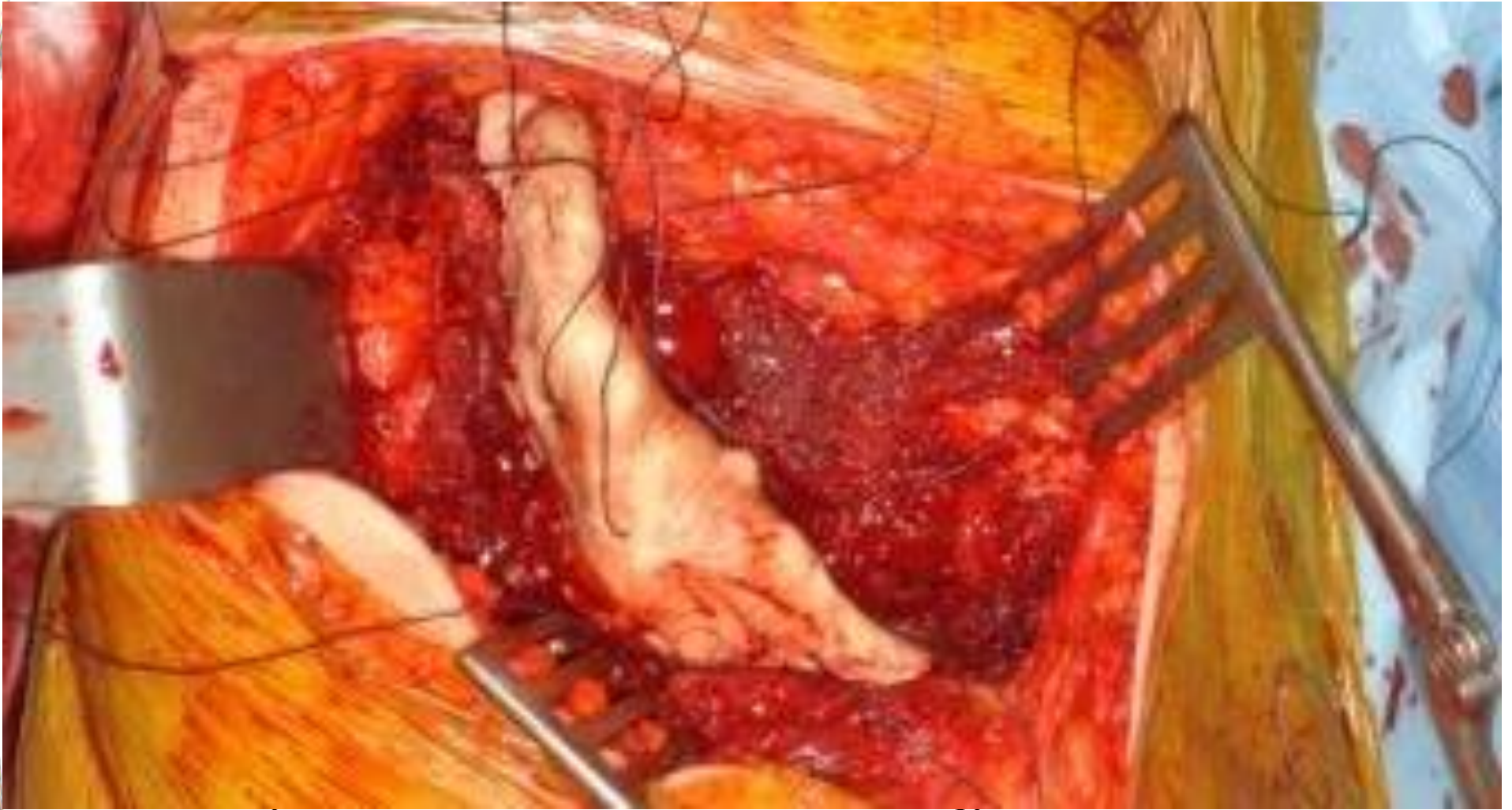


Reconstruction Technic

- After resection screws are inserted in both sides of remaining bones
- Then antibiotic loaded cement is moulded all around the screws

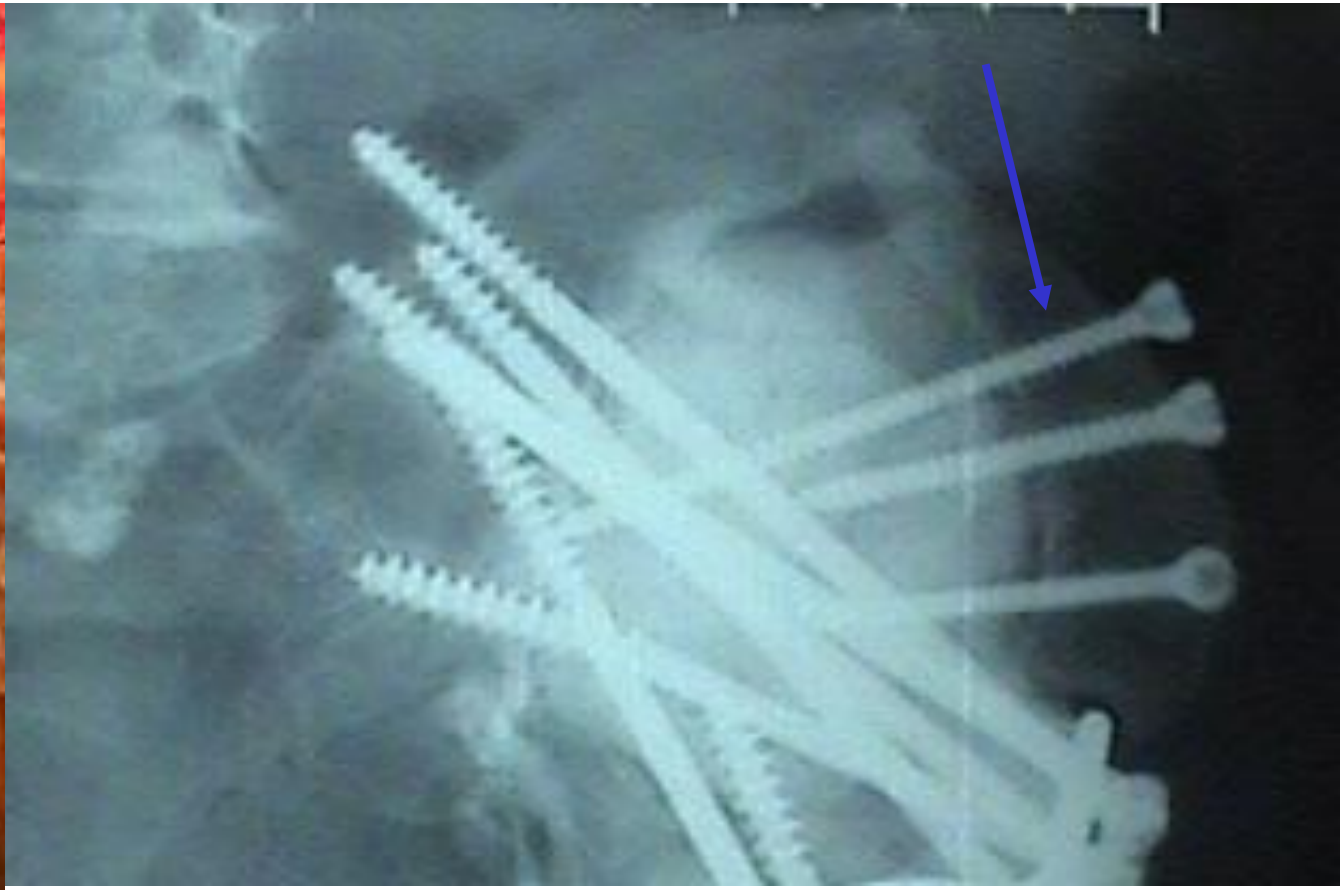


METHOD



- **Surrounding muscles are then fixed on the cement with wires**

METHOD



In some favorable cases (when iliac crest and gluteus muscles are free of tumour) the resection is performed through a pelvic approach and iliac remains with the gluteus insertions. The iliac crest can be fixed with screws into the cement

Oncologic results

- With a **median follow-up of 15 years** (minimal 2- maximal 22):
- **11 patients died from disease** after local recurrence (6) and / or metastases (7). One disease free survivor has been lost for follow after 3 years ,1 patient is alive with disease
- **The 31 others are disease free survivors**
- in these patients, *the prognosis was directly correlated with the histological grading :*
 - **low grade chondrosarcoma have a 85% DFS**

Oncologic results in high grade tumours

- prognosis correlated with efficacy of the chemotherapy protocol
- For primary metastatic patients when chemotherapy suboptimal or margins contaminated :
 - *prognosis dismal*
- With our most effective protocols and free margins, metastatic lesions did not affect the disease free survival of our patients.

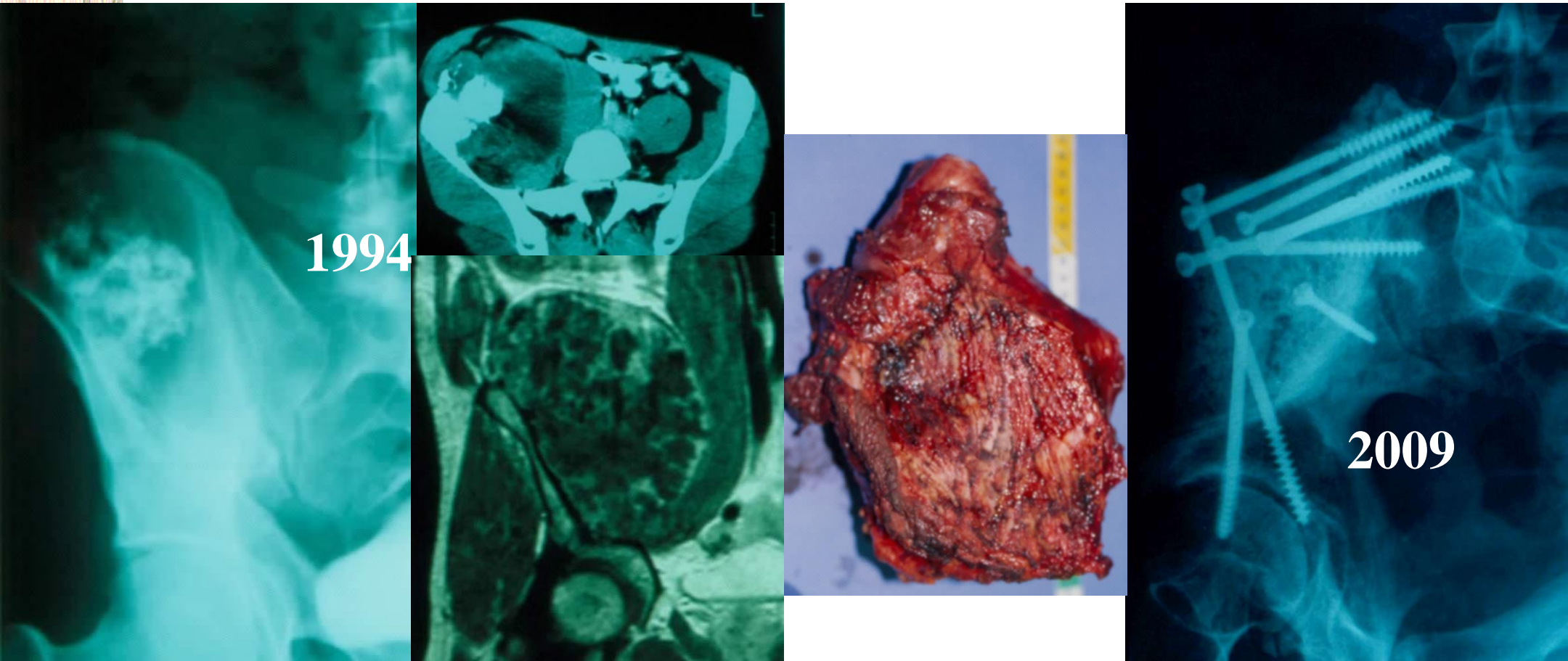


Ewing. Girl of 13 with bony met on the femoral neck. Chemotherapy and resection of primary and met. FU 13 years. DFS

Orthopaedic results

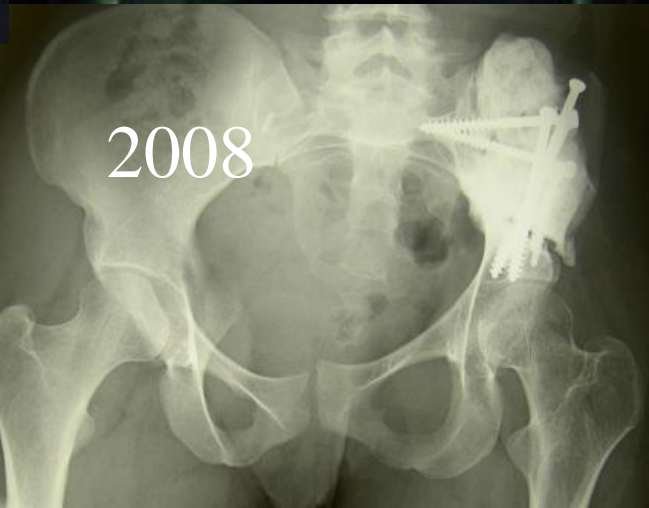
- Weight bearing was immediate in all cases
- We observed 3 deep infections
 - 2 compelled to make resection of the cement)
 - and 2 late mobilisations of cement.
- In all other patients, the reconstructive procedure gave a good and stable functional result even in very long follow up

Long term follow up



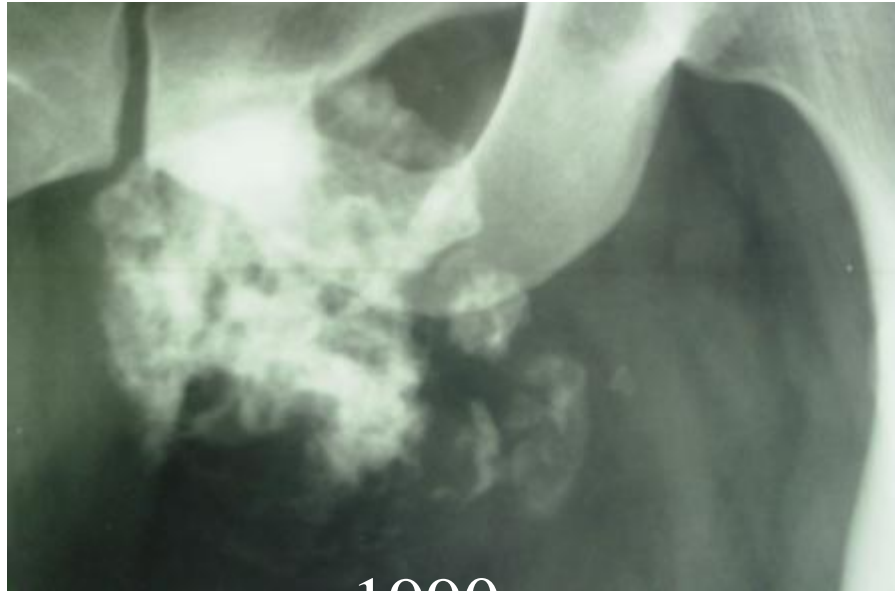
- Huge chondrosarcoma grade 2. 15 y FU. CDSF. Excellent result. No loosening

Long term follow up



Ewing of zone 3. 14 years FU. Excellent function. No pain. Professional rider.

Long term follow up



1990



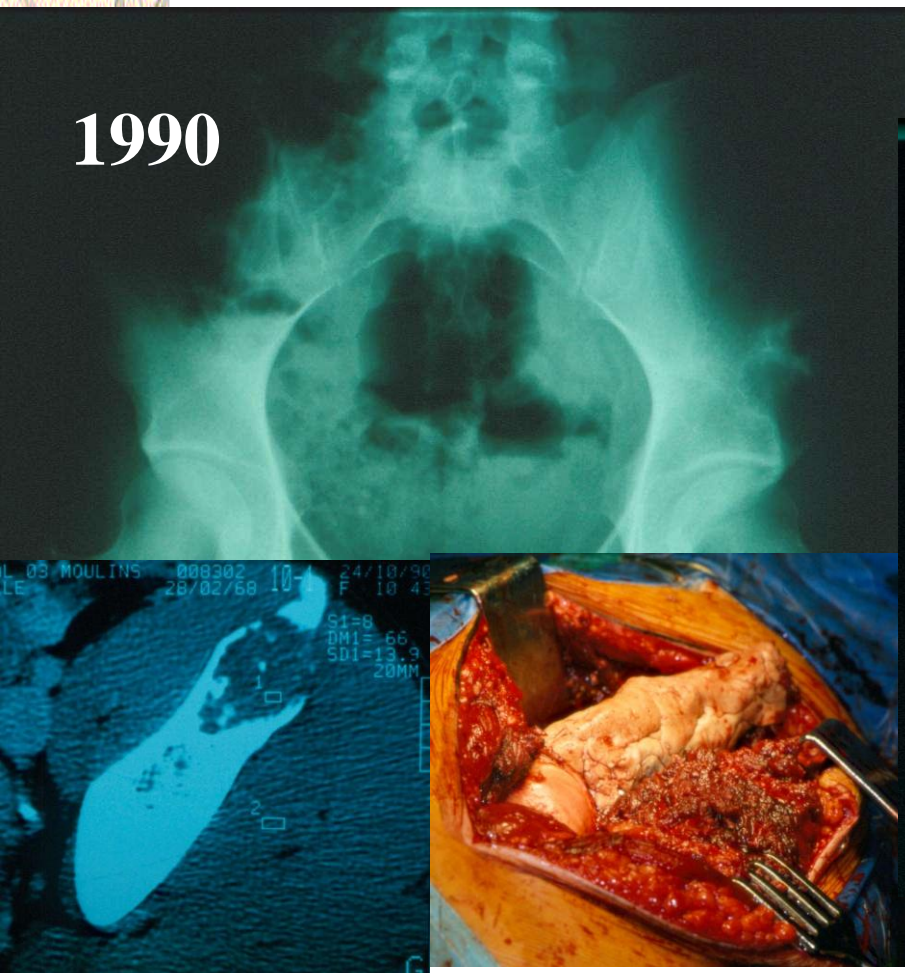
- Chondrosarcoma grade 1. 19 y FU. CDSF.
- Excellent result. No loosening



2009

Long term stability

1990



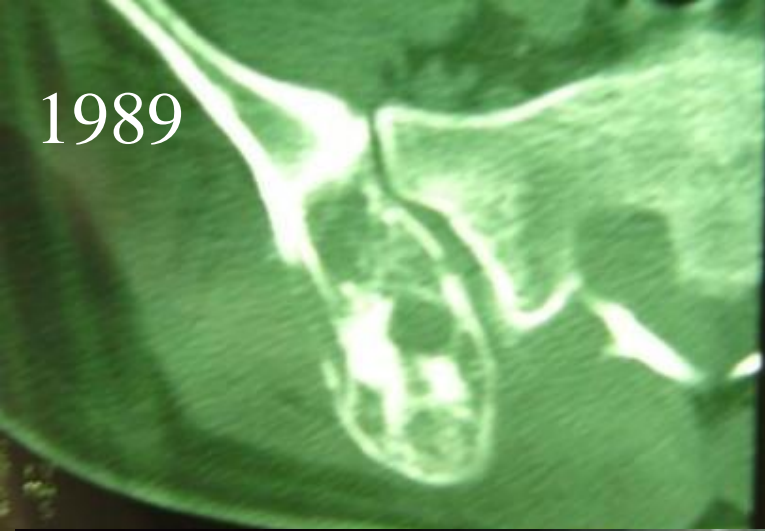
2009



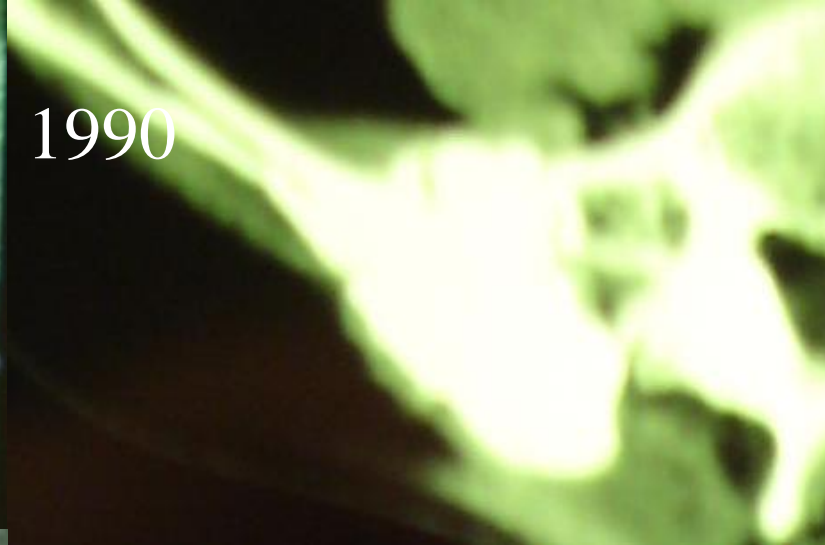
- Chondrosarcoma. 19 y FU. Excellent result.

Long term stability

1989



1990



1990



2009



Ewing

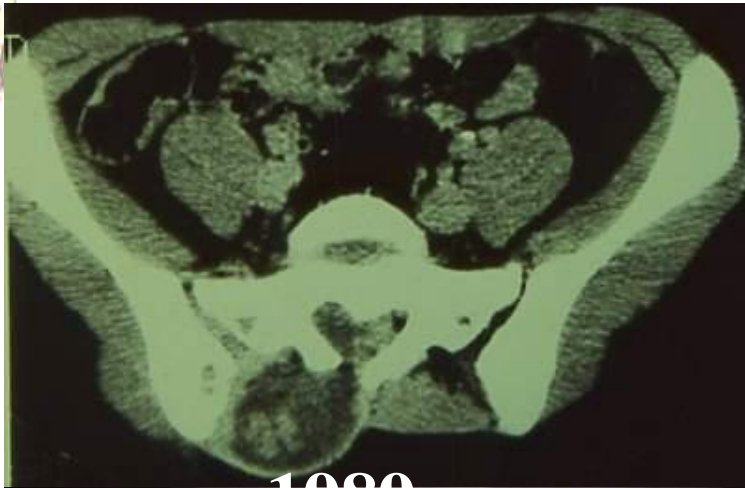
20 years FU

No pain

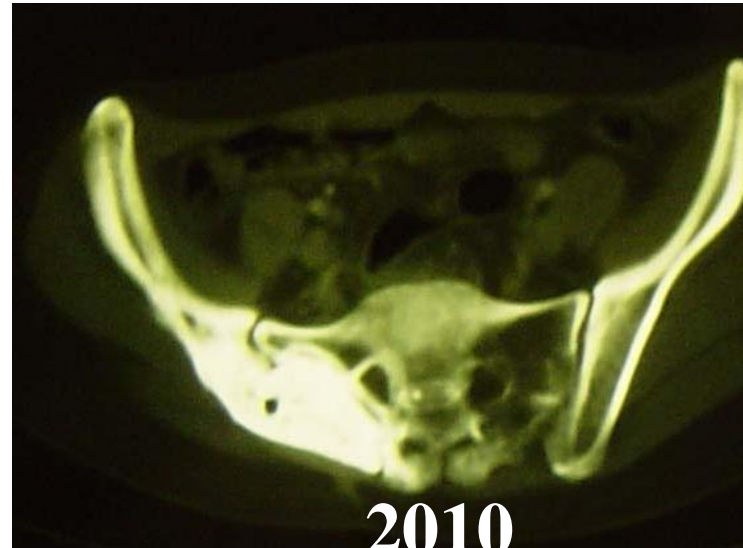
No loosening

Excellent
function

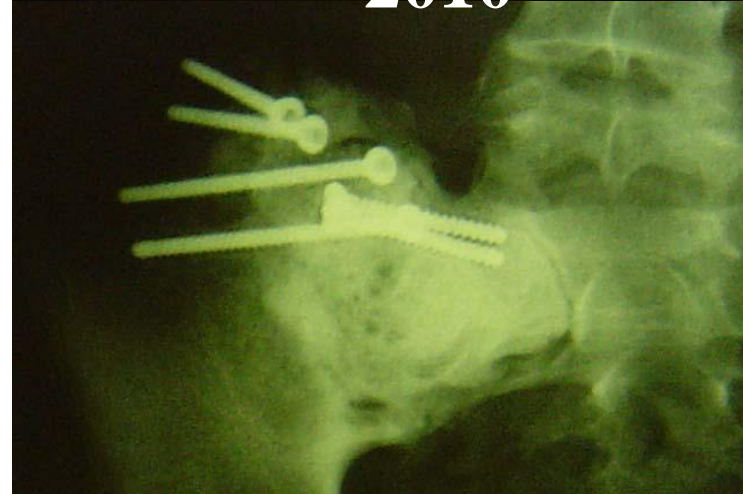
Long term stability



1989



2010



Ewing. 21 years FU. No loosening. Normal function

Conclusion

- **Acrylic reconstruction is an easy and reliable reconstructive procedure after en bloc resection of iliac bone for malignant tumours in zone 1, 2 or 4.**
- **It is more reliable than bone graft when chemotherapy or radiotherapy are necessary.**