The pattern of impingement in hips with valgus slip deformity (Valgus SCFE)

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My colleagues

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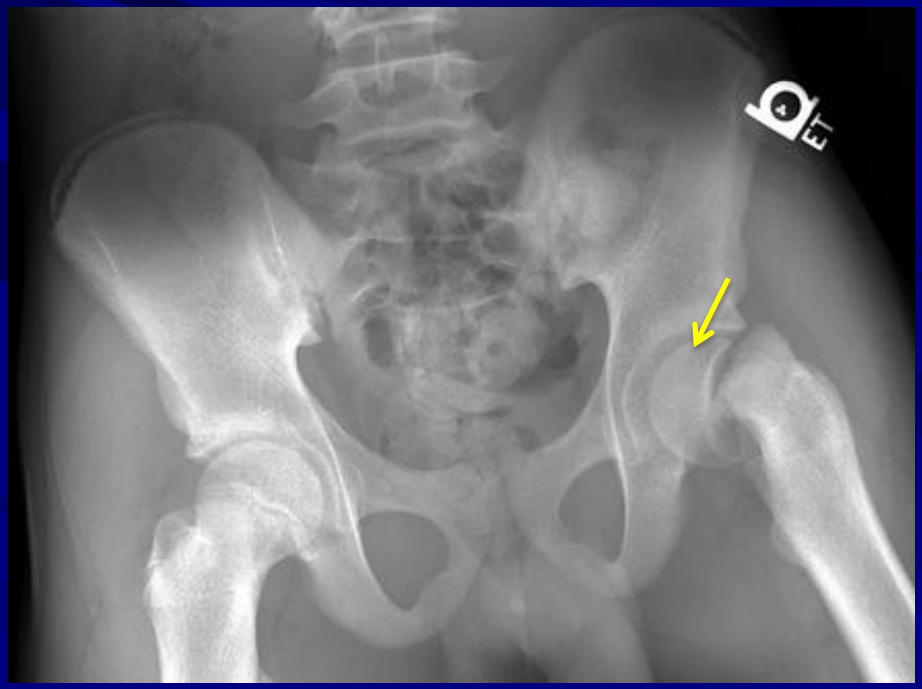
- Rego
- Leunig
- Ganz

Varus and valgus slip

Femoral epiphysis slips medially and posteriorly



Femoral epiphysis slips laterally and posterolaterally

Reported incidence 4-9-%

Clinical presentation

- Acute onset (not common)
- Chronic with sign and symptom of impingement (common)

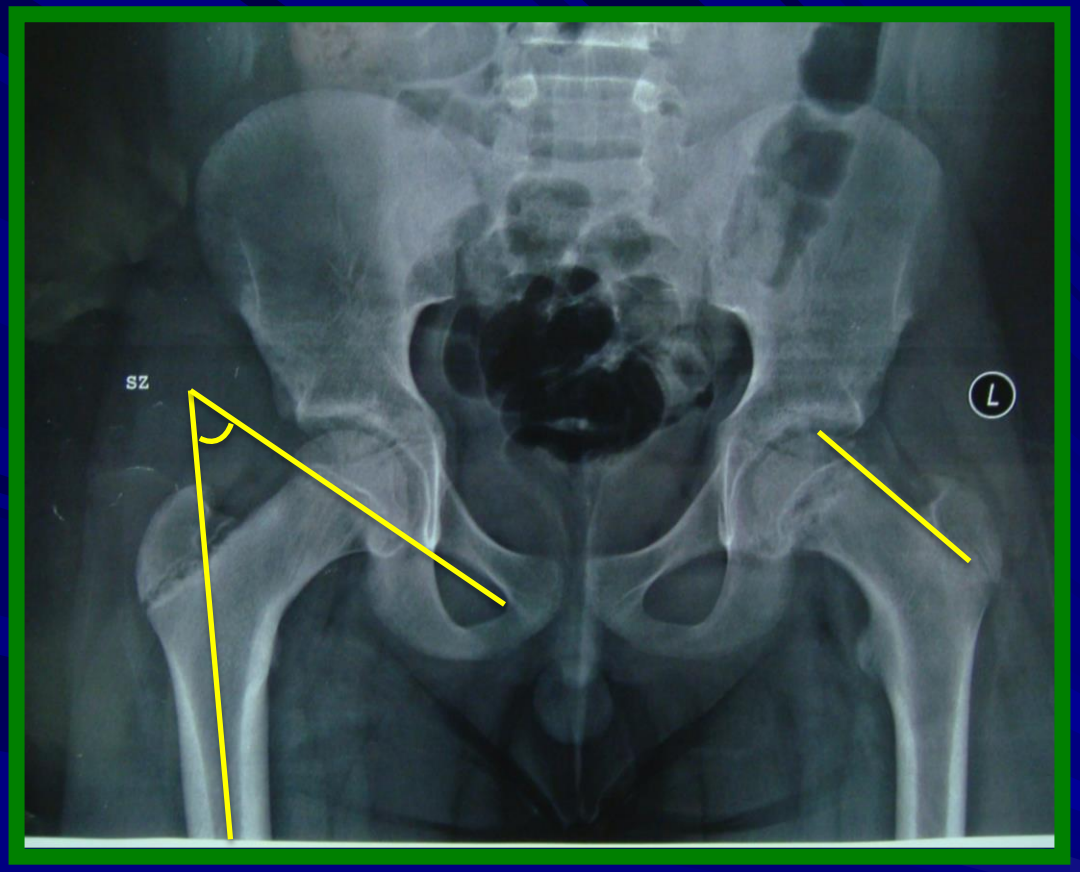
Pathomorphologies associated with valgus SCFE

Coxa valga

Dysplasia

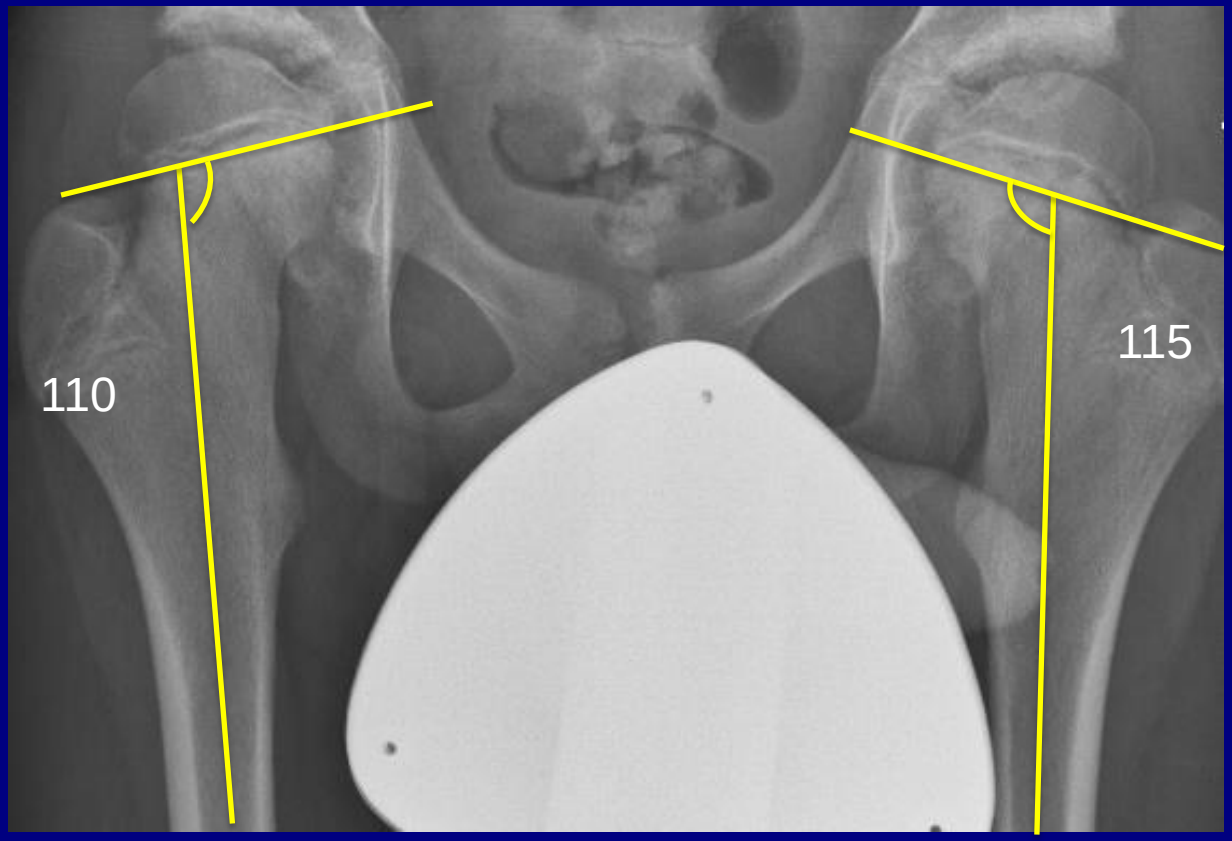
Etiogy of Valgus slip

- Poorly defined
- Its association with Endocrine, metabolic, and musculoskeletal syndromes have been reported.

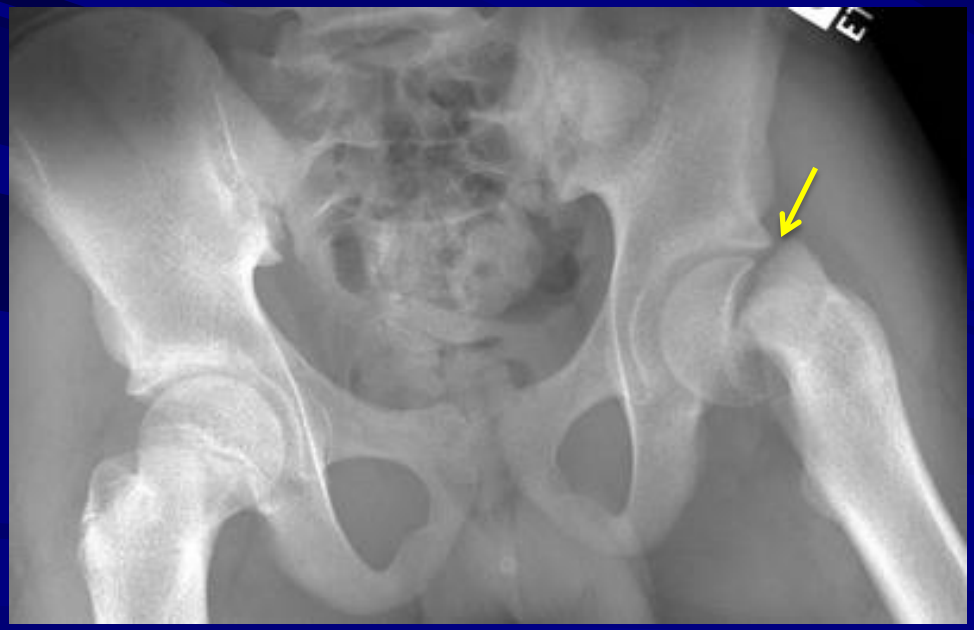


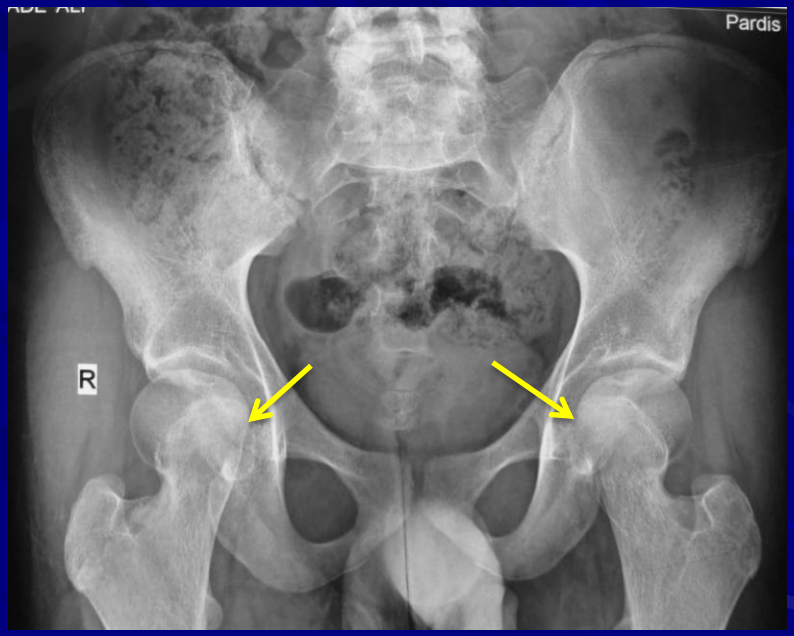
The orientation of the proximal femoral epiphysis is defined by epiphyseal shaft angle (ESA) also called head shaft angle (HSA)

In valgus slip head-shaft angle (ESA, HSA) is 90˚ or higher

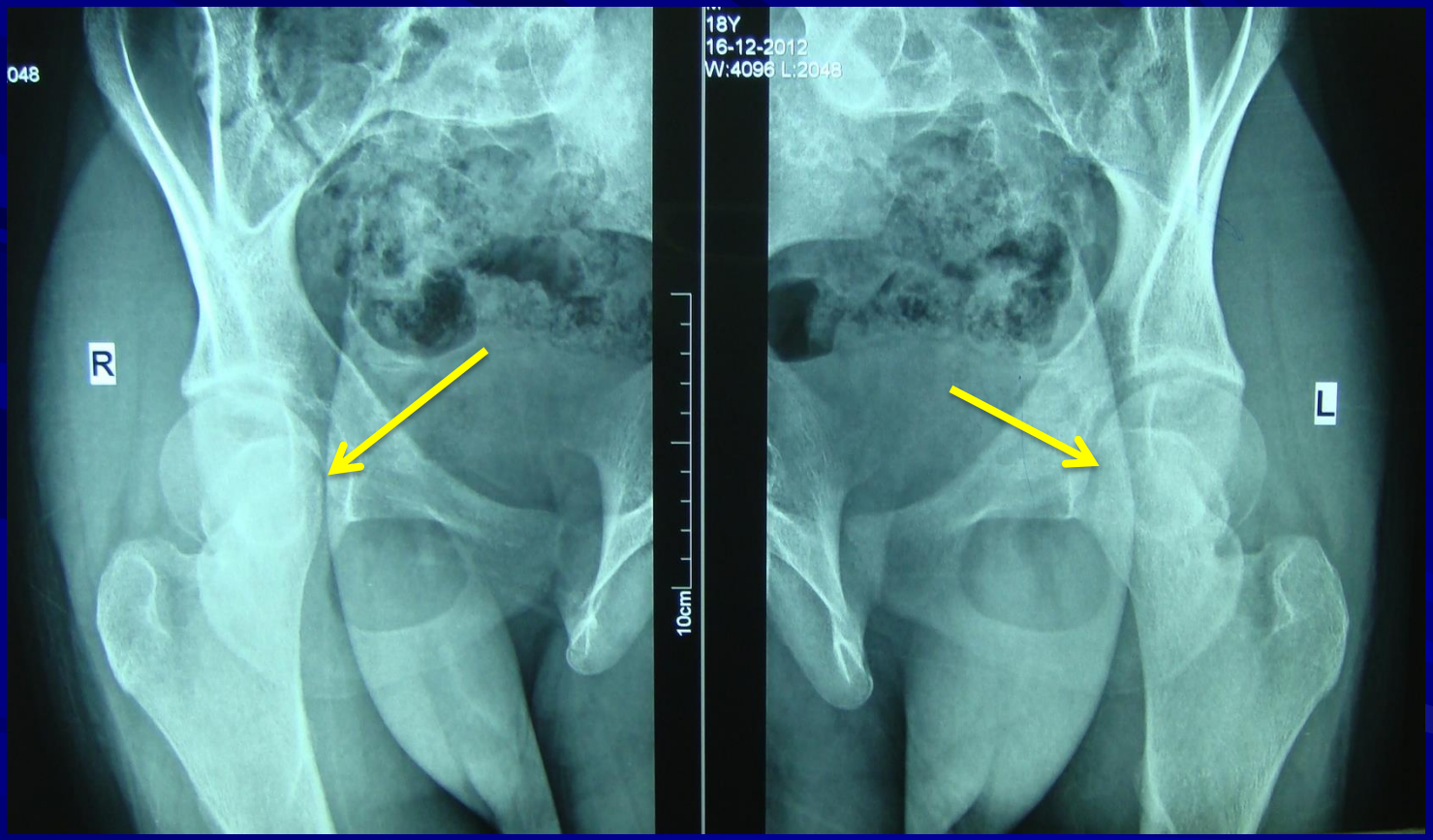


Pattern of impingement in valgus slip is different from that of classic slip



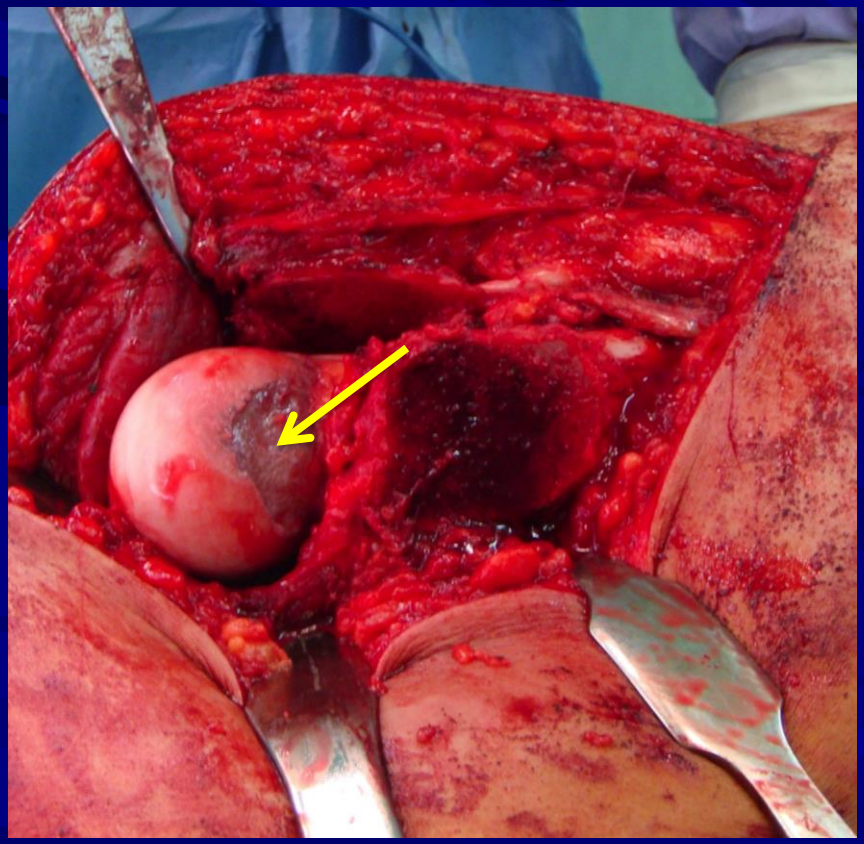


Anteroinferior impingement

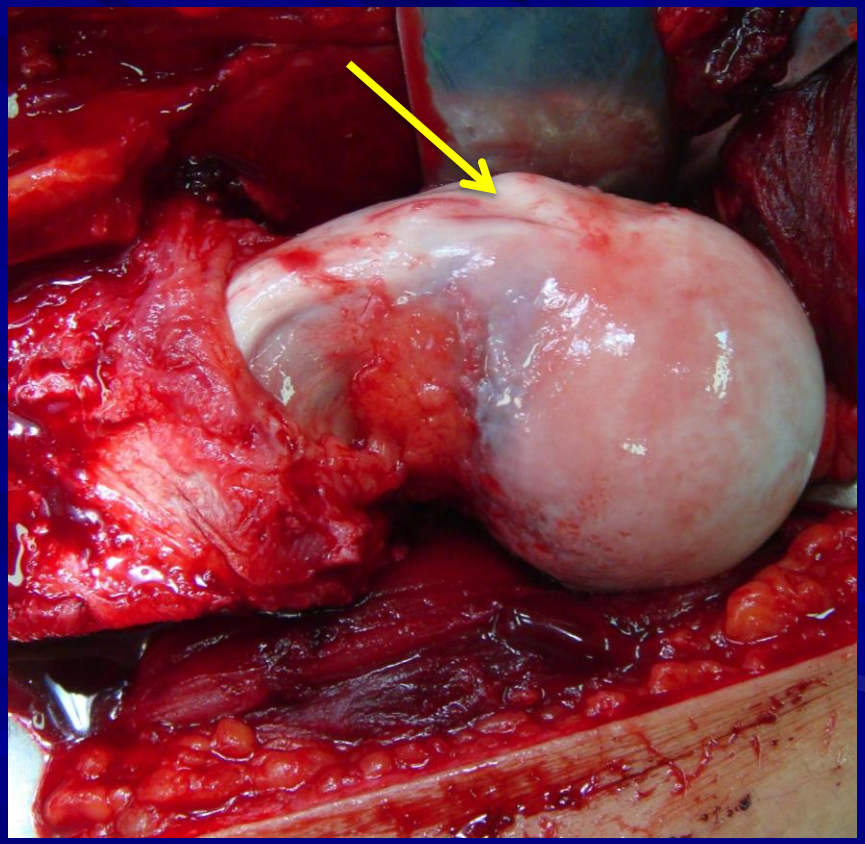


Pattern of impingement in valgus SCFE

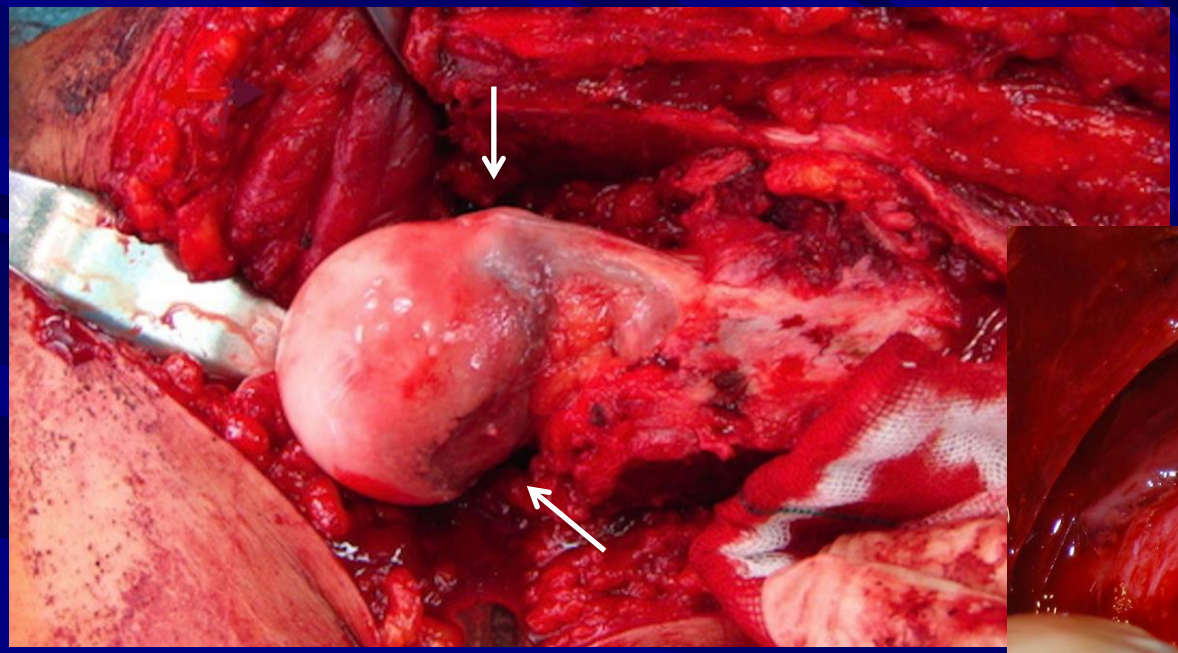
Impaction impingement

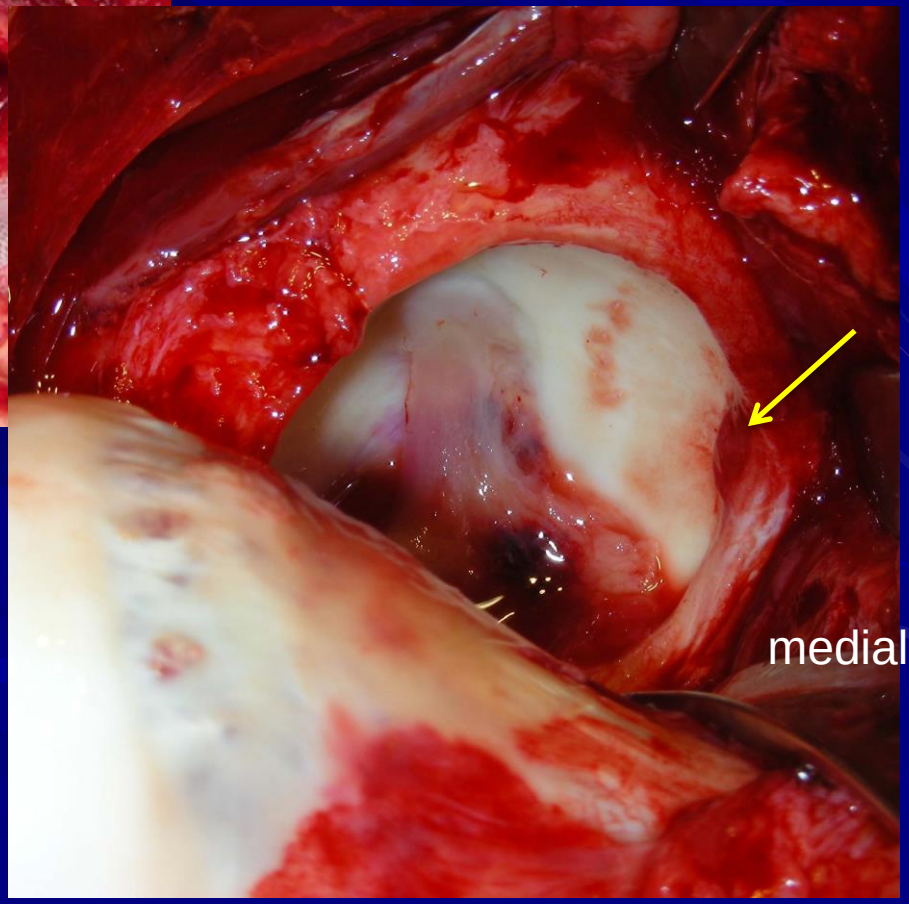


Inclusion impingement



Infero-medial impingement (inclusion)
Postero-lateral impingement (impaction)
Both encourage joint subluxation





Tibor LM, Ganz R, Leunig M
Anteroinferior acetabular rim damage due to femoroacetabular impingement.
Clin Orthop Relat Res. 2013 Dec.

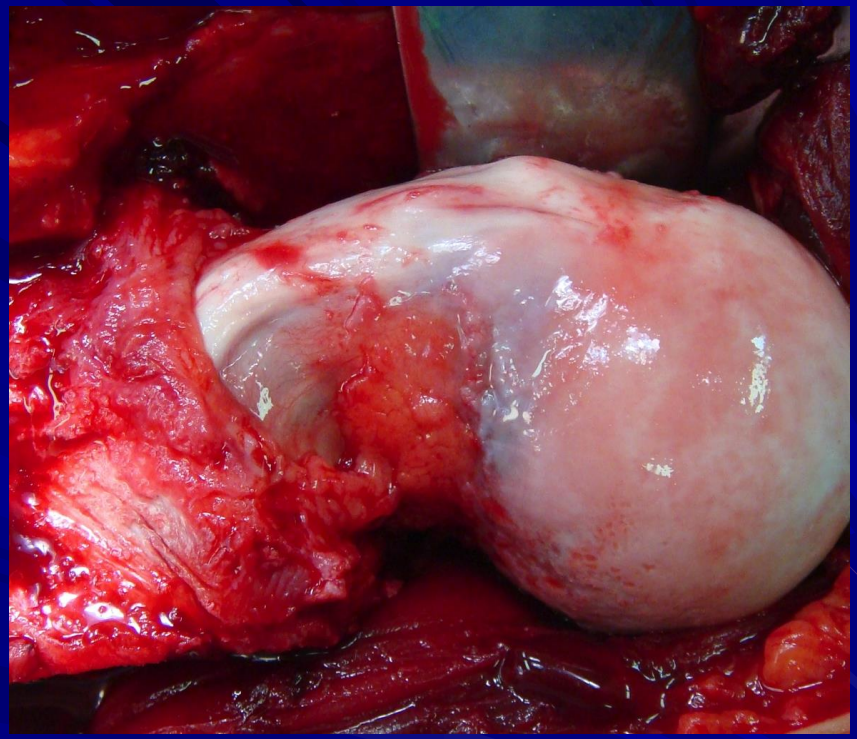
Treatment

Classic treatment was in-situ pinning for slip and acceptance of deformity.

In situ pinning the classic treatment for symptomatic patients

Epiphyseal alignments cannot be restored by in situ pinning

valgus SCFE

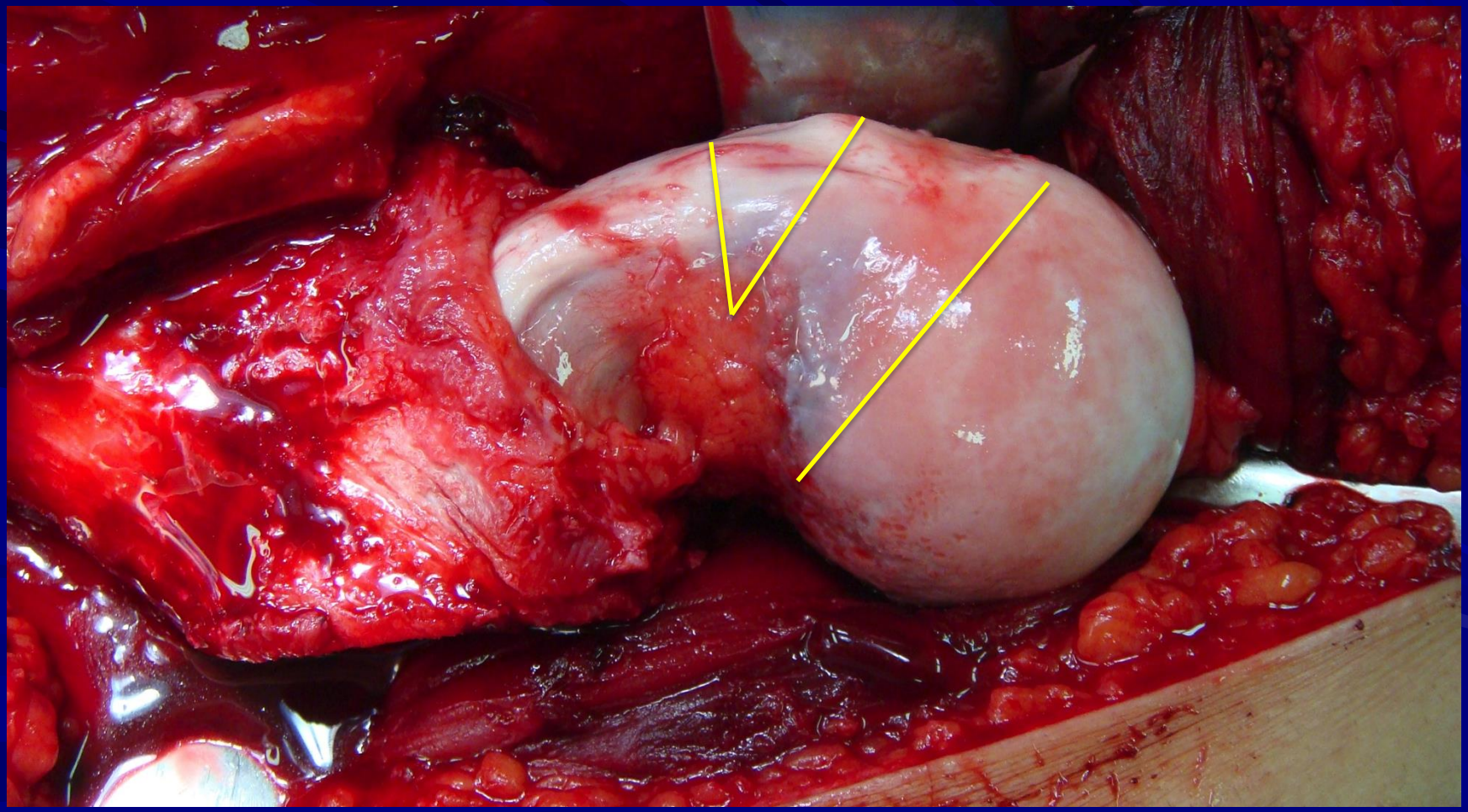


1- In-situ pinning technically difficult
2- deformity can not be corrected by insitu pinning

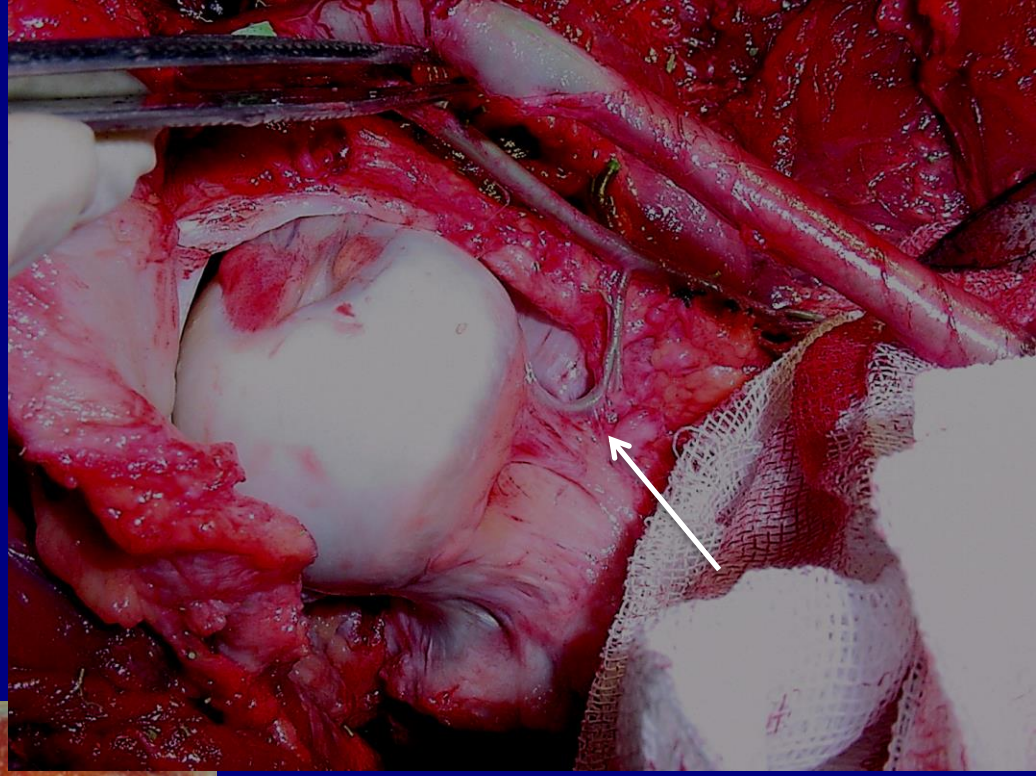
Realignment techniques:

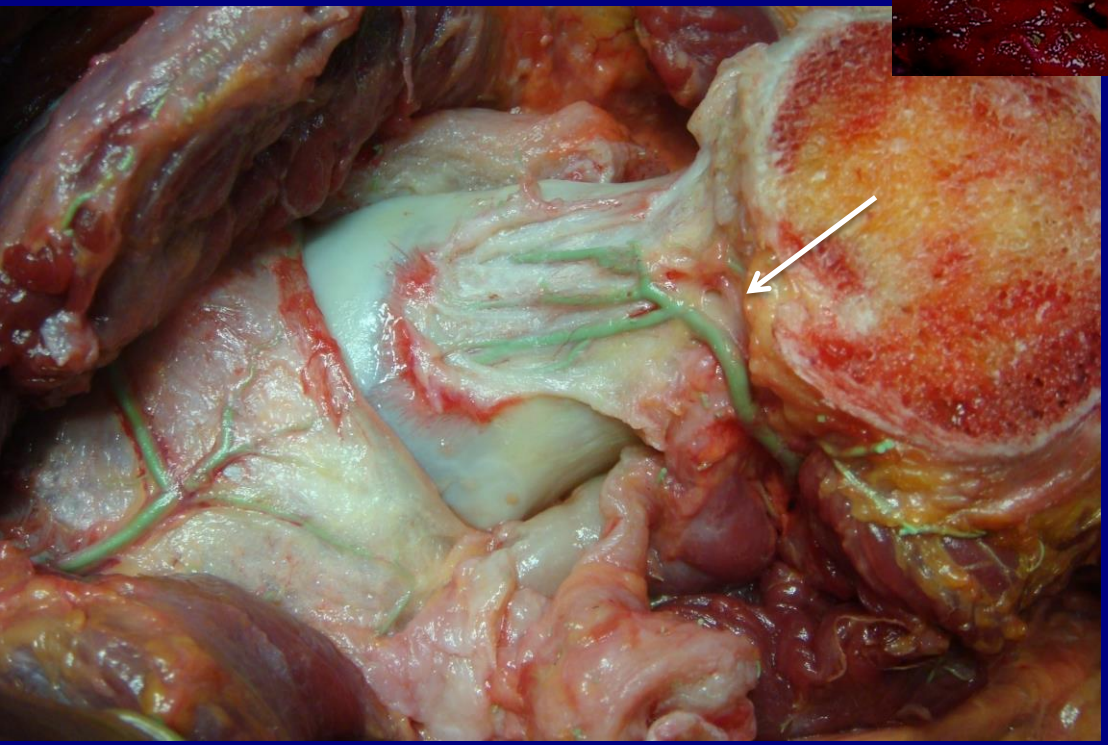
1-Capital realignment

2-Femoral neck osteotomy

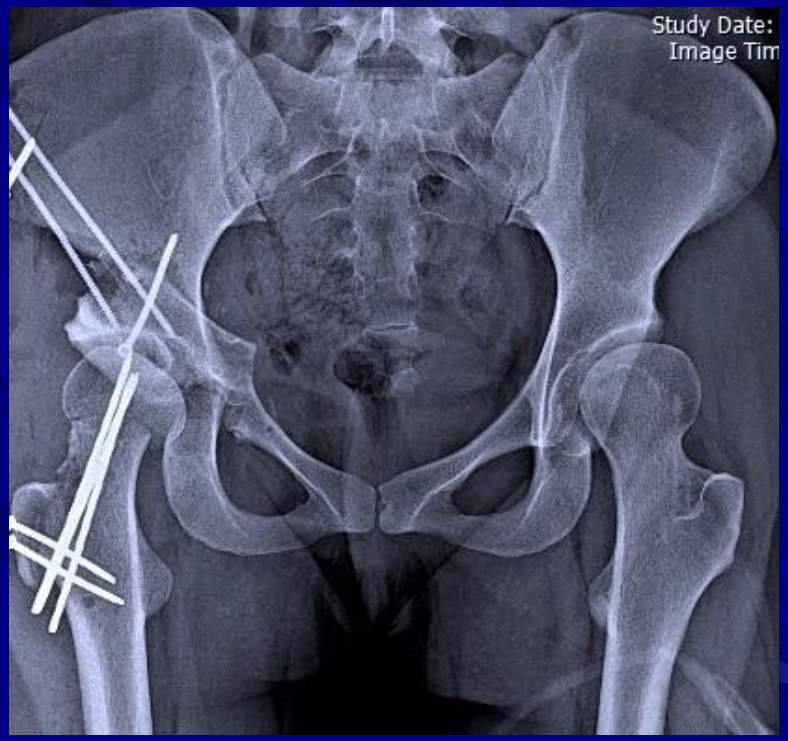


Medial retinacular flap with medial branch of MFCA





Lateral retinacular flap with capillaries from deep branch of MFCA and anastomoses from IGA

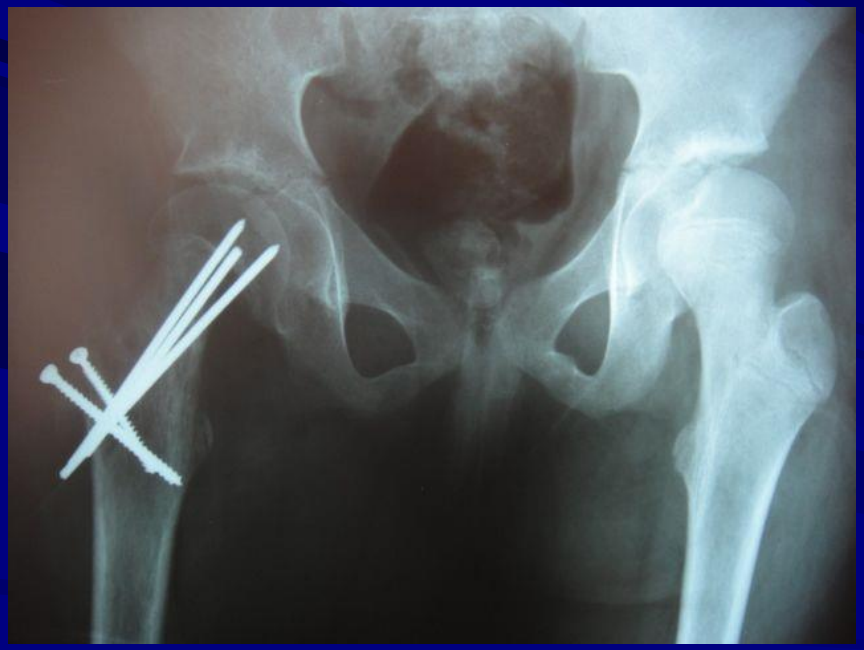

Study Date:
Image Tim

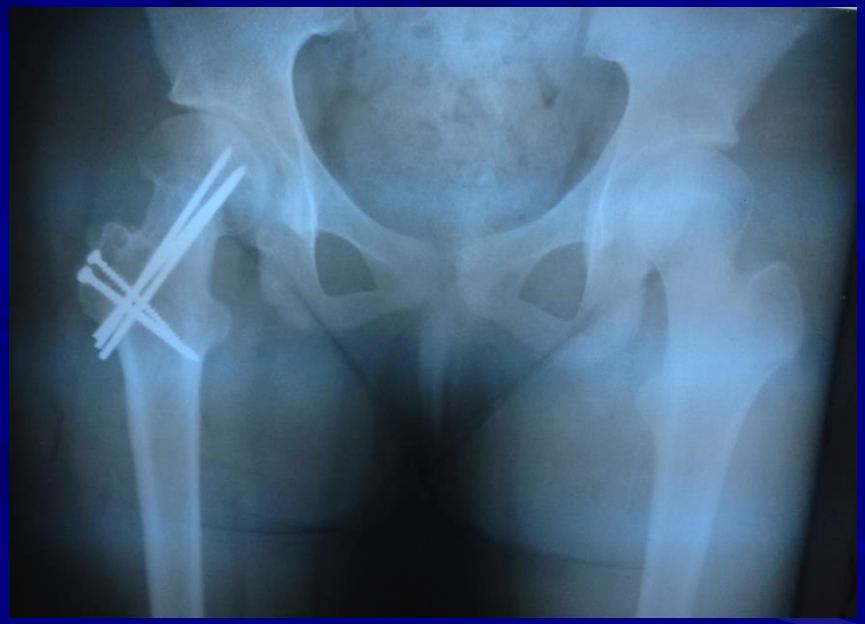
15y old male
painful ADL

2 y result
HSA from 110° to 55°

7y result with no pain,
normal gait and full ROM.
Metal removal refused

A 10 year old girl
bilateral coxa valga
SCFE in Rt. side





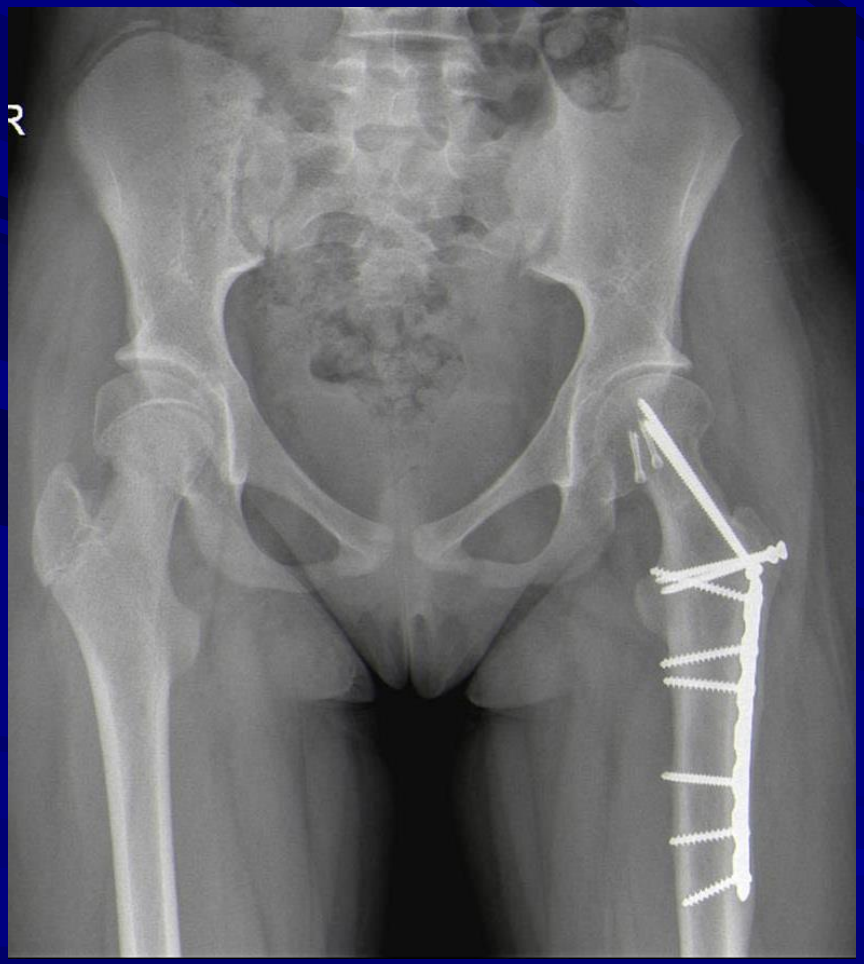
Postop.

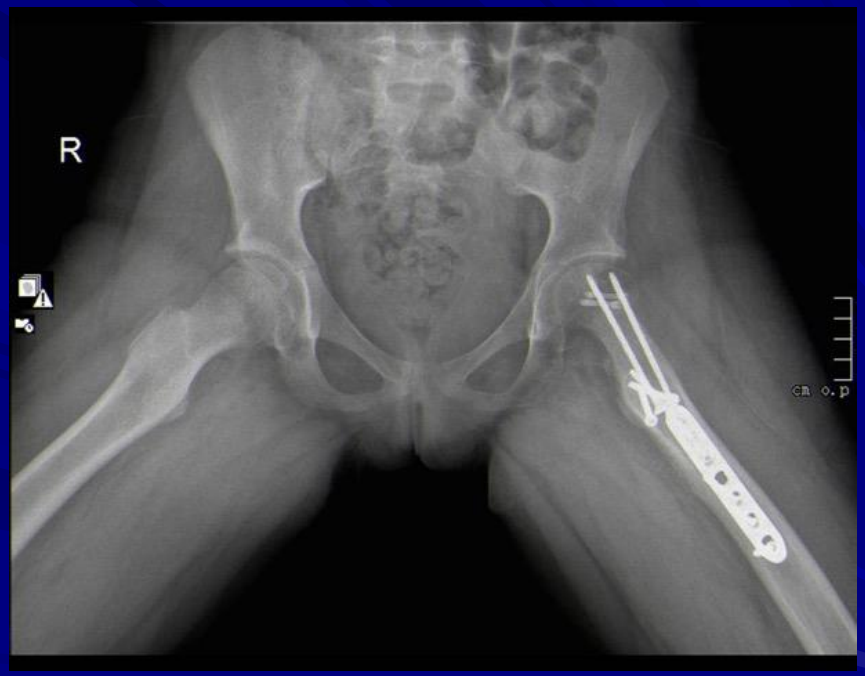
Follow-up 3 years

A 12 year old female patient

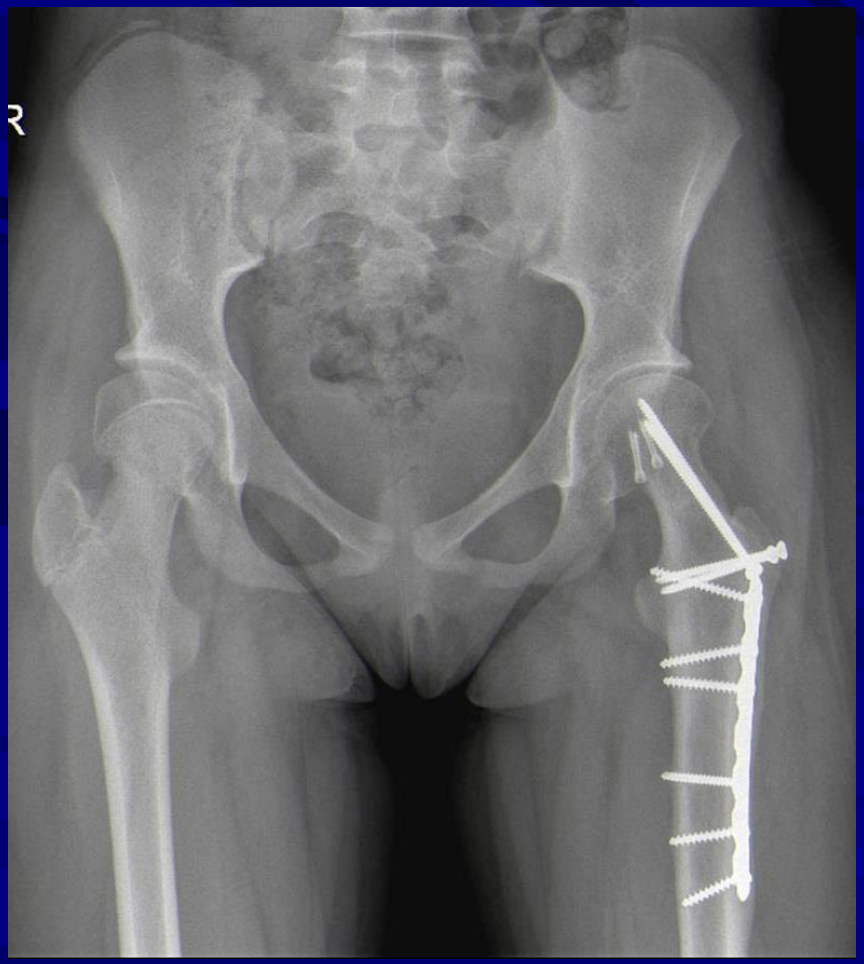
Bilateral coxa valga with classic slip in Lt. side

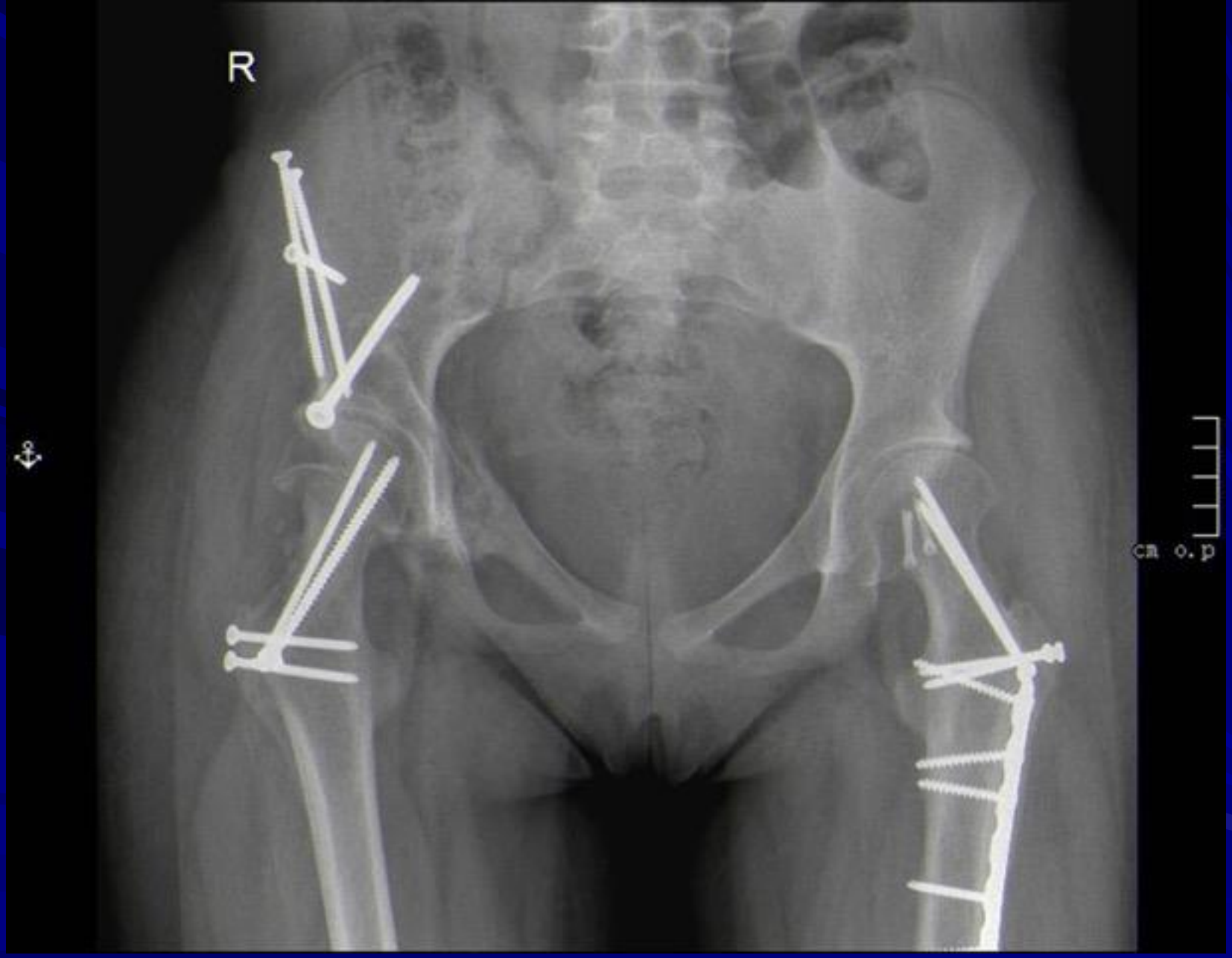
Follow-up



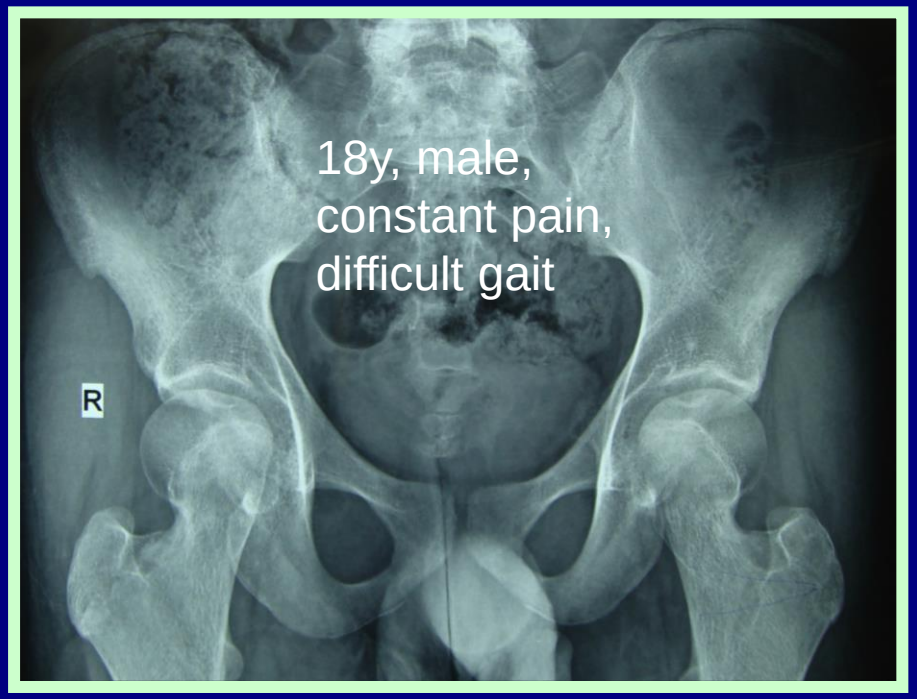


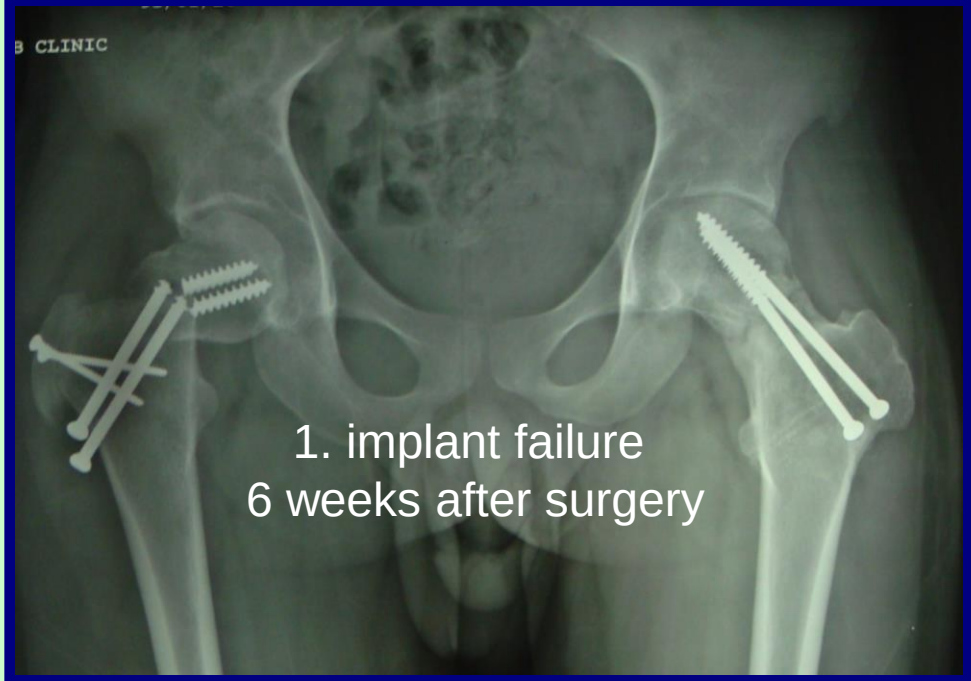
Reverse slip in Rt. Side after a year

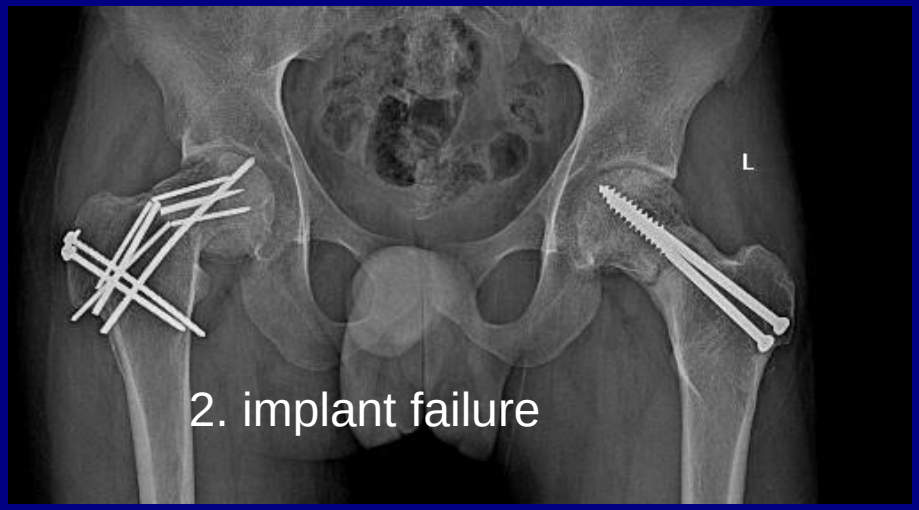


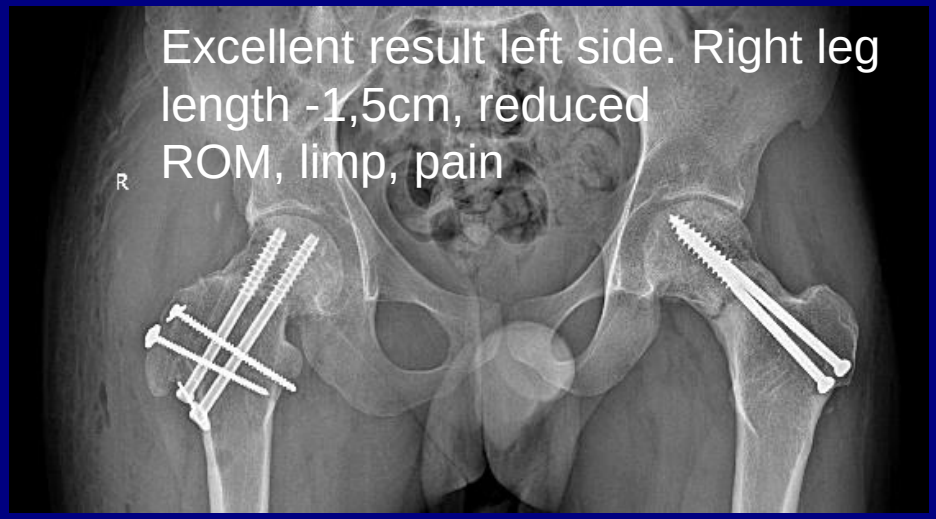

R
cm o.p

Last follow-up


18y, male,
constant pain,
difficult gait
R


CLINIC
1. implant failure
6 weeks after surgery


L
2. implant failure


Excellent result left side. Right leg
length -1,5cm, reduced
ROM, limp, pain
R

Results

8 hips (6 patients)
Age 10-18y (15,5)
3 male, 3 female
Correction through the physis 5
Correction through the neck 3
Follow-up 1-8y (3,7)

Excellent 6
Good 1
poor 1

2 metal failures in 1 hip
No necrosis

Summary

Valgus SCFE is rare. The posterolateral slip direction is based on coxa valga and an ESA (HSA) of 90° or higher

It is comlicated by antero-medial and postero-lateral impingement with the potential of subluxing the joint

Only direct correction through the physis or the femoral neck can successfully address the complex pathomorphology

Conclusion

- The pattern and site of impingement in valgus SCFE is different from that of classic varus slip.
- Direct or indirect realignment of epiphysis is necessary to address the impingement.

Thank you