

# Ilizarov Hip Reconstruction

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Percutaneous Rx of  
Dysplastic & Deformed Hips!

*For many young people with Hip Joint problems with limb shortening, this is the ideal procedure.*

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# Ilizarov Hip Reconstruction

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- Percutaneous Rx of Hip Disorders
- Double Level Femoral correction

*It is a method of external fixation with two osteotomies in the femur to help stabilize the hip as well as lengthen the thigh bone.*

# 5 D's

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- Destroyed
- Dislocated
- Dysplastic
- Dysvascular
- Doomed

*These are the commonest ways to remember who can benefit most from this procedure.*

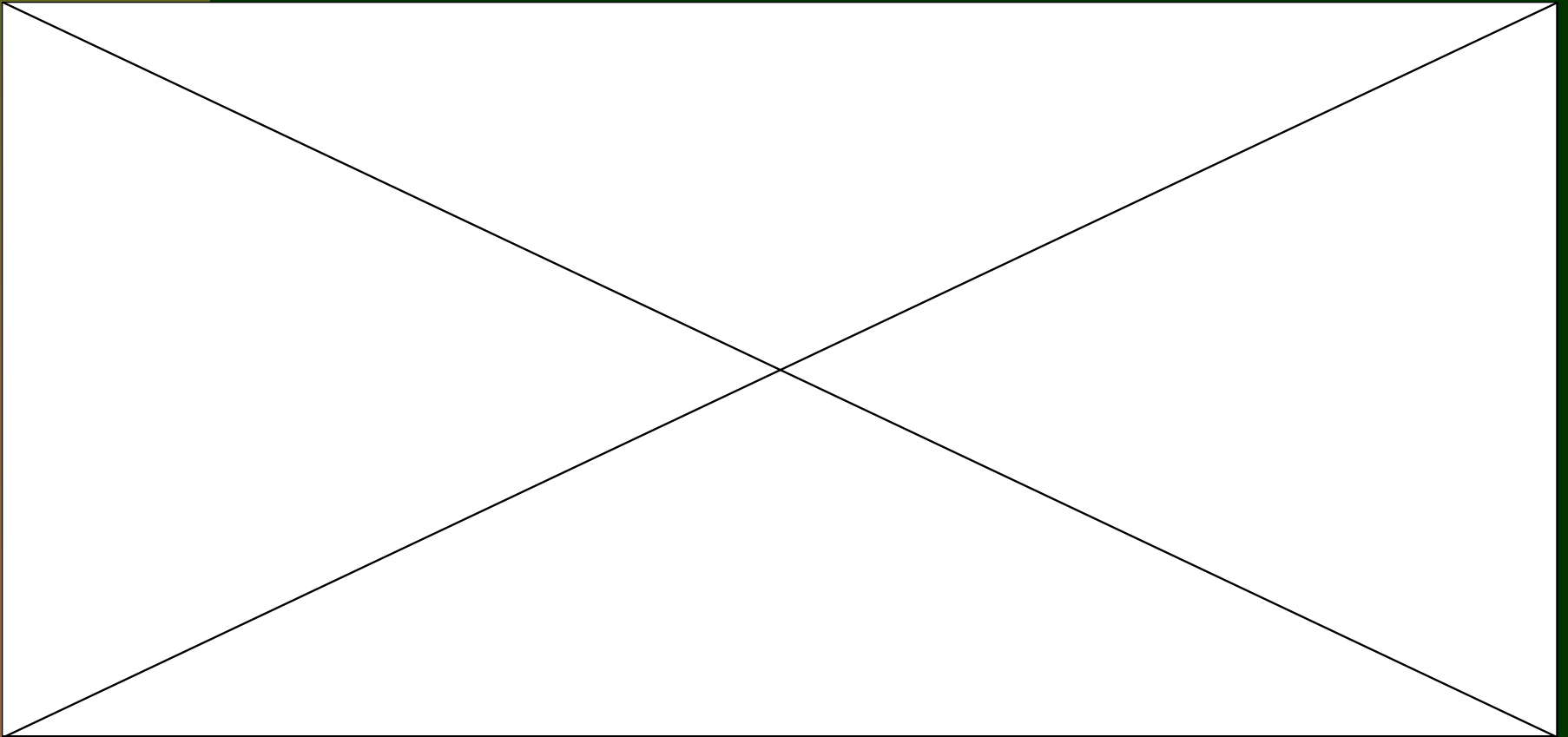
# Destroyed

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The Hip Joint is frequently destroyed due to Infection –either septic arthritis or Tubercular arthritis.

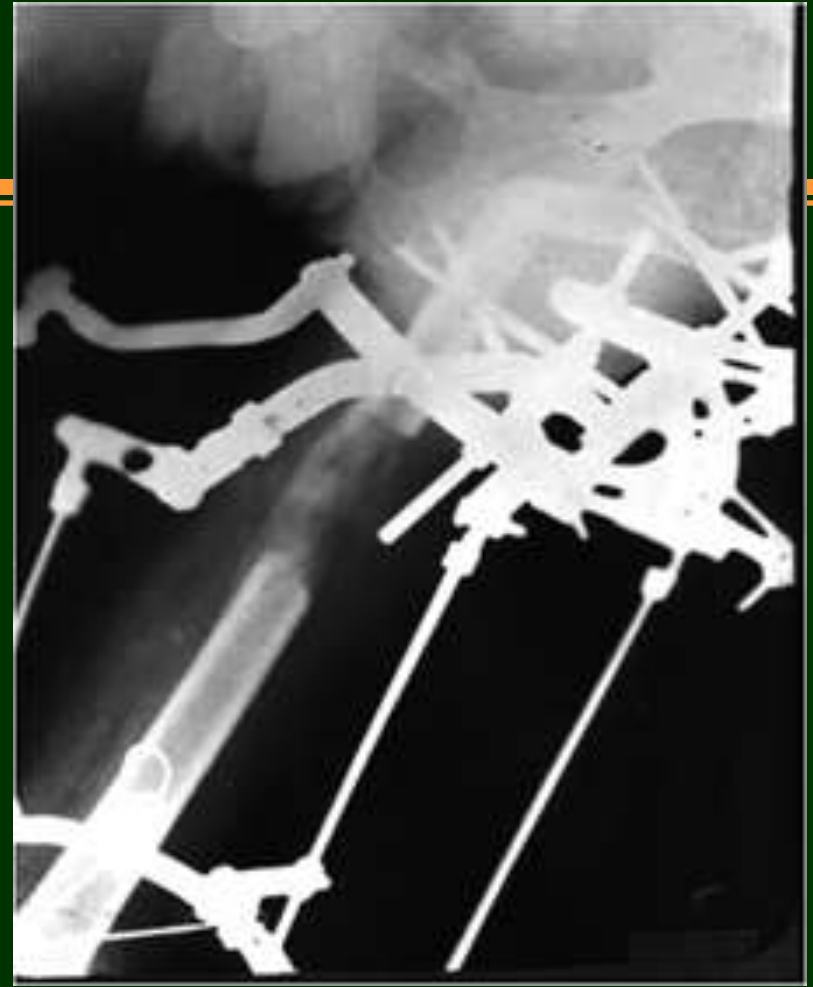
# IHR

[Click here to see animation](#)





*30 yr old school teacher with severe lurch and pain in hip after a hip infection destroyed his hip joint*



*The xray shows two operations. At the upper level an osteotomy is angulated at almost 60 degrees to give pelvic support and lengthening is being done at lower level to equalize limb lengths*





*His limb lengths are now equal and his lurch is reduced.*

# Aims of IHR

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- **Provide Pelvic Support**
- **Improve Hip Mechanics**
- **Correct Shortening**
- **Normalize Mechanical Axis**

*This is a most versatile operation and can be used for a variety of purposes*

# Pelvic Support

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- **tear drop**
- **Superior Lip**
- **Acetabulum**
- **Pubic Ramus**

*The question is where does the destroyed hip find support under the pelvis. After the osteotomy is done the upper femur may rest against any of these structures depending on the shape of bony ends.*

# Hip Mechanics

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- Trochanter---downward rotation
- Adduction of Prox fragment
- Medialize Centre of Hip

*These are the mechanisms by which the lurch is reduced by improving mechanics of the hip joint*



*He had complete destruction of the hip with shortening and lurch and severe overriding.*

**Harris Hip Score = 82**

**Oxford Hip Score = 35**

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*This is is funciton with a high Harris Hip Score*

# Infected Hemi- Replacement

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*A hemireplacement arthroplasty is a common operation and can result in an infection for which the only operation was to remove the prosthesis.*



*The xray shows the removed prosthesis. The 38 year old is seen with the apparatus after teh two level operation within few days after surgery*





*His pain is gone , limb lengths are equal and lurch is reduced dramatically*

# 10 years FU

## Harris Hip Score= 83.88



*After 10 years he is doing well and these pictures show that he can sit in Indian style on the floor as was required of him for his daughter's wedding.*



*Photographs show absence of lurch and limp.*

# Tuberculosis

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*Tuberculosis of the Hip joint has completely destroyed the femoral head which was removed with resultant shortening and instability.*



*The ilizarov hip reconstruction operation is done with the LRS fixator which offer more convenience and comfort but slightly less correction.*



*Lurch has reduced and his lengths are equal*

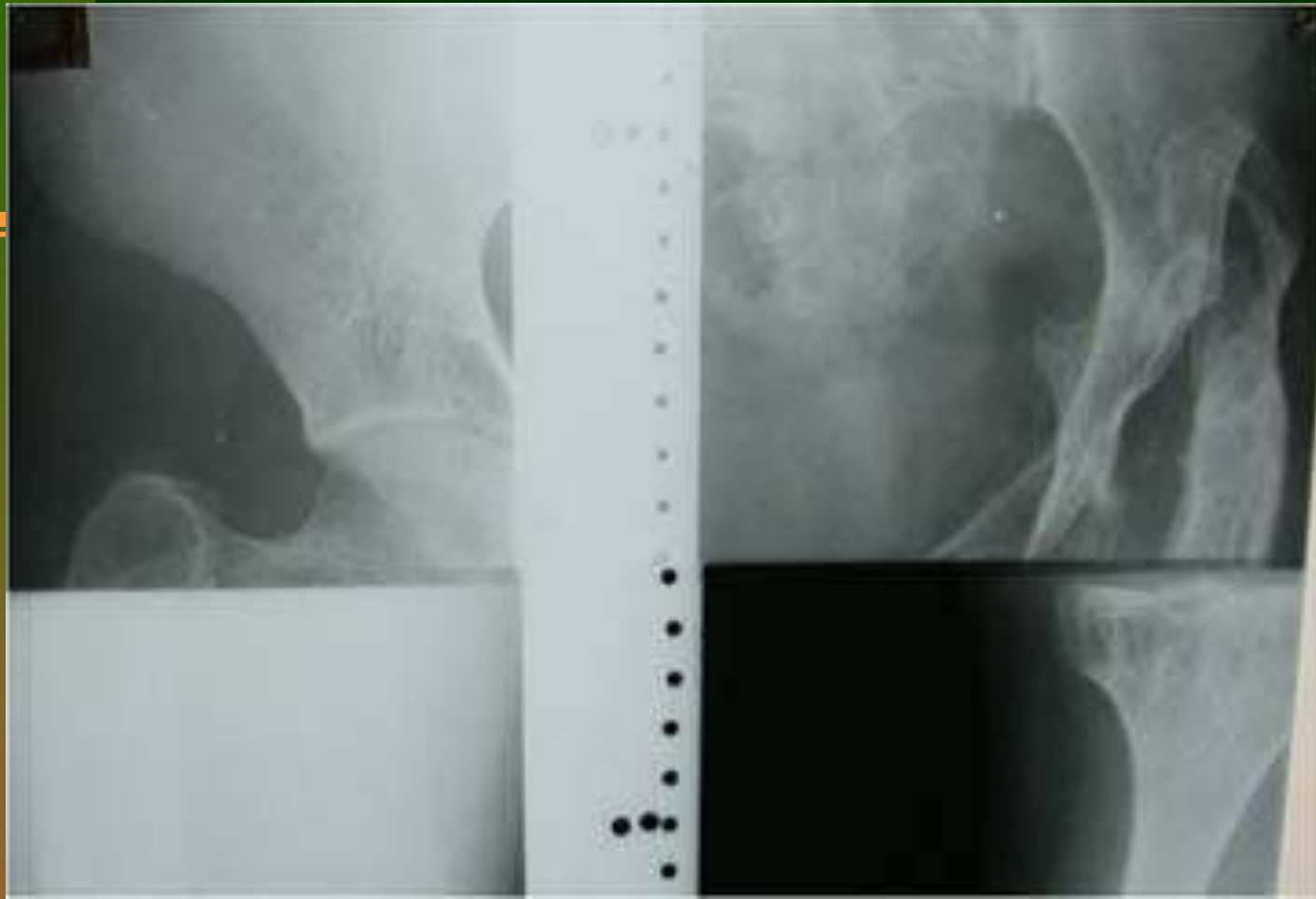
# Infantile Septic Arthritis

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*18 year old had severe infection in childhood which resulted in severe shortening with a destroyed hip joint*



*The SCANOGRAM ( limb length measurement xray) which shows very dramatic shortening of the femur.*



*He had the IHR operation and 9 cm of length in femur was gained.*



*Within a few months , the tibia was lengthened to the remaining extent giving him a total of 20 cm of length. The Hip lurch is significantly reduced.*



*Not only are lengths equal but the mechanical axis is straight as well.*

**Dislocated**

3 month  
Traumatic  
Dislocation



*20 year old had this unreduced Posterior dislocation of the Hip due to fall from a tree.*





*The Ilizarov external fixator was applied to the Pelvis and femur and the head of the femur was gradually brought down and relocated.*

# Squatting



# X-legged



*He can squat and sit cross legged at home as is his cultural requirement.*

# 17 yr FollowUp



*17 years after his relocation, there is no AVN or any pain in his hip joint*

# Harris Hip Score = 96.88



*He has no problems at all*

# Neglected Dislocation of hip

# Chronic dislocation hip



*This 16 year old had a chronic dislocation of hte hip due to childhood infection. A signifcant lurch is seen*



**50° subtroc  
valgus**

**4 cms  
length with  
de-valgus**

*Xray shows a high subtrochanteric valgus with 70 degree correction and distal lengthening of 4 cm*

**Lurch reduced 90%**

**Good pelvic support**



*External fixation duration was only 4 months*



# 21 year FU



*At 21 years after surgery, her mechanical axis is maintained, Hip has formed a functional articulation .*

# 21 YEAR FOLLOW-UP



*She has no lurch and can squat with comfort.*

Harris Hip Score= 89

Oxford hip Score= 44



*She has two healthy children and can sit cross legged and sideways at home as is her requirement.*



*She is self employed and can ride a cycle to work and is independent*

**Dysplastic**



*14 yr old with severe dysplasia of the hip joint. He had come earlier for which we had performed a Tibial Lengthening. Now at 14 years the time is ripe for an IHR*



*He began walking immediately after surgery*



*4 cm length was achieved as well as good pelvic support*





*very little lurch remains*



*Excellent function*





*He can sit in “Vajrasana” position for few hours at a time.*

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# What happens to the new "joint" surface

*10 years after this operation he came for pain in the hip*



*The xray shows an osteophyte formation with increased point pressure*



*After open surgery it was excised.*

# Harris Hip Score= 91.53



*He is able to sit in this position for 3 to 4 hours as he is an accomplished Classical Hindustani singer. No lurch and pain.*





*Dysplastic hip in 18 year old with significant shortening*

**Dysvascular**

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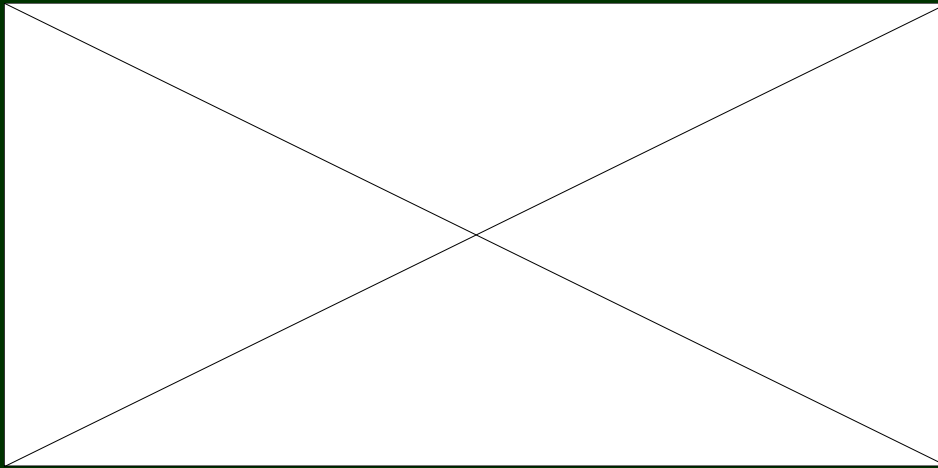
# AVN foll. # neck femur



# Avascular Necrosis

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[Click here to see animation](#)



## Medial shift of distal fragment



## Mechanical axis normalised



**3.5 cms length**

*Operation done to improve mechanics of the Hip joint as well as lengthen by 3.5 cm at lower level*

**Trendelenberg -ve**  
**Limbs lengths equal,**  
**no pain**



*No lurch and no pain*

# 21 year Follow-up



*After 21 years he has very little pain or any limitation. He has a good life as a Corporate Accountant and can travel by public transport in Mumbai*

**Harris Hip Score = 92.88**



*Limb lengths are equal. Mechanical axis is normal. Hip xrays do not look pretty now but do not cause him much trouble*



**Doomed?**

# Harris Hip Score= 39.6



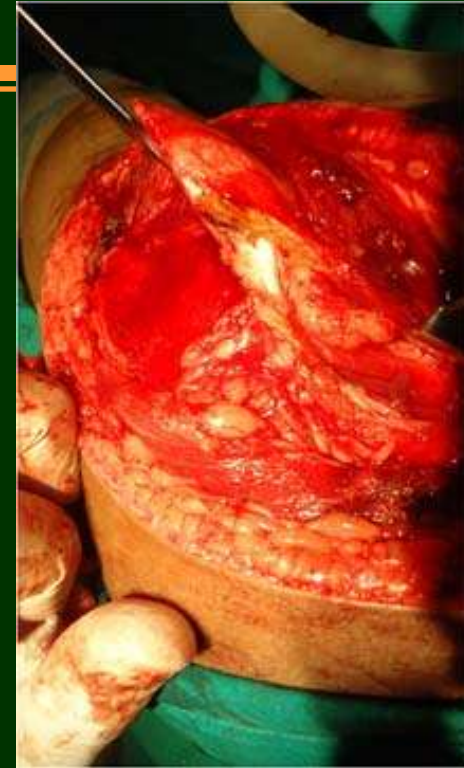
*AVN in a 22yr old with saddle shaped destruction of femoral head with no movement and very poor Harris Hip Score*

Ganz's

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Safe Surgical  
Dislocation &  
Intra-Articular  
Osteotomy

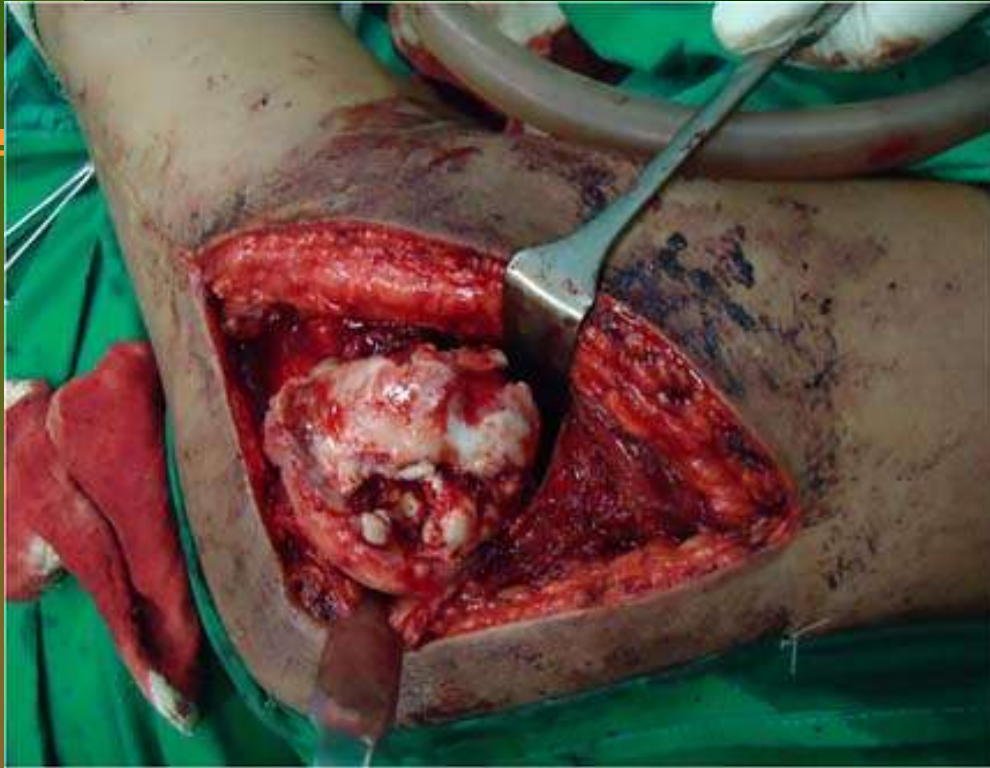
# Trochanteric Flip osteotomy



*Kocher approach. Trochanteric Flip osteotomy with attachments of Vastus lateralis and Gluteus medius.*

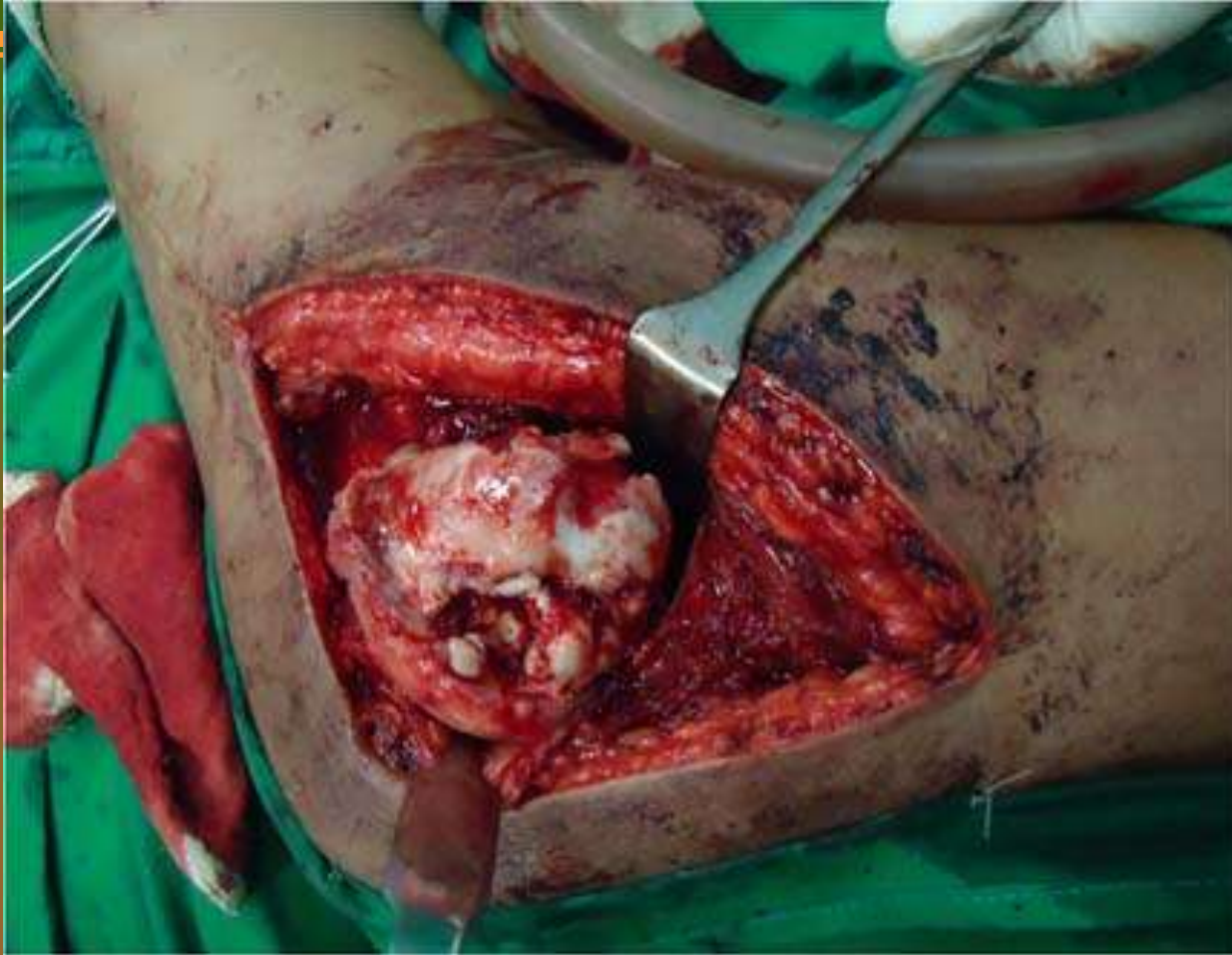


*Hip capsule approached between Piriformis and Gluteus Minimum. This way the primary blood supply of hip from Deep Branch of Medial Circumflex Femoral Artery is preserved. The anastomosis between Deep Branch of MFCA and Inferior Gluteal artery which courses just deep to Piriformis is also preserved.*



*Hip is exposed showing damaged head with the central portion having undergone depression*

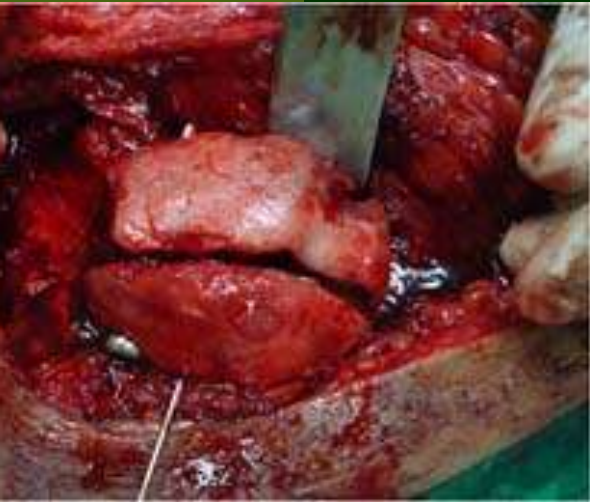
# Intra-articular osteotomy



*The central damaged portion is removed*











*Good maintenance of femoral head shape.*



*Reduced lurch. No pain at all.*

# HARRIS HIP SCORE= 92



**Thank You!**

**See you in Goa  
in Sept. 2014**

*Welcome to the 8<sup>th</sup> International ASAMI Congress at Goa on 18<sup>th</sup>  
Sept. 2014*