Ilizarov Hip Reconstruction

Percutaneous Rx of Dysplastic & Deformed Hips!

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

Chief Orth. Surgeon

International Deformity & Lengthening Inst.

AKOLA

Consultant

Jaslok Hospital Mumbai
Ilizarov Hip Reconstruction

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

- 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.
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

- 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

This is is funciton with a high Harris Hip Score
Infected Hemi- Replacement

A hemireplacement arthroplasty is a common operation and can result in an infection for which the only operation was to remove the prosthesis.
The x-ray shows the removed prosthesis. The 38 year old is seen with the apparatus after the two level operation within few days after surgery.
His pain is gone, limb lengths are equal and lurch is reduced dramatically.
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
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
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.
He can squat and sit cross legged at home as is his cultural requirement.
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 the hip due to childhood infection. A significant lurch is seen.
X-ray 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
At 21 years after surgery, her mechanical axis is maintained, Hip has formed a functional articulation.
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.
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
AVN foll. # neck femur
Avascular Necrosis

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
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 x-rays 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
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 maintainence 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 8th International ASAMI Congress at Goa on 18th Sept. 2014