Dr. (Prof.) Anil Arora
MS (Ortho)  DNB (Ortho)  Dip SIROT (USA)
FAPOA (Korea), FIGOF (Germany), FJOA (Japan)
Commonwealth Fellow Joint Replacement
(Royal National Orthopaedic Hospital, London, UK)

Senior Knee and Hip Replacement Surgeon
Associate Director
Department of Orthopaedics and Joint Replacement
Max Superspeciality Hospital, Patparganj, Delhi (India)
E-mail : anilarora@delhiorthojournal.com
One Stage or Two Stage

- Majority of workers prefer fixation of acetabulam to restore Bone stock and then do second stage Total Hip Replacement.
- Primary Total Hip Replacement in acute stage carries a high failure rate.
- Primary Total Hip Replacement is reserved for only those patients who can not undergo two surgeries, as complication and failure rate with primary THR for acetabular fractures is high.
Total Hip Replacement for previously treated Acetabular Fractures

- Technically very demanding
- We have vast experience in handling such cases
- We have operated cases which were previously operated three times by another surgeons for acetabular fractures
Previously operated case at another set up

- Reported to us with shortening and difficulty in walking
- We performed complex primary THR
Another Case
J##### Kaur
SURGICAL APPROACHES

DEPENDS ON:

- Previous approach to hip joint for acetabulum fixation
- Deficiencies in anterior or posterior wall or column of acetabulum and need to reconstruct them
- Surgeon experience
- Condition of soft tissue and skin
SURGICAL APPROACHES

- Because of previous surgery, there is fibrosis in the tract of incision and around hip joint.
- This fibrotic tissue in one hand, limits soft tissue mobility and make the operation more difficult and on the other hand, increases bleeding in the field of operation.
- Because of tightness in the soft tissue and limited exposure, we prefer modified hardinge approach.
- This not only makes exposure better and wider, but also helps the surgeon to save abductors.
SURGICAL APPROACHES

- Exploration of sciatic nerve is not always necessary.
- After exposure of hip joint and identification of remaining capsule, by staying close to bone and retraction of sciatic nerve with the fibrotic tissue around it, acetabulum can be identified and can be prepared for implantation of acetabular cup.
SURGICAL APPROACHES

- It is not wise to search for all of hardwares (plate and screws) for fixation of acetabulum fracture and their removal.
- Because this not only damage more soft tissue and weaken posterior support of hip joint and predisposes the prosthesis to dislocation, but also, it may destroy bony support and bone stock of acetabulum and make implantation of cup weaker than usual.
SURGICAL APPROACHES

- Some times, before reaming acetabulum, no hardware or screws are visible behind cartilage of hip joint. After first or second ream, screws come in the field and appear and make more reaming impossible.
- In this manner, screw or plate removal is necessary.
SURGICAL APPROACHES

- After exposure of hip joint and acetabulum, union and competency of posterior column and wall should be checked with a probe so the surgeon should be sure about the stability of peripheral ring of acetabulum and its boundaries before implantation of acetabular cup.

- If the fixation is imperfect, so re fixation and plating and bone grafting may be necessary.
Non-Union with Sciatic Injury
If it is possible, because of lower age of patients in this category, it is better to use cementless cup and cementless stem for total hip arthroplasty.

But in some situations, it may be better to use cemented cup.

Cementless THA is a suitable treatment for posttraumatic arthritis after acetabular fracture. Lizardz-Utrilla A, Sanz-Reig J, Serna-Berna R.

Source

Department of Orthopaedic Surgery, Hospital General Elda, Elda, Alicante, Spain. lizar1@telefonica.net
CEMENTED VERSUS CEMENTLESS IMPLANTS

- For example, if deficient posterior wall is large and bone contact between host bone and cup is minimal (less than 30%), it may compromise osteointegration and also the cup can not be inserted with press fit technique, so cemented cup is preferred.
- It is accepted that if more than 1/3 of cup is in contact with graft, it is better to use uncemented prosthesis.
- About femoral stem, because of younger age of these patients, nearly always it is better to use cementless stems.
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PRECAUTIONS

- If trochanteric osteotomy has been done for previous acetabulum surgery, screw removal is not necessary always for insertion of femoral stem.
- Surgeon can start preparation of femur for insertion of femoral stem, if the screws are found in the way of broaches, then removal of screws should be done.
- Because removing screws which are inserted for fixation of greater trochanter may damage some fibers of abductor muscles, so, it is better to leave screws in place unless they are located in the tract of insertion of femoral stem.
PRECAUTIONS

- In rare situations, if even largest cup cannot cover the whole periphery of acetabulum, it may be necessary to use reinforcement acetabular rings or cages.
- If it should be done, after implantation of cages and fixation of it to iliac bone, behind it, particles of bone grafts (mostly allograft), should be inserted and then cemented cup should be used inside the ring.
- If medial wall is deficient, it should be covered with mesh and over it particulated chips bone (allograft or autograft) should be inserted and then acetabular cup or reinforcement ring should be used.
PRECAUTIONS

• In some cases, hip arthroplasty may be necessary because of absorption of head of femur after avascular necrosis of head.

• In these cases, even acetabular cartilage seems normal, it is better to do total hip replacement instead of bipolar prosthesis.

• Because of younger age of these patients and higher demand of them, wear of acetabulum progresses rapidly and another surgery to change bipolar to total hip arthroplasty may be necessary soon.
PERI-OPERATIVE MEDICAL MANAGEMENT:

- A thorough evaluation by physician, cardiologist and nephrologists is done prior to surgery.
- Patient is kept post operatively for one day in intensive care unit
- The limb is painted and draped one night prior to surgery
- Antibiotic coverage is started from the morning of surgery and is continued for 7 post operative days
- Post operatively also the patient is evaluated by team of physician, cardiologist and nephrologists
PERI-OPERATIVE MEDICAL MANAGEMENT:

Anticoagulation Therapy

- Low molecular weight heparin is started on the next morning
- The epidural catheter is removed after 48 hours
- Next dose of LMWH is given after at least 10 hours after removal of epidural
Peri-Operative Medical Management:

Pain Management

- Epidural analgesia is started per operatively through epidural catheter under the anesthetist control and is normally continued for at least for 48 hour
- Strict watch on vitals of patient is done and the doses are modified accordingly
- In few patient in which the blood pressure is not sustained we use narcotic dermal patches
PHYSIOTHERAPY

Days of Surgery:

- Begin to lower extremity isometric exercises and ankle pumps.
- Encourage the patient to perform these exercises every two hours while awake.
- post-operative dislocation precautions/restrictions.

Post-Operative Day 1:

- Continue lower extremity isometrics and ankle pumps. Initiate upper extremity and contra lateral limb strengthening exercises.
PHYSIOTHERAPY

Post Operative Day 2:
• Begin assisted ambulation on level surfaces using an assistive device, weight bearing status dependent upon prosthesis used and status of acetabulum
• Review lower extremity isometric and ankle pumping exercises

Post Operative Day 3:
• Begin supine lower extremity active assisted range of motion exercises to the operative extremity. Motions are to the patient’s tolerance and in cardinal planes. Continue assisted ambulation on level surfaces. Reinforce hip dislocation precautions/restrictions
PHYSIOTHERAPY

Post Operative Day 4:

- Continue comprehensive exercise program with emphasis on increasing hip range of motion and general muscle strength in the operative extremity.
- Begin sitting exercises.
- Refine gait pattern and instruct in stair climbing. Review home instructions/exercise program with emphasis on hip dislocation/precautions.
REHABILITATION

Follow the precautions:

- Do not bend the hip more than 90°.
- Do not lift the knee on the operated leg higher than the hip when sitting.
- Do not bend or squat to pick things up off the floor.
- Do not bring the operated leg (knee) past the midline of one’s body (pelvis). Do not cross your legs. Take care not to shift the pelvis sideways without also moving the legs - pivot on the bottom instead.
- Do not stress the hip in extremes of rotation. Do not cross the ankles. Do not put the foot of the operated leg on the opposite knee, or bring it to the outside. Keep feet pointed forward.
Thankyou