Case Report
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TOTAL HIP ARTHROPLASTY FOR ANKYLOSED HIP: A CASE REPORT

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ABSTRACT

Ankylosis of the hip is very difficult to treat surgically and should only be attempted by an experienced surgeon together with comprehensive pre-operative planning. It is important to inform the patient about the possible complications of this procedure. Male patient who presented at the age of 68 years with severe left hip pain for the last 30 years. The pain was intermittent,mostly at night, The pain got worse during walk and subside when resting. No history of trauma, TB contact, fever, allergies, alcohol usage or smoking. There was also no history of surgery. X-Ray shows fusion of the left hip. Blood test shows no infection detected. Posterior approach was used in this case, inability to internally rotate the hip due to bony fusion will made the osteotomy more difficult. Visualized Greater Trochanter and palpable Lesser trochanter as landmark for osteotomy. THA is an effective treatment for severe flexion ankylosed/fused hip deformity although there are high surgical complications than routine hip arthroplasties. Adequate preoperative planning will improve the clinical outcome of the hips.

Keywords: Arthroplasty, Osteotomy, Knee, Neglected, Tibial Plateau, Osteoarthritis.

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INTRODUCTION

Hip ankylosis is a rare entity. In the past an arthrodesis was performed for symptomatic patients, but numerous studies have however proven that the outcome of total hip arthroplasty in ankylosis is favourable (1). Ankylosis of the hip is very difficult to treat surgically and should only be attempted by an experienced surgeon together with comprehensive pre-operative planning (1). It is furthermore important to inform the patient about the possible complications of this procedure. Some of the complications reported were: nerve palsies, infection, dislocations and heterotrophic ossification (1,2). Implant survival was 96.1% at ten years, and 72% at 26 years (1). Conversion of an ankylosed hip is especially indicated if the patient has pain, functional disability, leg length discrepancy and osteoarthritis of other adjacent joints (especially the lumbar spine and knees) due to the deformity (1,3)

PATIENT INFORMATION

We report on a case of a male patient who presented at the age of 68 years with severe left hip pain for the last 30 years. The pain was intermittent, mostly at night, The pain got worse when she walked and subsided when resting. No history of trauma, TB contact, fever, allergies, alcohol usage or smoking. There was also no history of surgery.

Normal vital signs. Severe limited range of motion due to the pain in his left hip. His neurovascular examination was normal. No lymphadenopathy was present. His left lower leg is 3 cm shorter than the right lower leg (Figure 1.). Blood tests were normal, no sign of infection detected. X-Ray examination shows no fractures or dislocations, no sclerosis, no lytic areas were reported, and it shows fusion of the left hip joint (Figure 2.). The clinical notes stated that he had pain in left hip, he was walking with difficulty due to pain and had no range of motion of the left hip. The decision was made to perform a total hip replacement to allow him the ability to stand, walk and sit. This would improve his quality of life. Conversion of the ankylosed hip to staged THA was suggested because of the following issues: symptomatic fused hip with failed conservative treatment, improper position of spontaneous fused hips, poor function (Figure 3.).

The decision was made after the patient was explained the benefits and risks of the surgery. He was then placed in the right lateral decubitus position, and posterior approach was used. The color and thickness of the hip abductors were evaluated intraoperatively as good. The femoral head and the acetabulum were difficult to visualize as osseous bridges were formed between the femoral head and the acetabulum. But since the greater trochanter is visualized and the lesser trochanter still palpable, the osteotomy can be made although the fixed hip will made the osteotomy more difficult, since we were unable to internally rotate the hip (Figure 4.). Acetabular preparation started with reaming in situ and was completed with the insertion of a cementless cup and two-screws fixation. The femur was then prepared as the standard technique.

Figure 1. Shortening 3cm of the left lower limb.

Figure 2. X-Ray taken 2021 showing ankylosed of the left hip

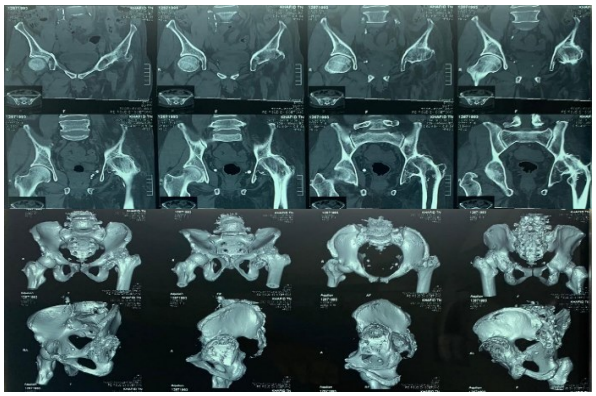

Figure 3. Pelvic CT-Scan

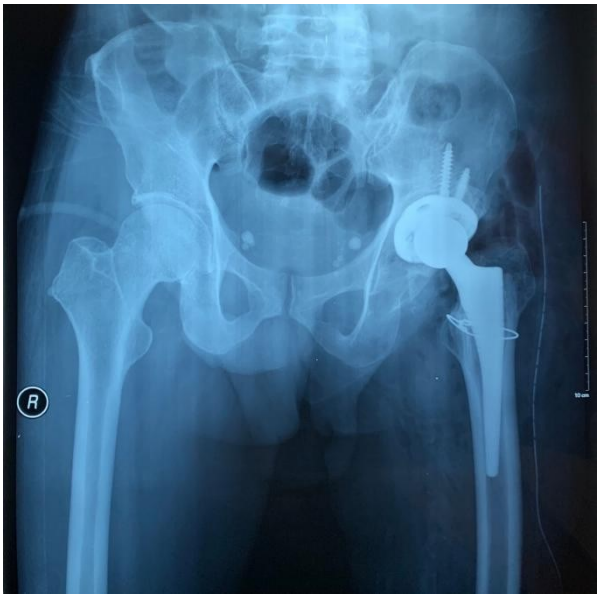

Figure 4. Post Op X-Ray

DISCUSSION

Spontaneous ankylosis of the hip is rare, and not often documented in the literature. It can occur spontaneously – due to infective or inflammatory conditions, tuberculosis and/or trauma (Table I). Pre-operative planning is very important and should include a proper history (Table II). Clinical evaluation should be thorough with special attention paid to leg length discrepancy, deformities, range of motion and abductor function. Evaluation of the abductor function is very important, specifically in those patients whose hips fused before puberty. This is associated with a higher rate of dislocation (1,6)

Pre-operative X-ray templating should be used to plan surgery. A CT scan can also be used in this regard (1). The positioning of the patient on the operating table and cup positioning can be very difficult and it is important to recognize this when planning the surgery. Different surgical approaches (anterolateral, posterolateral, lateral, ± trochanteric osteotomy) have been used in this type of surgery and are surgeon-

dependent (1). Swanson et al (5) suggest that whatever surgical procedure is used, the surgeon must aim for adequate surgical exposure to remove previous hardware; to identify the anterior and posterior column of the acetabulum adequately; to correct femoral deformities; and to decrease tension on the neurovascular structures and soft tissue intra-operatively. When reaming for cup placement the surgeon must be sure of direction especially if the patient has a fixed flexion contracture. Ream until good bone stock is reached; however, beware if the patient is osteopenia.

Table 1. Differential diagnosis of ankylosis of the hips.

Spontaneous onset
Tuberculosis
Hematogenous bacterial infection
Trauma (e.g congenital dislocation, fracture dislocation)
Osteoarthritis
Rheumatoid arthritis
Ankylosing spondylitis
Developmental dysplasia of the hip/slipped capital femoral epiphysis
Perthes

Table 2. Important questions to ask

What was the cause of the ankylosis?
Any previous treatment?
Age at presentation of ankylosis
Any other joints influenced? (Spine, Contralateral hip or knees?)

Malhotra et al (6) suggested leaving a spike of bone at the superio-lateral acetabular margin when reaming to ensure purchase at cup placement. Increased anteversion of the femoral neck intra-operatively can cause intra- and postoperative complications. These complications include impingement of the prosthetic neck or greater trochanter; struggling with the reduction; and anterior instability post-operatively. Swanson et al (5) reported a higher risk for failure in patients younger than 50 years and with ankylosis due to prior surgery. They presented six valuable tips for surgery: 1). Look for the abductor muscles and protect them during surgery. 2). The surgeon should know exactly where the rotational centre of the acetabulum is. 3). Make sure adequate medialisation and sizing of the component by concentric reaming of the acetabulum is achieved. 4). Do not place the acetabular cup too cephalic. 5). Address the leg length discrepancy. 6). Avoid impingement and instability by correcting the femoral offset (12).

Table 3. Complications

Perforation of the posterior shaft of the femur
Nerve palsies – sciatic/femoral nerve (7%)
Failure of trochanteric fixation
Malpositioning of the acetabular component
Aseptic loosening of the femoral component
Dislocations (2%)
Heterotrophic ossification (13%, no NSAIDs given)
Deep vein thrombosis/pulmonary embolism
Delayed wound healing
Infection

However, several retrospective studies have shown that the conversion of hip arthrodesis to arthroplasty increases the risk of nerve injury and heterotopic ossification. Considering the possibility of a higher rate of complications in this specific situation, many data indicate that performing total hip arthroplasty is controversial and may not be necessary if hip had been fused at an acceptable position (2).

CONCLUSIONS

THA surgery in previously fused hips is a technically demanding procedure with well-known reported complications. The surgeon should not underestimate the complications, and the patient needs to be cautioned about the complications. THA is an effective treatment for severe flexion ankylosed/fused hip deformity although there are higher surgical complications than routine hip arthroplasties. Adequate preoperative planning modified surgical approach, soft tissue release, postoperative care with regular physiotherapy improves the clinical outcome of the hips.

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