

Research Article

Conversion of Stiff Hips to Mobile Hips using Harding Approach with More than Two Years Follow Up

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Abstract

Background: Total hip replacement is a very reliable therapeutic intervention in patients with hip pathology requiring painless, mobile hip articulation. Ankylosing spondylitis is a major indication for mobile Total hip replacement to alleviate pain, reestablish hip joint function and enhance the quality of life. It is a retrospective study of functional outcome in a series of patients with ankylosis of hip joint associated with severe ankylosing spondylitis who underwent bilateral primary total hip arthroplasty with uncemented components using harding approach.

Methods: A total of 40 hips that underwent THA in patients with diagnosis of Ankylosing Spondylitis were evaluated at a mean follow up of 2 years. All patients had very severe hip pain with almost no range of motion in hip joints preoperatively and all went bilateral uncemented Total Hip Replacement performed by a single surgeon. Patients were gradually ambulated with weight bearing as tolerated. Modified Harris Hip score was assessed during follow up.

Results: At a mean follow up of 24 months, all patients had experienced remarkable improvement in hip joint function and ROM. The average Modified Harris Hip score was 86.95(82-92). There was no incidence of stem loosening and revision surgery at the final follow up in any patient.

Conclusion: Bilateral severe hip ankylosis in patients with ankylosing spondylitis can be treated with uncemented THA, which can significantly improve ROM, Modified Harris Hip score and quality of life. This treatment is worthwhile surgical intervention and boom to patients who can barely walk.

Introduction

Ankylosing Spondylitis (AS) is a chronic inflammatory type arthritis that forms part of the group of spondylarthritis. It firstly influences the spine and pelvis but peripheral arthritis and enthesitis are also frequent features [1].

The mean age of onset of symptoms is between 15 and 25 years and it is more common in males [2,3]. Approximately 0.1% to 1.8% of people are affected.

Approximately 25%-50% of patients have hip joint involvement, with bilateral hip disease seen in 50%-90% of in AS [4].

Severe disability and functional impairment can result rapidly due to a combination of axial spine and hip involvement [1].

Due to abnormal spinopelvic mobility pattern that occurs while changing posture from standing to sitting position, the patients are unable to sit comfortably.

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Disease-Modifying Anti-Rheumatic Drugs (DMARDs) such as anti-Tumour Necrosis Factor (TNF) agents can slow the progression of the disease but their role have been limited in treating established arthritis of the joints [3].

Ankylosing spondylitis is a major indication for mobile total hip replacement to reduce pain, restore hip joint function and improve the quality of life.

Methodology

Study design: Retrospective

From May 2018 to Aug 2021, total hip arthroplasty was performed on 40 hips in 20 patients with bilateral ankylosis caused by ankylosing spondylitis. The study patients included 14 men and 6 women. All patients had severe hip pain and dysfunction with bilateral bony ankylosis and no range of motion preoperatively.

The inclusion criteria were all patients with diagnosis of Ankylosing spondylitis with bilateral stiff hip. The exclusion criteria were active infection, severe medical comorbidities, abductor insufficiency and progressive neurological disorder.

Preoperatively, routine blood investigation and pre anaesthetic checkup was done. Preoperative mMHHS was calculated and the score of worst hip was taken into consideration. X-ray templating was performed to carefully plan the anatomical reconstruction and determine the most appropriate approach depending on patient anatomy. CT scans and 3-D reconstruction were performed in some cases. First-generation cephalosporins was administered 30 min before the operation and these antibiotics were re-administered for operations exceeding 3 hours.

All operative procedures were performed in an operating room equipped with a vertical laminar-flow clean-air system. All patients underwent bilateral THA performed by a single surgeon using Hardinge approach keeping cup inclination and anteversion in Lewinnek safe zone. The most severely affected hip was operated on first, contralateral hip replacement being performed 2-3 weeks later.

Post operatively prophylactic parenteral antibiotics were routinely given, as stated above, with one dose preoperatively and continuation for 3 days postoperatively. Cephalosporin antibiotics were chosen to better prevent infection with gram-negative organisms. Prophylaxis for deep vein thrombosis was given.

Patients were ambulated with weight bearing as tolerated.

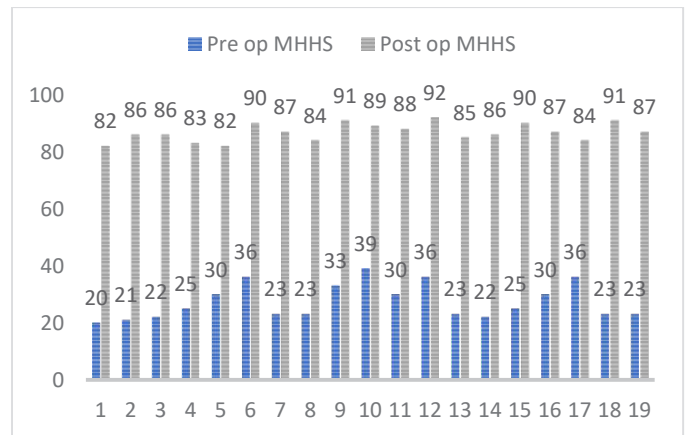
Patients were evaluated at a mean follow up of 2 years and Modified Harris Hip score was assessed during follow up.

Results

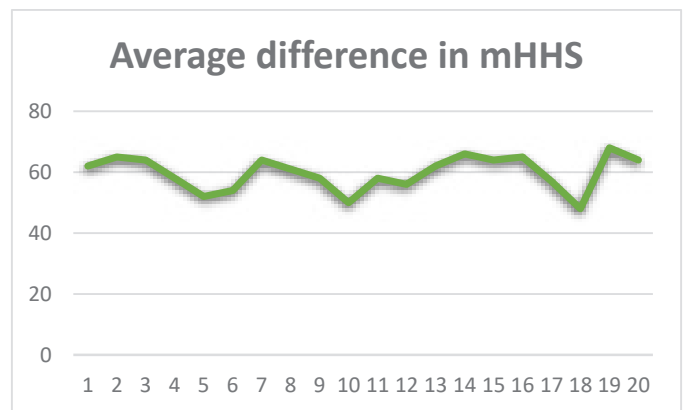
There were 20 patients (14 male, 6 female) with 40 affected hips. The average patient age at surgery was 43.45 years old. At a mean follow-up of 2 years, all patients had experienced significant clinical improvement in function, ROM, posture, and ambulation. At the final follow-up, the mean postoperative flexion ROM was 134.4° compared with 0° preoperatively. Similar improvements were seen in hip abduction, adduction, internal rotation, and external rotation. Post operatively all the hips were pain free.

The mean pre operative mMHHS was 26. (20-39)

The mean post operative mMHHS was 86.95. (82-92)

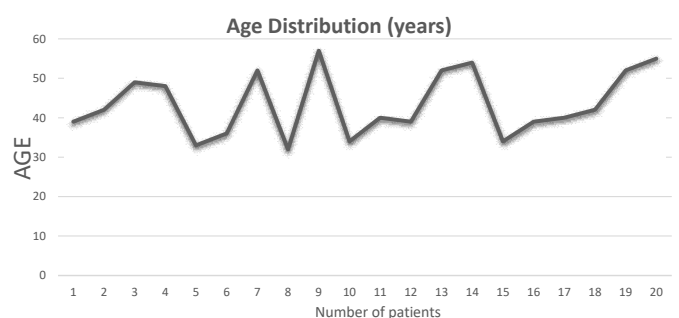


The average improvement in mHHS was 59.8



No stem had loosened at the final follow up in any patient, nor had any revision surgery been required.

Age distribution



Mean age-43.45 year

Discussion

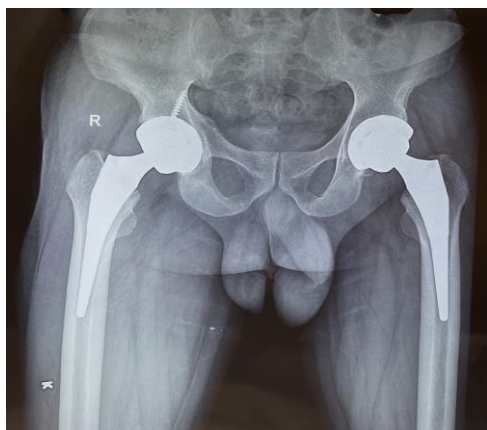
Ankylosing spondylitis is a chronic rheumatologic disease which affects 0.8% to 1.8% of the population [2]. Hip involvement in AS is between 25% and 50%, and the disease may be bilateral in 50%-90% of patients [4]. Disabling pain is the most common indication for THA. Patients with bony ankylosis usually do not have pain, but functional limitation and presence of severe deformity can be indications of THA in AS. Bilateral THA appears to be a successful procedure in AS patients with advanced hip disease. There are marked improvements in functional outcomes in the form of mHHS scores and range of motion in all the papers reviewed. Our study involved 40 hips in

20 patients with an average follow-up of 2 years. Our aim is to assess the functional outcome using modified Harris Hip score. In our study, the mean pre operative mMHS was 26. (20-39) and the mean post operative mMHS was 86.95. (82-92). The average improvement in mHHS was 59.8. In study conducted by Feng D-X, Zhang K, Zhang Y-M, et al the mean preoperative mHHS and the mean postoperative mHHS was 23.7 and 65.8 respectively. In another study conducted by Ye C, Liu R, Sun C, et al the mean preoperative mHHS and the mean postoperative mHHS was 24.8 and 83.8 respectively. The choice of cemented or un-cemented implant is important for long-term outcome and implant survival in this young patient group. Recent literature has shown that un-cemented prosthetic designs have the potential of bone ingrowth and may increase the implant survival rates [5]. In our study we have used uncemented stems. No stem had loosened at the final follow up in any patient, nor had any revision surgery been required.

Conclusion

Our study shows that bilateral total hip arthroplasty is a safe and effective treatment of advanced hip disease in AS. It results in significant improvements in objective outcome measures such as mHHS and patient mobility. This study shows that un-cemented prostheses that have good post-operative results despite Ankylosing Spondylitis patients were found to have severe osteoporosis in the upper femur. This treatment is worthwhile surgical intervention and boom to patients who can barely walk.

Case 1



Flexion



Adduction

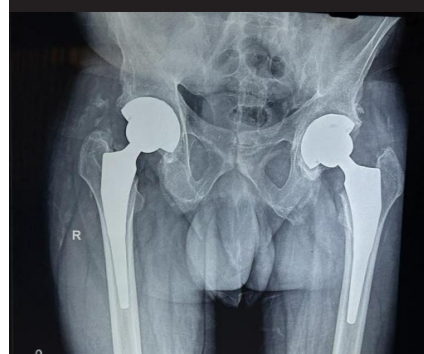


Abduction



Cross leg sitting

Case 2





Flexion



Abduction



Adduction

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