ORIGINAL ARTICLE

Outcome Analysis of Hip Arthroscopy

M. A. WAJID, M. USMAN SARWAR, M. ALI

ABSTRACT

Hip arthroscopy has evolved significantly over last two decades. Many procedures are being done arthroscopically as our understanding increases. However, in many countries, including Pakistan, Hip arthroscopy is in its infancy. We present our outcome of Hip arthroscopy. To the best of our knowledge this is the first report of outcome after hip arthroscopy in our local literature.

Material and Methods: We prospectively reviewed our first sevenconsecutive hip arthroscopy patients. The outcome was measured using modified Haris Hip score. The common indications in our set up were: septic hip (primary and post THR) and synovial pathology.

Results: Out of seven patients one lost to follow up. Of the remaining sixpatients, four had hip infection. One of these cases was post Total Hip Replacement. In two patients hip arthroscopy was done for synovial pathology.

In all the patients with septic arthritis, there was significant improvement – mean preop modified Harris hip score was 33.1(range 24-43) which increased to 56.8 (Range 29-71) after debridement except one patient with infected THR. The mean follow up of these patients is 6.6 months(range3-10 months). Mean length of hospital stay was 2.6 days (range 1-4) Two patients developed transient neuropraxia which resolved spontaneously.

Conclusion: Hip arthroscopy is a promising technique in selected patients with major advantages of reduced surgical trauma and excellent 360 degrees visualization of joint and shorter hospital stay . However, there is a steep learning curve. With careful portal placement and appropriate skills, hip arthroscopy has minimized the surgical trauma to access to hip joint.

INTRODUCTION

Traditionally hip problems have been managed by an open arthrotomy, with or without, a surgical dislocation. Hip arthroscopy is being used more frequently due to less invasive nature and it provides as good visualization as open procedure.(1)

Of all the joints amenable to arthroscopic surgery, hip arthroscopy has been the most challenging. It was first performed by Burman in 1931.(2)First description of labral tear was done in 1986(3) It poses unique challnges- as hip joint is surrounded by thick muscles and large neurovascular structures, access by traditional methods have involved significant dissection for the smallest of pathology i.e synovial biopsy. With improved instruments and techniques,arthroscopic examination of hip is now possible. (4)

However, it is mandatory that surgeon should be familiar with arthroscopic anatomy and techniques before starting this procedure. Indications are gradually being expanded and shall continue as our understanding of hip pathology increases.

For Correspondence:
Prof. M. A. Wajid, FRCS, FRCS (Tr & Orth)
Head of Orthopaedics
Shalamar Medical & Dental College, Lahore
Email: wajidmaw@gmail.com

MATERIAL AND METHODS

This is a prospective cohort study of 7 consecutive patients, over last 4 years. Our criteria to offer this technique has been very specific.

Inclusion criteria

Loose bodies, Unexplained hip pain, septic arthritis and synovial disease i.e. pigmented villonodular synovitis, chonromatosis.

Exclusion criteria

Advanced osteoarthritis, Avasular necrosis, stiff hip due to any reason, labral pathology and hip instability (5)

Out of these 7 cases, five patients were male and 2 female, right side was affected in 5 cases and left in 2 cases. One case was lost to follow up. This study presents pre and postoperatively review of 6 patients. As there are no validated specific outcome measures (6), in our heterogeneous group we used modified Harris Hip Score (HHS) to assess the outcome although this score was

developed for arthroplasty patients. New hip scores are being developed (7) and hopefully will be available for use. We also recorded length of stay, final diagnosis and complications.

Technique

Hip arthroscopy was done under general anesthesia in supine position (8)using traction table. Join distraction of approximately 1 cm was achieved by applying traction between 25 and 100 pounds of pressure. (9) Mainly two portals, anterolateral and anterior created under C-Arm, were used. After creation of anterolateral portal first, due to safety for neurovascular structures, subsequent portals weremade under direct vision. The anterior portal is made at the intersection of a sagittal line drawn down the leg through the anterior superior iliac spine and a transverse line drawn perpendicular to the body across the tip of the greater trochanter. Commonly viewed structure are femoral head, ligamentum teres, anterior, superior, and posterior labrum, femoral neck, peripheral femoral head-and-neck junction.

RESULTS

Out of 7 patients , one had synovial disease and 6 had infection. Out of these 6 patients, one lost to follow up. From 5 patients,one had infected total hip replacement which grew pseudomonas.In remaining four patients, two had tubercular arthritis (one grew Mycobacterium other than tuberulus) and twohad pyogenic arthritis (grew S. aureus). In all patients, there was significant improvement in – mean preop modified Harris hip score was 33.1 (range 29-43) which increased to 56.8 (Range 29-71) after debridement except in one patient with infected THR in which HHS decreased and he underwent definitive procedure for infected THR. The mean follow up of these patients is 6.6 months(range3-10 months). Mean length of hospital stay was 2.6 days (range 1-4) Two patients developed transient neuropraxia of Lateral femoral cutaneous nerve, which resolved spontaneously.

DISCUSSION

Diagnosis and management of hip problems can be challenging. The fact that MRI and MR arthrogram have its limitations as shown by Byrd.(11). The conventional MRI has high false negative rates (42 percent) but low false positive rates (10 percent) when used to evaluate intra-articular hip pathology. (10) Both MRI and MRI arthrography have been shown to have poor sensitivity and excellent specificity when evaluating cartilage lesions. (10)Czerny et al reported a sensitivity of 90% and an accuracy of 91% with MRA compared to a 30% sensitivity and 36% accuracy with plain MRI. In a subsequent study, the MRA showed a sensitivity of 91%, specificity of 71% and accuracy of 88%. (11) (12)

El-Sayed AM et al reported a comparison study of 20 hips treated with antibiotics and either open arthrotomy or arthroscopic drainage. At 12 month minimum follow-up, there was no statistical difference in the outcome. Hospital stay, however, was shorter in the arthroscopic group. (13)

One major concern regarding the procedure is the traction and compression injuries which are most commonly reported complication, (14) with rate up to 7% in small series.(15) This is due to prolonged procedures and/or excessive traction force. Generally these are transient and resolve spontaneously. (16) Compression may affect the scrotum and the labia majora, with injury ranging from oedema or haematoma to pressure necrosis. (17)(18)The direct injury usually happens to Lateral Femoral Cutaneous Nerve (LFCN) due to close proximity to anterior portal.

CONCLUSION

The diagnosis and treatment of hip pathlogy can sometime be very challenging. The initial results of arthroscopic procedures are encouraging. It has improved the diagnostic accuracy and the patients had shorter hospital stay, less wound complications, high yield of positive culture.

Arthroscopic drainage is an effective method in treating septic hip with minimal invasive procedure, and procedure can be extended to septic hips in children in early uncomplicated cases by orthopedic surgeons skilled in pediatric arthroscopy.

A Word of Caution: There is a steep learning curve to this procedure. After practicing arthroscopic surgery of knee and shoulder and other joints for more than 15 years and adequate personal professional development as well as doing open hip surgery for even longer years, I continue to find the procedure to be challenging.

The key to success is meticulous attention to detail in positioning and time in traction. Portals must be developed with extreme care avoiding iatrogenic damage. Diagnoses in which arthroscopy of the hip can play a role include:

DDH, Perthese disease, SCFE and loose bodies, trauma, inflammatory conditions, Femroacetabular impingement and labral tears. (19) The intra-articular findings can also be used to guide future reconstructive surgery of the hip. Hip arthroscopy is also a useful adjunct to evaluating post reconstruction pain especially for impingement lesions. It must be remembered that the intra-articular pathology (i.e., labral tears) is secondary to an underlying abnormal bony morphology. (20)

Most critical for success of this procedure is patient selection. The increasing use, and lack of abuse, of this surgical technique will hopefully make it as common as arthroscopy of other joints. (21) (22)

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