Is diagnostic arthroscopy of the hip worthwhile?

A PROSPECTIVE REVIEW OF 328 ADULTS INVESTIGATED FOR HIP PAIN

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We describe a prospective study of 328 patients undergoing arthroscopy of the hip.

Arthrography, CT or MRI was performed when clinically indicated. A preoperative diagnosis was reached in 174 patients (53%), while the remaining 154 were diagnosed as having 'idiopathic hip pain'.

In seven patients, access to the hip was inadequate. Arthroscopy altered the diagnosis in 176 hips (53%). The new primary diagnoses were osteoarthritis (75 patients), osteochondral defects (34), torn labra (23), synovitis (11) and loose bodies (9). In 172 hips (52%) an operative procedure was undertaken. In the remaining 84 patients (26%), arthroscopy neither changed the diagnosis nor provided surgical treatment.

Arthroscopy of the hip is considered to be of value in assessing and treating the adult patient with pain in the hip of uncertain cause.

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The popularity of arthroscopy of the hip has lagged behind that of other joints. This may be due to the technical difficulty of the procedure, or the perceived infrequency of indications for its use. In 1931 Burman¹ stated that "it is manifestly impossible to insert a needle between the head of the femur and the acetabulum". Over the last 20 years considerable technical advances have been made which allow safe access to the joint with good visualisation.

By the late 1980s the technique was recognised as a procedure the use of which was restricted to a few experts.^{2,3} Although arthroscopy of the hip is now well

established, the indications for its use still remain unclear. Previous reports of this procedure have included only small numbers of patients.⁴⁻⁶

Our aim was to compare the clinical and arthroscopic diagnoses and to assess the effect of arthroscopy on the management of these patients.

Patients and Methods

A total of 432 patients with a primary presenting complaint of hip pain had arthroscopy under the care of the senior author (RNV). The first 100 have been excluded since they were regarded as part of the learning curve for the procedure.

All patients were interviewed and examined. Preoperative investigation included radiological examination. Arthrography, CT or MRI was carried out if clinically indicated. All the cases were entered into a database. If no preoperative diagnosis could be reached a diagnostic arthroscopy was carried out. In the remaining patients, the arthroscopy was performed with the aim of undertaking a therapeutic procedure.

We used the lateral position with traction.⁷ The arthroscopic findings and procedure undertaken were recorded, as were the primary and secondary diagnoses. The primary diagnosis was that felt to be the major cause of symptoms (e.g., osteoarthritis). A secondary diagnosis was recorded if another abnormality was present (e.g., a degenerate labral tear).

Results

A total of 332 patients aged 18 years and older was studied. There were 212 women and 120 men with a mean age of 36 years (18 to 78). In four, the data were inadequate, leaving 328 patients in the study.

Six patients had arthrography, 19 CT and 99 MRI before arthroscopy. In 154 patients (47%) no cause for the pain could be identified preoperatively; they were given a primary diagnosis of 'idiopathic hip pain'.

Table I compares the preoperative and postoperative diagnoses. A primary diagnosis is shown for all patients. If more than one abnormality was seen a secondary diagnosis was recorded. In 145 patients (44%) the preoperative and

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Table I. Variation between preoperative and postoperative diagnoses for the 328 patients

Diagnosis	Number of patients with the preoperative diagnosis	The number of patients with postoperative diagnosis	
		Primary	Secondary
Idiopathic hip pain	154	32	-
Osteoarthritis	87	148	1
Torn labrum	20	33	20
Osteochondral defects	5	36	4
Loose body	22	20	11
Synovitis	2	14	14
Torn ligamentum teres	0	8	5
Chondromalacia coxae	0	9	1
Chondrocalcinosis	0	1	0
Synovial osteochondromatosis	8	4	0
Avascular necrosis	6	6	0
Dysplasia	7	0	0
Acetabular cyst	7	4	1
Plica	0	1	0
Perthes' disease	4	0	0
Tumours	4	4	0
Slipped upper femoral epiphysis	1	1	0
Protrusion acetabuli	1	0	0
Failed access	-	7	-
Total	328	328	57

Table II. Arthroscopic diagnoses made in patients presenting with 'idiopathic hip pain'

Operative diagnosis	Number of patients
Osteoarthritis	48
Osteochondral defects	26
Torn labrum	17
Synovitis	10
Torn ligamentum teres	7
Chondromalacia coxae	6
Loose body	5
Other	5
Normal	30
Total	154

Table III. The type and number of therapeutic procedures carried out in a total of 172 patients

Therapeutic procedures	Number of patients
Debridement of osteoarthritis	70
Labrectomy	30
Retrieval of loose bodies	26
Debridement of osteochondral lesion	17
Biopsy	13
Debridement of torn ligamentum teres	4
Synovectomy	4
Tumour	3
Other	5
Total	172

postoperative diagnoses were the same. In 176 patients (53%), hip arthroscopy changed the primary diagnosis. In seven patients (2%), access to the hip could not be achieved.

In the 154 patients with idiopathic hip pain, arthroscopy revealed an abnormality in 124 (81%). In this group the new primary diagnoses included osteoarthritis in 48 patients, osteochondral defects in 26 and torn labra in 17 (Table II).

In the 174 patients with a preoperative diagnosis, arthroscopy revealed a different abnormality in 52 (30%). Two patients with an abnormality diagnosed preoperatively had normal hips. The commonest primary diagnoses missed clinically in the idiopathic and diagnosed groups were osteoarthritis (75 patients), osteochondral defects (34), torn labra (23), synovitis (11) and loose bodies (9).

Therapeutic procedures were carried out in 172 patients (52%). The operations performed are shown in Table III. In the osteoarthritis group the 70 procedures included 47 chondroplasties, 17 labrectomies and six removals of loose bodies. Of the 146 patients in whom the preoperative and

postoperative diagnoses were the same, 69 had an operative procedure. Thus in 77 patients (23%) hip arthroscopy neither changed the diagnosis nor allowed operative treatment to be undertaken. Together with the seven patients in whom access failed, this means that hip arthroscopy did not contribute to management in 84 (26%).

The comparative cost of hip arthroscopy has been calculated in this hospital. If this procedure costs '1.0 unit,' hip arthrography under general anaesthesia costs 1.0, hip arthrotomy 1.8, and total hip arthroplasty 9.8 units. MRI costs 0.3 units.

Discussion

We have reviewed prospectively 328 cases of arthroscopy of the hip. All patients were older than 18 years and presented with a primary complaint of pain in the hip. A preoperative diagnosis was reached by clinical examination and radiological investigation in 174 hips (53%) (Table I). In the remaining 154, the hip was considered to be 'idiopathically painful'.

Fig. 1a

Fig. 1b

The findings at arthroscopy in two patients, both of whom had normal radiographs and MR scans showing (a) a chondral defect of the femoral head and (b) a tear of the ligamentum teres.

Arthroscopy altered the diagnosis in 176 patients (53%). An abnormality was found in 124 patients, in whom it had not been possible to reach a preoperative diagnosis (Table II). Two patients were thought to have a lesion before operation but the appearance of the hip was normal at the time of arthroscopy; 52 patients had a different abnormality from that which had been suspected clinically. The commonest primary diagnoses missed clinically were osteoarthritis, osteochondral defects (Fig. 1a), a torn labrum and loose bodies. New pathologies, such as chondromalacia coxae⁸ and tears of the ligamentum teres⁹ (Fig. 1b) were also found. Arthroscopy will help to define the significance and symptoms associated with these abnormalities.

In the knee, clinical assessment and MRI¹⁰ have largely superseded diagnostic arthroscopy. Glick⁶ showed that in 11 of 27 hips (40%) which defied diagnosis by clinical or radiological means, arthroscopy could provide an answer. Frich et al⁵ studied 14 patients aged from 12 to 76 years and found that the clinical diagnosis was confirmed in five (36%), was altered in three (21%) and that no pathology was found in five (36%). One arthroscopy was inconclusive. Thus our finding that arthroscopic changes were seen in 53% is in agreement with previous reports, and in our opinion justifies the procedure.

The patients with idiopathic hip pain were young (average 36 years) and significantly disabled; in this group an abnormality was found in 124 (81%). It is particularly important to achieve a diagnosis in these patients.

Edwards et al⁴ showed that hip arthroscopy is more reliable than MRI for the detection of chondral abnormalities, labral tears and loose bodies. In their series, the commonest new diagnoses made were of chondral lesions and labral tears. We consider that hip arthroscopy is the treatment of choice for these conditions. Arthrotomy is more traumatic to the joint as well as being more expensive.

A procedure was performed in 172 patients (52%) (Table III). Villar¹¹ showed that 60% of unselected patients reported symptomatic relief six months after arthroscopic debridement of the osteoarthritic joint. Fitzgerald¹² showed improvement in symptoms after the debridement of labral tears. Removal of loose bodies can be expected to be associated with relief of symptoms. In the presence of synovitis and other soft-tissue abnormalities arthroscopy allows a biopsy to be carried out. In the future, hip arthroscopy may have a role in the assessment of patients suitable for chondral repair.^{13,14}

Arthroscopy contributed to the management of 74% of patients with pain in the hip in our series, by either changing the diagnosis or allowing a surgical procedure to be carried out. It remains the optimum means of diagnosing the cause of such pain until imaging techniques are able to detect early cartilaginous lesions, labral tears and loose bodies more reliably. As better imaging techniques are developed arthroscopy of the hip will become more of a therapeutic and less of a diagnostic tool.

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