

Arthroscopy of the elbow

Diagnosis and extraction of loose bodies

Arthroscopy of the elbow was performed in 35 cases of suspected loose bodies. Loose bodies were found in 13 cases. Preoperative radiographs were falsely negative in two cases and falsely positive in 12. In ten cases arthroscopic removal was attempted; it succeeded in six cases. When no loose bodies were found, the most common diagnosis was degenerative joint disease.

Arthroscopy is recommended for diagnosis and treatment of loose bodies in the elbow joint.

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There have been few publications on elbow arthroscopy, mostly dealing with technique, and only a few clinical materials have been presented (Andrews & Carson 1985, Eriksson & Denti 1985). As indications and results have not yet been established, I present the experience at Århus County Hospital with elbow arthroscopy in the diagnosis and treatment of loose bodies.

Patients and methods

During the period 1.1.80 to 1.6.85, elbow arthroscopies were performed on 33 patients, on two bilaterally. There were 26 men and seven women. The mean age was 34 (14-67) years. The indication for arthroscopy in all cases was radiographic or clinical suspicion of loose bodies, secondary to osteochondritis in eight cases, sequelae to fracture or dislocation in seven and arthrosis in six patients (seven elbows). The radiographic examination was supplemented with special projections and tomography.

A 30-degree 5-mm Storz arthroscope was used in 27 cases, a Storz 3.8 mm in five and a Dyonics needle scope in three. Diagnostic hooks or canulae were used in nine cases.

All the arthroscopies were performed in general anesthesia and in a bloodless field. First the joint was filled with saline with a thin injection canulla and a syringe, usually about 20 ml. The elbow was flexed to about 90 degrees. The standard insertion site for the anterior compartment was in the angle between the radial head and the lateral humeral epicondyle. Hooks and arthroscopic instruments were inserted a

little proximal to this. For the posterior compartment, the elbow was extended and the scope inserted between the tip of the olecranon and the medial humeral epicondyle, in a proximal, ulnar and slightly posterior direction.

Nine surgeons performed the 35 arthroscopies.

Results

Loose bodies were found in 13 elbows. Of the eight patients with osteochondritis, four had loose bodies, three had degenerative changes, and one, a 14-year-old boy, had a stable osteochondritis, which was left to heal spontaneously (Table 1).

The main arthroscopic diagnosis in the 22 elbows in which no loose bodies were found was degenerative joint disease in nine cases, synovitis in two, stable osteochondritis in one (mentioned above) and normal joint in ten.

Table 1. Results of arthroscopy in elbows with clinical or radiographic suspicion of loose bodies

Secondary preoperative diagnosis	Loose bodies found at arthroscopy	Total no. of elbows
Osteochondritis	4	8
Fracture/dislocation	3	7
Arthrosis	3	7
Other	3	13

Table 2. The relation between radiographic and arthroscopic diagnosis of loose bodies in the elbow.

Radiograph	n	Arthroscopy	
		Pos	Neg
Positive	14	10	4
Probably positive	9	1	8
Negative	12	2	10

The radiographs were falsely negative in two cases, and falsely positive in 12 (Table 2).

In six cases loose bodies were removed by arthroscopic surgery. In four cases arthroscopic removal was attempted. In one case the removal did not succeed because it was impossible to hold the body with the grasping forceps. In another case, where a loose body was found in the posterior compartment after inspection of the anterior, removal was impossible because leakage prevented adequate distension. Two attempts were given up because of an insufficient view of the joint. In these cases the loose bodies were removed by arthrotomy under the same anesthesia.

In 11 cases an arthrotomy was made with no attempt at arthroscopic operation. Three of these had loose bodies removed, two had extra-articular calcifications removed and two had removal of exostoses, which were thought to limit the range of motion. In four cases, where no loose bodies were seen at arthroscopy, an arthrotomy was done for confirmation.

Three years later one patient who had had arthrosis but no loose bodies at arthroscopy, had four loose bodies with a diameter of 1 cm removed at arthrotomy. It is possible, but unlikely, that so many large bodies could have been overlooked.

Discussion

At least two insertions of the scope are necessary to see the whole joint. Eriksson & Pitman (1984) recommend that a small diameter arthroscope is used in the posterior compartment. As leakage from the first insertion often prevents adequate distension of the second compartment, I recommend that the most sus-

pect compartment is examined first. As another solution to this problem, Eriksson & Denti (1985) recommend that the 5-mm arthroscope is left in the anterior compartment, while the posterior compartment is examined with a small diameter arthroscope.

A medial approach to the joint, just anterior to the medial humeral epicondyle, has been recommended (Mital & Karlin 1980, Johnson 1981). A combined approach with the scope in a lateral portal and arthroscopic instruments in a medial, or *vice versa*, is recommended by Andrews & Carson (1985) and McGinty (1982). Like Eriksson & Pitman (1984) and Hempfling (1983), we have used only lateral approaches and have found them adequate. With a 0-degree arthroscope, difficulties in viewing the medial recess may occur. However, loose bodies hiding there can be dislodged into the central part of the joint with a hook or by external pressure.

It is impossible to say how many false negative arthroscopies we performed, but during an observation time of between 5 years and 5 months, only one patient has had a subsequent removal of loose bodies, and these might have formed in the meantime.

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