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EDITORIAL

Arthroscopic debridement of the knee for osteoarthritis

In 1934 Burman, Finkelstein and Mayer commented that "it was in the group of arthritic cases that we had the pleasant surprise of seeing a marked improvement in the joint following arthroscopy". This observation has since been confirmed by others (Jackson and McCarthy 1971; O'Connor 1973; Eriksson and Häggmark 1982). Livesley et al now report (page 922) that physiotherapy combined with arthroscopic lavage is more effective than physiotherapy alone.

In 1941, Magnuson reported "complete recovery of symptoms" in 60 of 62 joints, 41 of them knees, following open debridement. In 1959, Pridie described a method of resurfacing osteoarthritic knees by removing osteophytes and drilling exposed subchondral bone which yielded good results in 65% of patients (Insall 1967). Neither procedure is in general use today.

More recently it has been reported that arthroscopic debridement, a procedure similar to those described by Magnuson and by Pridie but performed arthroscopically, is followed by relief of symptoms in 60% to 80% of patients with osteoarthritis (Sprague 1981; Friedman et al 1984). The procedures included drilling (Richards and Lonergan 1984), resection of unstable meniscal segments (Jackson and Rouse 1982; Rand 1985), debridement of osteophytes and loose fragments of articular cartilage (Salisbury, Nottage and Gardner 1985; Bert and

Maschka 1989) and abrasion (Johnson 1986). These reports are so numerous and the results so consistent that they cannot be disregarded.

Arthroscopic debridement is now practised widely. There is some concern that its use may be excessive but we have much to learn before final judgement can be passed. In particular, we do not yet know the indications for operation, which procedures are most useful, how long the improvement will last or whether it is the arthroscopy and lavage or the debridement that brings relief; such questions are difficult to answer. The age and weight of the patient, the presence of osteophytes and torn menisci, the state of the patellofemoral joint and the presence or absence of varus or valgus deformity may all affect the outcome. The operation necessarily involves distending the joint with saline (which may have a low pH), and washing out particles of articular cartilage debris. It may be followed by a period of rest and perhaps a course of physiotherapy, even eight weeks non-weight-bearing if abrasion has been performed. Additional operative procedures may include meniscectomy, abrasion, drilling or excision of osteophytes in any combination. Add to this list the placebo effect of any surgical procedure and it is obviously difficult, even impossible, to conduct a trial that accounts for so many variables.

The indications for operation are difficult to define. Arthroscopy reveals osteoarthritis at a much earlier stage than clinical or radiological examination (Dandy and Jackson 1975; Lysholm, Hamberg and Gillquist 1987) and patients may undergo arthroscopy for the relief of an effusion or for mechanical reasons rather than for the symptoms of established osteoarthritis. Before the days of arthroscopy such patients would probably have

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undergone open meniscectomy (Dandy and Jackson 1975; Lotke, Lefkoe and Ecker 1981). Some patients, particularly elderly osteoarthritics, may undergo arthroscopic treatment because conservative methods have failed but their symptoms are not yet severe enough to warrant joint replacement. No treatment was available for such patients before arthroscopy.

Despite these difficulties of interpretation, some conclusions can be drawn from results reported so far. Removing unstable meniscal segments is beneficial (Jackson and Rouse 1982; Rand 1985) but removing more than the unstable segment is harmful (Jones, Smith and Reisch 1978; Lotke et al 1981). Knees with varus or valgus deformity do less well than those without deformity (Salisbury et al 1985). Old patients do less well than young patients, and knees with early degenerative disease do better than those with advanced disease (Richards and Lonergan 1984). The longest follow-up to date is that of Bert and Maschka (1989), who found that 66% of patients had good or excellent results five years after arthroscopic debridement, but more long-term studies are needed. There is no evidence that abrasion offers any advantage over other techniques (Bert and Maschka 1989).

Arthroscopic debridement should not be the first operation for every osteoarthritic knee. Such an approach would seriously stretch the resources available for health care even if it could be supported theoretically. Young

patients with increasing varus deformity still need osteotomy, and debridement can do no more than delay definitive treatment. Extensively damaged joints in older patients still need replacement, and arthroscopic surgery will not help them.

On the other hand, arthroscopic debridement or lavage alone (Livesley et al page 922) appears to be useful in patients with little varus or valgus deformity and absent or slight radiological change, particularly if mechanical symptoms predominate or pain and effusion are out of proportion to the clinical and radiological signs. In these circumstances, the cautious removal of unstable meniscal and chondral flaps and loose pieces of articular cartilage, the excision of osteophytes from the intercondylar notch and the drilling of areas of exposed bone less than 1 cm in diameter may bring worthwhile relief for up to five years in 60% to 80% of patients.

In summary, arthroscopic joint debridement may help when conservative measures have failed. It is no substitute for conservative management, for osteotomy or for joint replacement. On the evidence available at present, the method is a useful adjunct to the conservative management of early osteoarthritis of the knee and we can only hope that it does not become a vehicle for misplaced optimism and thus run the risk of following the techniques of Pridie and Magnuson into orthopaedic history.

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