We have reviewed 30 patients who had been treated conservatively for acromioclavicular dislocation between 1979 and 1982 at an average of 12.5 years after the injury. All except one had a good outcome as did five others contacted by telephone. In all patients reviewed the acromioclavicular joint remained subluxed or dislocated.

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The treatment of acromioclavicular dislocation remains controversial although some randomised, prospective controlled trials have shown that the results of conservative treatment are better than those of operation (Larsen, Bjerg-Nielsen and Christensen 1986; Bannister et al 1989).

Operation has been advocated to restore the anatomy of the acromioclavicular joint since it has been thought that this could not be achieved by conservative treatment and would result in an unsatisfactory outcome. Numerous procedures have been developed but none has proved superior to conservative management. Operation carries a significant risk of complications and the internal fixation may require to be removed (Larsen et al 1986).

Conservative treatment does not restore the anatomy but allows patients to rehabilitate more rapidly (Galpin, Hawkins and Grainger 1985; Larsen et al 1986; Bannister et al 1989). A few studies have recorded good mid-term results for conservative treatment (Glick et al 1977; Bjerneld, Hovelius and Thorling 1983; Dias et al 1987), but have been too short to allow for the possible development of degenerative osteoarthritis.

We have reviewed the longer-term results of conservative treatment in a group of patients reported by Dias et al in 1987.

**PATIENTS AND METHODS**

Between 1979 and 1982, 46 patients with acromioclavicular dislocation were treated conservatively at the Leicester Royal Infirmary. The injuries were all initially classified as Allman grade III (Allman 1967) and corresponded to type III of Rockwood’s classification (Rock-wood 1984). None of the dislocations was of the less common types IV, V or VI. Treatment was with a broad arm sling for three to five weeks followed by mobilisation.

Dias et al (1987) reviewed 44 of these patients five years after the injury and of these 42 had a good result and two had a fair outcome.

We have reviewed 30 of these patients by clinical examination and interviewed a further five by telephone at an average follow-up of 12.5 years (10.5 to 14). Of the remainder, four are dead, four could not be traced and one was excluded because he now suffers from rheumatoid arthritis. Of the 30 patients seen, 25 were male and five female; their average age was 43 years (28 to 73). The injury was caused by contact sports in 15, road-traffic accidents in nine and falls in six.

When reviewed the patients were asked about shoulder discomfort, weakness, stiffness and appearance. Details were collected about difficulties with carrying, sporting activities and occupation; this was the only information available from interview by telephone.

Examination looked for clinical deformity, tenderness and ballotability of the acromioclavicular joint. We assessed the range of movement of the shoulder using a goniometer and the incidence of pain on resisted abduction and distraction. Standard anteroposterior radiographs of both acromioclavicular joints were obtained with 15° cephalad tilt as described by Zanca (1971). The position of the acromioclav-
viclar joint was reviewed and any deformity of the distal end of the clavicle or ossification of the coracoclavicular ligament was noted.

RESULTS

Subjective assessment showed that the patients had been little troubled by their injury and none had sought further medical advice. Of those seen at clinical review 14 had not experienced discomfort in the area of injury but 15 reported mild and one moderate symptoms; three patients disliked the cosmetic appearance. None had changed their job or given up any sporting activities because of the injury and 60% of those working were performing heavy manual tasks. Of the five patients interviewed by telephone three had no symptoms and two only mild discomfort. Since their previous review the degree of discomfort experienced had remained the same in most of them but the patient with moderate pain had deteriorated and two with moderate symptoms now had only mild pain.
On examination one patient, aged 67 years, had tenderness over the acromioclavicular joint and a decreased range of movement at the shoulder. He had similar symptoms and signs on the opposite side without a history of trauma. A deformity was noted in 24 patients but this was obvious in only eight. All five women had a mild deformity but this did not concern them. A ballotable joint was present in 14 patients; all had movement in the anteroposterior plane and in 12 vertical displacement could also be achieved. Not all the patients with obvious deformity had ballotable joints and neither deformity nor ballotability correlated with discomfort. No patient had distraction pain or pain on resisted abduction.

As assessed by the Imatani evaluation system for acromioclavicular dislocations (Imatani, Hanlon and Cady 1975), 14 were excellent, 15 good and one fair. Radiographs showed that the acromioclavicular joint remained dislocated in 17 patients and had improved to subluxation in 13. The shape of the distal clavicle was normal in only two patients; there was expansion in 20 (Fig. 1) and atrophy in eight (Fig. 2). Expansion was seen in both subluxed and dislocated joints whereas atrophy occurred only after complete dislocations. Ossification was present around the distal clavicle, usually of the coracoclavicular ligaments, in 21 patients and was marked in nine (Fig. 3). Major ossification was particularly common in subluxed joints with expansion of the distal clavicle; this probably explains why not all patients with an obvious deformity had a dislocated joint. Ossification may increase stability and lessen the likelihood that the joint would be ballotable. Radiological appearances had not changed significantly since the five-year review.

DISCUSSION

No clinical deterioration had occurred in this group of patients since their previous review despite the deformity of the acromioclavicular joints, further supporting the case for the conservative management of type-III dislocations. Although anatomical reduction was not obtained, adequate functional adaptation was achieved. Atrophy of the distal clavicle occurred only in those with completely dislocated joints and ossification of the coracoclavicular ligaments was less marked in these. The appearance of these joints was very similar to that seen after resection of the distal clavicle and the clavicle may atrophy spontaneously to achieve the same result. Both patterns of change were compatible with excellent function.

Our findings support those of the randomised, prospective controlled trials which have shown conservative treatment to be superior to operation for acromioclavicular dislocation. It allows earlier return to work and sport and a good long-term outcome (Galpin et al 1985; Larsen et al 1986; Bannister et al 1989).

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

References