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SURGICAL TREATMENT OF ACROMIOCLAVICULAR DISLOCATION

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The results of surgical treatment of 17 patients with complete acromioclavicular dislocation are presented. The operative procedure described is technically easy, gives good results, has few complications, and is not associated with the complications which often follow operations using metallic fixation devices. A second operation to remove fixation devices is avoided.

Key words: injury; dislocation; acromioclavicular joint; operative treatment

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It is generally thought that complete dislocation of the acromioclavicular joint with disruption of the coracoclavicular and of the acromioclavicular ligaments should be surgically treated, whereas contusion and subluxation show good results with non-operative treatment (Sage & Salvatore 1963). The surgery usually consists of anatomical reduction and reconstruction of the acromioclavicular ligaments with or without internal fixation of the joint.

In this paper a simple operative technique without the use of metallic fixation devices, either in the joint or for the stabilization of the coracoclavicular ligaments, is described and the results discussed.

PATIENTS AND METHODS

Between 1965 and 1973, 17 patients with complete dislocation of the acromioclavicular joint were operated on in Telemark Central Hospital's surgical and orthopaedic departments.

The same operative procedure, a modification of Watkin's method (1925), was used in all patients: A slightly curved incision is made under the lateral portion of the clavicle, the acromioclavicular joint is exposed and freed from interposed capsule and ligaments. Approximating sutures are inserted, but not tied until after the reduction of the clavicle. The pectoralis major muscle is divided at its clavicular origin and the disrupted coracoclavicular ligaments are exposed. The ends of the ligaments are identified and approximating sutures are inserted but not tied until later. The most important step in the operation is to maintain an anatomic reduction of the clavicle. For this purpose we have used a twice-doubled strong nylon suture, 0.40 mm. The suture is attached around the coracoid process and the clavicle, and then the clavicle is reduced. With the clavicle in exact anatomical position the four nylon sutures are tightened and tied. The sutures in the coracoclavicular ligaments are tied, and then the wound is closed. The arm is placed in a sling, and the patient begins careful exercises on the first postoperative day.

All the patients were males with an average

age of 36 years (range 17–57 years). In eleven patients the left and in six the right shoulder was injured. Six patients were injured in traffic accidents, five in sports accidents, three had fallen off a ladder, two had fallen down stairs, and one patient fell down a slope. None of them had other bone or soft tissue injuries. Sixteen patients were operated on within 1 week of injury and one after 17 days.

RESULTS

All the 17 patients were followed up, the mean observation period being 52 months. Thirteen were examined clinically and four answered a questionnaire. One patient developed a postoperative wound infection which healed with the use of antibiotics in the course of 17 days. The nylon thread was not removed.

Thirteen patients were completely free of symptoms, the shoulder being as good as before injury. Two patients felt that their arm was somewhat weaker than before but otherwise had no complaints. Two other patients were not satisfied with the result because of pain and weakness. Neither of these two patients, however, came to the follow-up examination. The thirteen patients who were clinically examined had no symptoms of pain, weakness or loss of motion. The two patients who complained of moderate weakness had no signs of muscle atrophy or loss of muscle power. Fifteen patients stated that they were able to do the same amount of physical activity as before the injury. There was one case of suture suppuration, 4 years after operation, which ceased after the nylon sutures were removed. Another patient had an ugly scar because of keloid formation.

DISCUSSION

Complete dislocation of the acromioclavicular joint is relatively uncommon. However, the increasing number of traffic and industrial accidents, as well as the increasing participation in sport, has led to a corresponding increase in the incidence of the injury (Seitz et al. 1972). Clinical diagnosis is not difficult provided the possibility is kept in mind. X-ray examination of both shoulders with "hanging" arm is usually helpful, and may also show other skeletal injuries in the same area. In the event of multiple injuries, one must be alert to the possibility of an acromioclavicular joint dislocation as it can easily be overlooked.

We consider that complete dislocation with injury to the acromioclavicular ligaments and total separation of the coracoclavicular ligaments should be operated on as soon as possible after the injury.

The technique presented, with no implantation of metal, is simple and gives good results. It is essential that the clavicle is anatomically reduced, the torn ligaments are reconstructed, and the joint stabilized until the ligaments have healed.

The use of temporary metallic internal fixation has been shown to have several disadvantages because of complications from the fixation material, e.g., migration of the fixation pins, bone erosion, re-dislocation due to failure of the metallic fixation devices, development of acromioclavicular arthralgia, a greater risk of infection, and the necessity of a second operation to remove the fixation material (Weaver & Dunn 1972).

CONCLUSION

A technically simple procedure is described which has few complications, gives good results and is not encumbered with the complications often associated with temporary metallic fixation, including the necessity of a second operation for removal of the fixation devices.

The author recommends surgical treatment of complete dislocation of the acromioclavicular joint. The operation

should be performed as soon as possible after the accident.

REFERENCES

Sage, F. P. & Salvatore, J. E. (1963) Injuries of the acromioclavicular joint. A study of results in 96 patients. *Sth med. J. (Bgham, Ala.)* **56**, 486–495.

Seitz, H. D., Kuner, E. H. & Springorum, H. W. (1972) Erfahrungen mit der operativen Behandlung von Luxationen im Schultergelenk. *Bruns' Beitr. klin. Chir.* **219**, 323–327.

Watkins, J. T. (1925) An operation for the relief of acromioclavicular luxations. *J. Bone Jt Surg.* **7**, 790–792.

Weaver, J. K. & Dunn, H. K. (1972) Treatment of acromioclavicular injuries, especially complete acromioclavicular separation. *J. Bone Jt Surg.* **54**-A, 1187–1194.

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