Acromioclavicular joint injury in young athletes and fast surgical repairing

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Introduction
The most common cause of acromioclavicular injuries in athletes is falling on the point of the shoulder with the arm on the side, or landing on the ground with an opponent on the shoulder top, especially in rugby, wrestling, judo, or other sport activities in general. With damage the supporting ligaments of acromioclavicular joint the muscles pull the lateral clavicle into a dislocated position. The treatment for grade 2 and grade 3 acromioclavicular injury is subject of controversy about operative and nonoperative approaches regarding the choice among many surgical techniques, non-surgical methods, or conservative treatment.

Methods
In the treatment of acromioclavicular separations we prefer surgery, and use it in all cases of grade 3 injuries, in some cases of grade 2 injuries, and in chronic cases of painful shoulder. In this paper we will report our experience with original surgical technique to repairing acromioclavicular separation. Since 1986, 61 acromioclavicular separations appeared like a sports injuries, have been treated with this technique: 55 cases of superior separation (7 cases of grade 2 injury, and 48 of grade 3 injury) and 6 cases of posterior separation. There were 52 acute injuries and 9 chronic cases. 54 men and 7 women, from 18 to 31 years old.

The joint is approached along the superior clavicle. The lateral end of clavicle is resected for 5-8 mm. Three holes are drilled at a distance of about 1 cm in, from each of the anterior and posterior edges of the outer third of clavicle (Fig 1). The clavicle is fixed with a thread suture through these holes (absorbable coated number 2 Vicryl), primarily by its anterior edge to coracoacromial ligament below (Fig.2). The detached trapezius muscle is fixed with the holes on the posterior edge of the clavicle. The sutured superior acromioclavicular ligament contributes to the stability of the clavicle. The skin was closed with subcuticular suture. We started immediately with physical therapy. During I-st week after operation with active exercises for elbow and passive exercises for the shoulder up to 80º. During II-nd week with active elevation of shoulder up to 80º. During III-rd week we continue with active elevation of the shoulder up to full range of movements.

Results
Analyzing the length of physical therapy, we noticed its dependence only on the age of the patient, and not on the chronicity of the injury. With the patients up to 26 years old we attained the best results: the full range of movements and painless shoulder still after 2 weeks of surgery. They returned to sport training at 3 weeks after surgery and to full sport activities at 5 weeks. No alteration in clavicular position occurred after the surgery by any patient.

Discussion / Conclusion
This original technique for acromioclavicular separations originates in 1986. It represents a method for stabilizing the lateral end of the clavicle only with thread suture to acromioclavicular ligament, creating an elastic fixation. This technique was for the first time presented in Belgrade in 1988 at East and West combined Orthopaedic Meeting. It was presented on IV International Conference on Surgery of the Shoulder in New York, in 1989, and published in a monography M.Post, B.F. Morrey and R. Hawkins (ed), Surgery of the Shoulder, Mosby Year Book, Chicago, 1990. On my extensive experience with this technique I can conclude that it is an universally applicable technique with all types und grades of acromioclavicular injury. Equally good in acute and chronic cases. Without coracoclavicular ligament repair. Without repeat surgery to remove the implant. With secure clavicular fixation and stabilization. With early return to sport activities and excellent shoulder condition.

References