INTRODUCTION
The traditional treatment method of first traumatic shoulder dislocation by internal rotation immobilization has been shown to be ineffective in lowering the incidence of recurrent dislocation. At two year follow-up, the rate of recurrent dislocation was the same for shoulders immobilized 3 to 4 weeks in internal rotation and those using no immobilization device [1]. An anterior labral tear called the Bankart lesion is present in most traumatic shoulder dislocations of patients under the age of thirty. MRI studies assessing the position of the labral tear after shoulder dislocation have shown the labrum displacement from the anatomical position is less when the shoulder is in external rotation and greater when the shoulder is in internal rotation [2]. Preliminary clinical data suggest that immobilization of a first traumatic shoulder dislocation in external rotation can be effective in lowering the incidence of recurrent shoulder dislocations. In a recent study of Itoi et al. [3], patients with first shoulder dislocation were assigned either to conventional immobilization in internal rotation (IR) or to a method of immobilization in external rotation (ER). The recurrence rate was 30 per cent in the IR group and 0 per cent in the ER group, at a mean of 15.5 months follow-up. The purpose of the present study was to ascertain if the immobilization method via external rotation bracing could lower the incidence of recurrent dislocation after a first traumatic shoulder dislocation in a young, physically active population.

METHODS
In an IRB approved prospective study which began in January 2004, males (age range 17-29) who sustained first traumatic shoulder dislocation, were randomized to be treated for four weeks either using a traditional internal rotation brace (40 per cent of the subjects) or a new device which immobilizes the shoulder at 15 to 20 degrees of external rotation (60 per cent of the subjects). After four weeks of immobilization, subjects were treated according to a standard physical therapy protocol. Follow-up of subjects was done at 2 weeks, 6 weeks, 12 weeks, 6 months and one year post dislocation. Subjects considered to have clinically stable shoulders returned to full activity after three months. Differences in outcome between treatment groups were assessed by the chi square test.

RESULTS
Thirty nine subjects participated in the study. Thirty (77 per cent) of them were soldiers. Twenty four subjects were treated with external rotation braces (Figure 1). All but one fully complied with the treatment protocol. At follow-up of between 4 to 28 months, eight subjects (33 per cent) had sustained a new documented dislocation (Figure 2). Fifteen subjects were treated with an internal rotation brace. All of them complied with the treatment protocol. Five (33 per cent) out of fifteen sustained a new documented dislocation. No statistical difference (p=1.0) was found between the instability rates of the two treatment groups.

DISCUSSION
Compliance with treatment in the study was excellent although subjects reported that initially it was not easy for them to accommodate to the external rotation brace. The follow-up in this study is short, but it already indicates that external rotation bracing may not be effective in preventing recurrent dislocations of the shoulder. The difference between the findings of the present study and the observations of Itoi can be attributed to several factors. The subjects in this study were predominantly combat soldiers and the vigorous physical activity they performed after the dislocation treatment tested their shoulder stability to the utmost. Unlike the participants in the Itoi study who were of mixed gender and in the age range from 17 to 84, the subjects in the present study were exclusively males of uniformly young age. The probability of a presence of a Bankart lesion in an older patient with a first shoulder dislocation is low. The shoulders of the patients in the present study were immobilized at 15-20 degrees of external rotation which is more than in the previously reported study (10 degrees). Based on the MRI labral position study of Itoi, the immobilization in greater external rotation which we used would be expected to increase the effectiveness of the brace treatment. It did not. The present study indicates that even in a short-term follow-up the technique of immobilizing a first dislocation in external rotation was not effective in lowering the incidence of recurrent shoulder dislocations in a young, physically active population.

Figure 1. Soldier with external rotation shoulder immobilizer

Figure 2. CT arthrogram of the left shoulder of a patient who dislocated after being treated in external rotation bracing. Arrow shows displacement of the anterior labrum

REFERENCES

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