Arthroscopic versus conservative treatment of first anterior dislocation of the shoulder in adolescents

Gigis I, Heikenfeld R, Kapinas A, Listringhaus R, Godolias G (2014) Arthroscopic versus conservative treatment of first anterior dislocation of the shoulder in adolescents. Journal of Pediatric Orthopedics 34(4):421–425. doi 10.1097/BPO.0000000000000108. (Abstract prepared by Amy Lean)

BACKGROUND

There is some debate regarding best practice for management of primary traumatic shoulder dislocation in adolescents. It is well documented in the literature that conservative treatment often results in further episodes of shoulder instability in the adolescent population (up to 95% incidence). No studies to date have investigated the outcomes of conservative versus surgical intervention following first time traumatic shoulder dislocation in adolescents.

AIM

To investigate if early surgical stabilisation following primary traumatic anterior shoulder dislocation can reduce the rate of re-dislocation in adolescents.

METHODS

Seventy-two participants aged between 15 and 18 years of age (mean 16.6 years, 27 male and 38 female [who completed the study]) with a recent primary traumatic shoulder dislocation requiring manual reduction were included. Following clinical examination individuals were advised if early surgical (arthroscopic) intervention was recommended, an option that was offered on a voluntary basis. A total of 43 participants consented to surgical intervention leaving 29 participants in the conservative group. Both post-operative and conservative rehabilitation followed the same protocol of immobilisation and passive movements progressing to active movements and a strengthening programme. Participants were reassessed annually for a total of three years.

RESULTS

Seven participants (9.7%) were lost to follow-up. Twenty-four participants suffered further dislocation of the treated shoulder within the three year follow-up period, 5 (13.1%) from the surgical group and 19 (70.3%) from the conservative group, respectively. The difference in number of re-dislocations between the two intervention groups was statistically significant ($p < 0.05$).

CONCLUSION

Early arthroscopic stabilisation following primary traumatic shoulder dislocation in the adolescent population leads to a reduction in subsequent episodes of shoulder instability. These findings suggest that surgical intervention should be offered as a treatment option early in rehabilitation to facilitate an optimal functional outcome.

COMMENTARY

The shoulder is the most commonly dislocated joint in the body, with approximately 95% of dislocations being anterior in nature (Aronen and Regan 1982, Cutts et al 2009, Lampert et al 2003, Li et al 2013). For traumatic injury, the mechanism is often a fall onto an outstretched arm, or impact with the shoulder positioned in abduction and external rotation (Cutts et al 2009, Lampert et al 2003). There is debate as to whether conservative or surgical intervention is the best approach following first time traumatic shoulder dislocation. This is due to the high reported rate of recurring dislocation following conservative treatment, especially in patients under 20 years of age where risk of recurrent instability has been documented to be as high as 95% (Cutts et al 2009). Given the expected increased risk of recurrent shoulder dislocation with conservative treatment, many authors advocate for surgical intervention either as soon as possible, or following a repeat episode of instability (Aronen and Regan 1982, Cutts et al 2009, Lampert et al 2003).

The authors of the current study have filled a void in the evidence surrounding primary management of shoulder dislocation by providing a study comparing the rate of repeat injury following surgical and non-surgical intervention. Due to the nature of the treatment options it would have been unethical to have randomly allocated participants into intervention groups as patients needed to be given the option to decline surgical intervention if they saw fit. Also, as surgery was one of the interventions it was impossible for participants or assessors to be blinded to group allocation. In view of these points, the authors created a well thought out and effective study, with an adequate follow-up period of three years to determine which approach produced superior results for adolescents.

A number of years ago, Aronen and Regan (1982) associated the high rate of reported recurrent dislocation with poorly developed rehabilitation programmes or poor adherence to an exercise programme. In their study, 20 individuals with primary anterior shoulder dislocation were prescribed a structured well-documented rehabilitation protocol and were followed for three years. The authors reported a 75% success rate following conservative treatment and concluded that future studies should report lower rates of failure of intervention if more rigid programmes were designed and adhered to.

The rehabilitation protocol has been outlined in the current study; however as described, it does not provide adequate information for an identical programme to be used in the future as it lacks information on the dosage of exercises. The authors did document employing the same exercise programme for both the conservative and post-operative treatment groups, implying that any difference in outcome was likely to be strongly influenced by the addition of surgery. Earlier publications on shoulder rehabilitation support the authors' hypothesis that conservative management will lead to higher rates of repeat episodes of shoulder instability (Cutts et al 2009).

The study by Gigis et al (2014) provides evidence that within the adolescent population early surgical intervention leads to improved shoulder stability when compared to conservative management. As the reported difference in recurrent dislocation is statistically significant it offers clinicians an evidence base with which they can inform patients of their options to the best of their knowledge, especially if the physiotherapist is the patient's primary health care professional following shoulder dislocation. However, clinicians must take care with the evidence provided by this study as the study population comprised adolescents meaning the findings may not be applicable to older or younger demographics.

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