A new drug free technique for reducing anterior shoulder dislocations

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Abstract

Five cases of anterior shoulder dislocation are reported. The dislocations were reduced quickly, painlessly and without the use of drugs using the ‘Cunningham technique.’ The practice and theory of the technique are described. The ‘Cunningham technique’ is a useful single operator method of reducing anterior shoulder dislocations. Further research is being undertaken to reproduce the results in a larger patient group and also to examine how easily the technique can be taught.

Key words: shoulder dislocation, reduction techniques.

Introduction

Anterior shoulder dislocation is commonly presented to emergency departments, with many different methods currently employed in reduction of the shoulder. The most widely used are Kocher’s, Hippocratic (modified), Stimson, Milch scapular manipulation and external rotation. These methods work using traction, leverage and scapular manipulation principles. These methods can be performed drug free, but are usually combined with sedation and analgesia in order to affect muscle relaxation, and facilitate reduction. There is little in the literature on the success rate of drug free attempts, and few articles describing formal drug free techniques. In the ED, conscious sedation is the intention, but the level of consciousness required to successfully reduce a shoulder is often deep sedation/general anaesthesia. Again, there is no real data on either the level of sedation used, or the success rates achieved using conscious sedation.

Although there are a number of factors (rotator cuff/pectoral girdle muscles spasm) keeping the humeral head out of the glenoid fossa once dislocation has occurred, it is hypothesized that spasm of the biceps brachii muscle is the most important. Therefore, relaxation of the biceps with the humerus in the correct position should allow reduction to occur. The suggested technique works by a combination of correct positioning and specific biceps brachii relaxation. There is no pulling involved and no muscle power on the part of the operator, this would in fact be counterproductive — causing spasm.

Five cases are described in which a new technique was employed, (Tables 1 and 2) concentrating on positioning and specific muscle relaxation. All were discharged quickly from the ED following their reduction, and those who had not received drugs prior to arrival were able to walk to the X-ray department for post reduction films.
Methods

A pilot study was carried out of five consecutive patients that presented to The Newcastle Mater Misericordiae Hospital between 18 September 2002 and 15 January 2003. All five patients were treated using the ‘Cunningham technique.’

Results

The details of the five patients are shown in Table 3. No medication was used in the ED, although one patient had morphine administered previously. The time to discharge ranged from 30 min to 75 min, with the median time being 60 min. All patients were satisfied with their outcome. (Table 3).

Discussion

This is a small pilot study of anterior shoulder dislocations which were reduced using the ‘Cunningham method.’ All reductions were performed using a single operator and without the use of drugs given in emergency. Previously ‘difficult’ reductions were not noticeably harder to reduce.

All the patients were positive about their experience with the technique compared to previous reductions, and all were able to be discharged promptly from the department.
There are obvious dangers in sedating/anaesthetizing non-fasted patients (cardiovascular and respiratory depression, impairment of airway maintenance) and this also renders the patient confused. There is a requirement for protracted patient monitoring while sedation wears off. This results in extensive staff utilization and prolongs the length of stay in the ED. At least two medical staff are normally required for a reduction and there is the risk of inexperienced junior staff taking on the procedure.

As there is only one operator using the new technique it is impossible to say how operator dependent, ‘teachable’ and replicable the method is.

A further study is being undertaken to ascertain:
1. The impact of a drug free method on length of stay in the ED.
2. The impact on patient satisfaction.
3. The ‘teachability’ of the technique to a broad spectrum of ED medical staff.

The ‘Cunningham technique’ appears to be a useful single operator method that does not require the use of drugs, monitoring and multiple staff members and delivers a pain free, atraumatic reduction for the patient. Proficiency in this technique could be a useful addition to the emergency physicians options for shoulder relocation.

Table 3. Pilot study of five patients treated using the ‘Cunningham technique’

| Case 1 | 57-year-old male with recurrent dislocations of left shoulder, previously required general anaesthesia for reduction. Atraumatic dislocation occurring 1 h prior to presentation. Reduction took 3 min and was painless. No drugs were administered. Discharged after 50 min. |
| Case 2 | 23-year-old male with right shoulder dislocation sustained by a fall onto point of shoulder while playing soccer. Given 10 mg of morphine IV by ambulance officers en route. One previous dislocation on the same side which was reduced in the ED with the use of conscious sedation, patient had stayed in department for 8 h on previous occasion. Clinically, this patient had a large amount of spasm and despite being in severe pain on arrival, an analgesic effect was obtained by correct positioning and gentle downwards weight on the arm. Reduction took 10 min, was painless, and occurred without any perceptible ‘clunk’. No drugs were administered in the ED. Discharged after 75 min. |
| Case 3 | 31-year-old female with atraumatic dislocation of right shoulder following an external rotation and abduction movement of the arm 1 h earlier. The shoulder had dislocated five times previously, requiring general anaesthesia each time. Reduction took 5 min and was painless. No drugs were administered. Discharged after 60 min. |
| Case 4 | 13-year-old male sustained a right anterior shoulder dislocation as he ‘slipped off the tackle’ onto the ground while playing rugby. The joint had been out for 1 h and was reduced painlessly in less than 1 min. No drugs were administered and the patient had no previous history of injury to the joint. Discharged after 30 min. |
| Case 5 | 17-year-old male sustained a right shoulder dislocation when falling from a chair and forcing the arm into abduction 2 h earlier. He had previously dislocated the same side and this had been reduced using pethidine and midazolam. No drugs were administered and a painless reduction was performed in 3 min. Discharged after 30 min. |

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References