The acute first-time anterior shoulder dislocation (AFASD)
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Chapter 7

Questionnaire reveals variations in management of acute first-time shoulder dislocations (AFASD) in the Netherlands.

Questionnaire reveals variations in the management of acute first-time shoulder dislocations in the Netherlands

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Abstract

Aim:
To collect information about the management of patients with acute first-time shoulder dislocations by (orthopaedic) surgeons in the accident and emergency departments of Dutch hospitals.

Design: Questionnaires were sent to 131 (orthopaedic) surgeons of 74 Dutch hospitals.

Method:
We enquired whether patients with acute first-time shoulder dislocation are managed according to protocols in accident and emergency departments; which radiographs are deemed necessary before and after reduction; which reduction methods are generally performed, and what kind of pain relief or sedatives are generally administered. Furthermore, we enquired into the method and duration of immobilization after reduction.

Results:
The response rate was 73%. Sixty-five percent of the hospitals are used to managing acute first-time shoulder dislocation according to protocols. Making prereduction and postreduction radiographs is standard practice in almost all hospitals. The most favoured methods of reduction are those according to Kocher and Hippocrates. In 85% of the cases sedatives are administered before reduction, and in addition to that systemic analgesia is administered in 30%, whereas intra-articular analgesia is preferred in 25% of cases.

Conclusion:
Apparently, a protocol for management of acute first-time shoulder dislocation is not standardly available in all hospitals. On the basis of current literature and the results of this questionnaire it may be useful to establish a guideline for diagnostic procedures and the management of acute first-time shoulder dislocation in the accident and emergency department.

Keywords: Acute first-time shoulder dislocation, Netherlands, Questionnaire
Introduction
Acute first-time shoulder dislocations (AFSDs) are frequently seen in accident and emergency departments (A&Es). Shoulder dislocations comprise approximately 10% of all shoulder traumata, and approximately 50% of all dislocations concern the shoulder. Incidence rates of 8.2 to 24 per 100,000 inhabitants per year are mentioned in the literature, of which 10 cases are first-time shoulder dislocations per 100,000 inhabitants per year.\textsuperscript{1-5} Evidently, a standard procedure for managing this kind of injury is still lacking. The aim of this study was to record how this particular trauma is currently being managed by (orthopaedic) surgeons in the clinical setting of Dutch A&E's. The results of the questionnaires are outlined in this article.

Material and Methods
In October 1998 questionnaires were sent to 67 surgeons and 64 orthopaedic surgeons in 74 Dutch hospitals (eight university hospitals) regarding the acute care, treatment and after-treatment of acute first-time shoulder dislocations in the Netherlands. Of the 74 hospitals we wrote to, 36 are teaching hospitals for surgery, 20 are teaching hospitals for orthopaedics, 31 are non-teaching hospitals for surgery, and 44 are non-teaching hospitals for orthopaedics. In 57 hospitals both surgeons and orthopaedic surgeons received a questionnaire. Only those departments were selected that are actively involved in trauma care.

Results
We received completed questionnaires from 54 out of 74 hospitals, which is a response rate of 73%. Seven university hospitals and 47 peripheral hospitals responded, the latter comprising 15 teaching hospitals for surgery and orthopaedics, 17 teaching hospitals for surgery, two teaching hospitals for orthopaedics, and 13 non-teaching hospitals for surgery or orthopaedics. On average, the respondents manage 13000 trauma patients per year per hospital in A&E. The response of (orthopaedic) surgeons to the questionnaire was 65% (85/131).

Questionnaire
The questions were answered as follows:

1. How many patients with shoulder dislocations present in A&E per year?
Some 42 of the 85 respondents (49%) answered this question. Estimated amounts average 57 per year, ranging from 11 to 200.

2. What percentage of these shoulder dislocations is primary?
A total of 43 of the 85 respondents (51%) answered this question. The estimated percentage of first-time shoulder dislocations is approximately 76%.
3. Is a protocol regarding the management of shoulder dislocations available in A&E? In 35 out of 54 hospitals (65%) a protocol is available for the management of acute shoulder dislocations in A&E.

4. How do most shoulder dislocations occur? According to 72 of the 85 respondents (85%) most shoulder dislocations occur during sports activities.

5. Which reduction methods are preferred? According to 31 of 82 respondents (38%) the preferred primary reduction method is the Hippocrates method: applying traction to the arm whilst the heel of the surgeon’s foot is placed in the axilla. Thirty respondents (37%) preferred the Kocher method (lever technique whereby the arm is successively rotated externally, brought in adduction, and then rotated internally). The Stimson method (hanging arm), and the elevation method are preferred as a primary technique by ten and eight respondents, respectively.

6. Are analgesia and/or sedatives being administered prior to reduction? A total of 69 of the 83 respondents (83%) administer sedatives before reduction. Twenty-five of the respondents only administer sedatives, 26 administer systemic analgesia in addition to sedatives, and 18 administer intra-articular analgesia in addition to sedatives. Apparently, 14 respondents do not administer sedatives at all. Six out of 83 respondents only administer systemic analgesia, and three only intra-articular analgesia.

7. Are prereduction and postreduction radiographs necessary? According to 81 of 84 respondents radiographs must always be made before reduction, the remaining three indicated that radiographs are not necessary in the case of recurrent dislocations. All respondents (n=84) acknowledge the importance of postreduction radiographs.

8. Is immobilisation indicated following reduction? If so, how, how long, and does age have an influence on the length of immobilisation? All 84 respondents advise immobilisation after reduction of the dislocated shoulder. Of the respondents, 39 (46%) make no distinction between age with regard to length of immobilisation, 41 out of 84 respondents (49%) advise a short period of immobilisation for the elderly. A majority of 57% (47 out of 83) recommend immobilisation for the duration of 2 to 4 weeks. Thirty percent (25 out of 83) recommend only short immobilisation (up to 2 weeks).

9. Do you recommend physical therapy? Sixty-five percent of the respondents (54 out of 83) do not prescribe physical therapy as an after-treatment of AFSD; the others prescribe this during and after the immobilisation period.
10. Could you classify complications according to incidence rate in patients younger than 30 years, and in patients older than 50 years?
A pre-printed list of possible complications associated with this particular injury was enclosed with the questionnaire in order to record the complications successively. According to 44 of 77 respondents (57%) the most common complication in patients under the age of 30 is recurrent dislocation. The remaining complications are consecutively: greater tuberosity fracture, and glenoid fracture. Neurogenic lesion and rotator cuff tear are seen equally often. According to 35 of the 75 respondents (47%), greater tuberosity fracture is the most commonly seen complication in patients older than 50 year, whereas rotator cuff tear is in the second place, followed by glenoid fracture. Next are the neurogenic lesions and recurrences.

11. Is a stabilising operation indicated with acute first-time shoulder dislocations? If so, what are the criteria and would you opt for open or arthroscopic approach?
Seventeen out of 84 respondents (20%) assess that there is an indication for a stabilising operation with AFSD (seven surgeons, ten orthopaedic surgeons). Shoulder stressing sports and sports played on a professional level constitute the deciding criteria for performing an operation according to 50% of the respondents. Age is also an essential factor. According to the results of the questionnaire, 81% consider an age less than 30 years a valid criterion for contemplating a stabilising operation.

12. Case report: 17-year-old man, an active high-level handball player, and a 47-year old housewife, both with acute first-time anterior shoulder dislocation. What would you recommend following reduction?
Six out of 83 respondents (7%) managed the 17-year old handball player by performing an immediate arthroscopic stabilising operation. Some 68 of the other 77 respondents opted for conservative treatment in the first instance, while considering a stabilising operation only after a possible second or third dislocation (33/68 arthroscopic and 35/68 open). The remaining nine respondents reported that the decision is made by the attending surgeon or alternatively, the patient is being referred to an orthopaedic surgeon. No respondent would recommend an immediate operative treatment in the 47-year old housewife.
Discussion
Our objective was to collect information about the management of patients with an AFSD by (orthopaedic) surgeons working in accident and emergency departments (A&E's). This has not been conducted earlier in the Netherlands. The response of hospitals was relatively high (73%). Despite the fact that physicians receive questionnaires on a regular basis, the response of physicians was 65%. Unfortunately, as a result of incomplete data and the low response to the questions about the exact numbers of patients with AFSD in A&E's, and the incidence rates of AFSD, we were unable to make valid statements about these issues.

According to the respondents, shoulder dislocations generally occur during sports activities in 85% of the cases. On the whole this percentage is rather high. Data of the Dutch Consumer and Safety Foundation demonstrate that sport causes shoulder dislocation in young patients between 13 and 24 years in approximately 42-48% of cases.

In the elderly patient, shoulder dislocations are mainly attributed to a fall in the home. Protocols with regard to the management of shoulder dislocations are only available in 65% of the hospitals. Generally, more than one method of treatment may be found in protocols, particularly with regard to analgesia or sedatives and methods of reduction. The results of the questionnaire demonstrate that 84% of the respondents prefer to administer systemic sedation before reduction. Only three respondents administered nothing but intra-articular analgesia before reduction. Nevertheless, it was demonstrated in two prospective studies that compared with intravenously administered sedation, intra-articular analgesia is easy to administer, does not lead to complications, does not hinder reduction, and reduces the length of the treatment.6,7

All the respondents thought it necessary to make a postreduction radiograph. However, multiple studies show an over utilization of radiographs in AFSD.8-12 According to Roberts and Hedges the reason for obtaining radiographs after the reduction of an AFSD is based on traditional teaching in orthopaedics and emergency medicine.11 So, we can question ourselves how useful it is to make a postreduction radiograph on a patient with an AFSD.

All shoulders are immobilised after reduction; in 57% of the cases ranging from 2 to 4 weeks. In elderly patients, the length of immobilisation is shorter in order to reduce the risk of a stiff shoulder.13 However, the method and the length of immobilisation do not appear to have an effect on the risk of recurrence.14-18 On the other hand, the literature demonstrates a reduced risk of recurrence after 3 weeks of immobilisation followed by intensive exercise therapy.19

The results of the questionnaire indicate that 65% of the (orthopaedic) surgeons do not prescribe physical therapy after dislocation of the shoulder. A recurrence rate of 92% has been recorded in patients under the age of 20 years. Consequently, this is the single most important complication in this particular age group.8,15-18,20-24 The rotator cuff tear appears
to be the most important complication in elderly patients, whereas the likelihood of recurrence is reduced in this age group. Morbidity is prolonged as a result of rotator cuff tear.\textsuperscript{22,25,26} Apparently, the respondents recognise the implications of rotator cuff tear in elderly patients.

Several studies indicate that immediate arthroscopic stabilisation of AFASD appears to have promising results in young patients.\textsuperscript{23,24,27,28} The results of our questionnaire demonstrate that only a small percentage of respondents would perform an immediate stabilising operation in a young handball player after an AFASD. Not one respondent would consider performing an immediate stabilising operation in an older housewife.

The results of this study should be interpreted with due caution. As is the case with any questionnaire, respondents may answer according to what they assume the inquirer would like to hear. This makes the results of a questionnaire not fully reliable. The response was fairly good, although not 100%. Consequently, we cannot extrapolate the situation in the Netherlands from our findings. Furthermore, we have been working with patients who presented at Dutch A&E's, whereas sometimes patients are being treated in a primary care setting.

This study demonstrates a variation in response to the questionnaire. For example, only 35% of the respondents prescribe physical therapy. Furthermore, the study demonstrates that a protocol for management of AFSD is not available in all hospitals. However, the majority of respondents prefer systemic sedation before reduction, always make postreduction radiographs, and always immobilise the shoulder. Apparently, based on the literature to date, the prevailing management with regard to diagnostics and treatment of AFSD is inadequate in many hospitals.

It should be realized that on the basis of our review of the literature on AFSD and reduction techniques; we found only seven comparative study designs in the 58 articles reviewed.\textsuperscript{29} Three of these were randomised clinical trials (RCTs).\textsuperscript{30-32} Only one RCT compared two reduction techniques.\textsuperscript{30} The other two RCTs were conducted to compare the use of different analgesics while different reduction techniques are performed.\textsuperscript{31,32} We suggest that more RCTs and cost evaluation studies on this subject are needed to validate the findings on the management of treatment of the AFSD. This should be an important first step before the introduction of guidelines based on the results of good prospective randomized trials. In the meantime, we propose that we could start to make guidelines for the diagnostics and management of AFSD in the Netherlands based on the best level of current evidence-based practice.

Several organisations are currently involved in establishing these guidelines; the CBO (central policy unit), the Dutch Society of Orthopaedists, the Dutch Society of Surgeons, the National Society of General Practitioners, and representatives of sports physicians and physical therapists.
References

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