Journal Club Eastern Virginia Medical School
Therapy Article

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CITATION:
Sayegh F **Reduction of acute anterior dislocations: a prospective randomized study comparing a new technique with the Hippocratic and Kocher methods.** J Bone Joint Surg Am. 2009 Dec;91(12):2775-82.

I. **WHAT IS BEING STUDIED?**	
1. Study Objective	To compare the FARES technique (in "first time" shoulder dislocation patients) to hippocratic and Kocher methods in terms of efficacy, safety, and intensity of pain felt by patient during reduction.
2. Study Design	Single center, prospective randomized control trial of 173 patients from 9/2006-6/2008
3. Inclusion Criteria	First time traumatic anterior shoulder dislocation with or with our associated fracture of greater humeral tuberosity diagnosis confirmed with physical exam and X-ray
4. Exclusion Criteria	Dislocation with 3 or 4 part fracture of proximal humerus, duration of dislocation greater than 24 hours, intoxication, use of analgesics or muscle relaxants prior to reduction attempt
5. Interventions Compared	FARES method, Hippocratic method, or Kocher method for shoulder reduction reductions done without sedation, anesthesia, or pain control by 1st and 2nd year ortho residents

6. Outcomes Evaluated	Efficacy of reduction, duration of reduction maneuver, patient perception of pain, and complications following reduction
II. **Are the results of the study valid?** Did experimental and control groups begin the study with a similar prognosis (answer the questions posed below)?	
1. Was the assignment of patients randomized?	Patients were randomized based on tables of computer generated random numbers
2. Was randomization concealed (blinded)?	No, based upon study, there would be no way to blind the randomization The data collection was also not blinded, as the clinicians who performed the reduction also gathered the data from the patient
3. Were patients analyzed in the groups to which they were randomized?	Yes, and there were comparable numbers of patients in each group, (FARES 53, Hippocratic 51, Kocher 50)
4. Were patients in the treatment and control groups similar with respect to known prognostic factors?	Yes, differences in compared demographics of age, sex, presence of fracture, mechanism and time interval between injury and attempt at relocation were not statistically significant
III. **Did experimental and control groups retain a similar prognosis after the study started (answer the questions posed below)?**	
1. Were patients aware of group allocation?	Uncertain. Authors did not describe patient consent process and patients may have been blinded to the specific technique used for reduction.
2. Were clinicians aware of group allocation?	Yes. This would be hard to blind.

3. Were outcome assessors aware of group allocation?	Yes, the clinicians who performed the reduction also interviewed the patient to obtain the demographic data, time intervals and patients perception of pain. This data could have been collected by a blinded data assessor
4. Was follow-up complete?	No. There was no follow up beyond the initial clinical encounter. Residual pain, complications associated with technique could have been missed.
IV. What were the results? Answer the questions posed below	
1. How large was the treatment effect? (Difference between treatment and control group).	Efficacy of Reduction: FARES - 88.7% success rate Hippocratic - 72.5% success rate Kocher - 68% success rate p value - 0.033 Reduction Time: (min) FARES - 2.36+/- 1.24 Hippocratic - 5.55 +/- 1.58 Kocher - 4.32 +/- 2.12 p valure- <0.001 Visual Analog Scale Pain Score: FARES - 1.57+/- 1.43 Hippocratic - 4.88+/- 2.17 Kocher - 5.44+/- 1.92 P value - <0.001
2. What was the estimated treatment effect at a 95% confidence interval? (Precision)	efficacy - p value 0.033 Time - p value <0.001 Pain - <0.001

V. **Will the results help me in caring for my patients? (Applicable?)**	Yes, If we are able to have faster and less painful shoulder reductions without sedation this would be overall better care for the patient. One could avoid risks of procedural sedation, the need for a second provider for sedation, improve patient throughput time, and decreased total time of shoulder dislocation
1. Were the study patients similar to my patient?	Yes, adults with traumatic shoulder dislocations. These were all first timers. Typically a large percentage of these patients have previous dislocations. Same results may not be applicable to those with frequent or repeat dislocations.
1. Were all clinically important outcomes considered?	Yes, time to reduction, VAS pain score and overall reduction times very important. For the most part. I think there is some element of provider preference and skill with particular methods. One method that is successful with one provider may be less successful and in turn more painful for another provider.

Limitations

There is a large amount of bias in this study

1- the clinical providers that performed the reduction also collected the data. Some of the data was objective numbers (success of reduction and time interval), but the perception of pain by the patient is subjective and when you are asked by the person who just performed the procedure, it is a concern that the patient may not be objective/truthful with their answers

2- the skill of the junior residents was not described and may effect how efficacious the methods are

3- single center with few clinicians involved.

4. Was an Ortho resident study

5. Was in first-time dislocations only.

6. Unsure why they would include any fracture patients. No reason to withhold analgesic meds in this population.

Clinical Bottom Line:
Fairly large prospective study with randomized allocation. Appears to show efficacy in time to reduction and (validated) VAS. This newer technique is worth attempting to employ, if it is successful, there is less overall pain, its quicker and does not require procedural sedation. perhaps with the augmentation of basic pain control, this could become a new standard for shoulder reduction.