

Glenohumeral arthrography performed as a joint-venture between the shoulder surgeon and the MRI department: A method to reduce the diagnostic waiting time.

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Background: Direct MRI arthrography of the shoulder joint is a validated and precise method for diagnosing injuries to the rotator cuff, glenohumeral ligaments and glenoid labrum, but also for discovering other shoulder joint abnormalities. The technique of ultrasound-guided injection of contrast medium into the glenohumeral joint has different approaches and both the anterior and the posterior approach is well established. To optimize the diagnosing procedure for the patient, the waiting-time, the time consumption and degree of pain and discomfort due to contrast injection are crucial elements to improve. This study presents a set-up, where an orthopaedic surgeon and a MRI scanner clinic cooperates, and thereby reduces waiting time, hence shortens the diagnostic process.

Aim: This study aims to describe and validate an ultrasound-guided injection technique of the shoulder, when performed by an orthopaedic surgeon prior to the MRI.

Method: A retrospective study of all 536 arthrographies performed at Viborg Private Hospital/MR Scanner Viborg from January 2013 until December 2014. The MRI scans from all patients were reviewed according to correct intra-articular placement of the contrast medium. Twenty-five percent randomly chosen patients were interviewed by phone regarding the degree of procedural pain, incidence of other complications and their opinion on the total procedure. The ultrasound-guided injection technique using the posterior approach was described in details and illustrated with photos from the procedure.

Results: Reviewing all 536 arthrographies showed that 98.1 % of all injections performed by the orthopaedic surgeon were placed correctly inside the joint capsule at first attempt. The average degree of pain within the first two minutes during- and after the injection procedure was 4.64 (95%CI: 3.45 ; 5.83) on a scale from 1-10. Zero percent experienced pain for more than 1 day and most of the discomfort disappeared within two hours. No patients reported infection or allergic reaction following the injection. None of the patients stated, that the setting with the MRI scanner clinic placed next door was of any inconvenience.

Conclusion: An orthopedic surgeon performing an ultrasound-guided injection of contrast medium in the shoulder joint is a safe and easy method with 98.1 % correct placement intra-articular. The method was well tolerated by the patients and no one experienced complications subsequently. This study indicates that the joint-venture with an orthopaedic surgeon performing the injection of contrast medium followed by MRI at the MRI department can reduce the diagnostic waiting time.