#727 ADJUSTABLE BUTTON AND ALL-SUTURE ANCHORS AS SUSPENSORY DEVICES FOR ARTHROSCOPIC GLENOID RIM FRACTURE FIXATION. SURGICAL TECHNIQUE AND PRELIMINARY RESULTS

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Aim: To present an all-arthroscopic approach for reduction and fixation of anterior glenoid rim fractures.

Background: The treatment of these fractures remains controversial. However, large bony fragments and displacement of more than 10mm can result in shoulder instability and surgical treatment is suggested.

Methods: We describe an all-arthroscopic technique with the use of 3 buttons and 1 suture anchor as a suspensory device. The 30o arthroscope is inserted into the joint through a posterior portal and thereafter one anterosuperior and one anterolateral portal is created. A traction suture is placed on the superior labrum attached to the fragment, making easier its manipulation and reduction through the anterosuperior portal. A custom-made glenoid guide with a 6mm offset hook is inserted from the posterior portal and it is placed anteriorly over the reduced fragment. Two parallel 1.5mm K-wires are inserted through both the glenoid and the fragment, at 10mm distance to each other. A 2.8mm cannulated drill bit is used to create the respective bone tunnels. Through the inferior tunnel the bony fragment is usually thicker. At this level the fixation is performed with one adjustable button placed posteriorly and one attached free round button of 10mm placed anteriorly (Toggleloc, Zimmer- Biomet, Warsaw, USA). Through the superior tunnel, the fragment is usually smaller and more fragile. The sutures of a 2.9mm all-suture anchor (Juggerknot, Zimmer-Biomet) are shuttled from anterior to posterior and the anchor is deployed over the bony fragment. The sutures of the anchor are secured posteriorly over a free button (Zimmer-Biomet), using sliding knots. Finally, the anterior capsule is repaired with a 2.9mm all-suture anchor (Juggerknot, Zimmer-Biomet) that is placed superiorly to the fragment. The aforementioned technique is performed in 3 patients with a minimum 1 year follow-up.

Results: Anatomical reduction with good bone healing was achieved in all cases. No neurovascular complications were reported. One year post-operatively the mean scores were as follows: ASES 95, SST 11, Constant 93 and SSV 95%. No arthritic changes are found in the latest x-rays.

Conclusions: All arthroscopic fixation of anterior glenoid rim fractures with buttons and soft anchors seems to be a safe and reproducible procedure. Furthermore, with the use of the suture anchors as suspensory devices complications such as breakage of the fragment or overhang of metallic materials inside the joint are avoided.

#738 ALGORITHM FOR DIAGNOSING COMPLETE AND PARTIAL DISTAL BICEPS TENDON TEARS: HOOK TEST AND RESISTED HOOK TEST

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Aim: The aim of this study was to develop an accurate clinical algorithm for distinguishing between complete and partial distal biceps tendon tears. The hook and resisted hook tests, when combined, are efficient and accurate tests to diagnose both complete and partial distal biceps tendon ruptures, and distinguishing them from each other.

Background: The hook test, and resisted hook test, are valuable tools for diagnosing complete distal biceps tendon tears. However, little is known regarding their use for diagnosing and partial distal biceps tendon tears.

Methods: The records of 64 patients, who underwent 66 distal biceps repairs between July 2003 and January 2019, and had clear documentation of the results of the hook test and clinical data during the pre-, intra-and post-operative periods were retrospectively reviewed. Hook/resisted hook tests included results of "INTACT," "ABNORMAL" or "ABSENT".

Results: 45 patients had a complete tear and 21 patients had a partial distal biceps tendon tear. 44/45 complete tear cases (98%) had an "ABSENT" hook test and the remaining complete tear case had an "ABNORMAL" hook test. In 6 of 21(29%) partial tear cases the hook test was "ABNORMAL" and in 15 of 21 (71%) the resisted hook test was "ABNORMAL". Therefore, 21/21(100%) of the partial tear cases were "ABNORMAL". Sensitivity and specificity were 100% and 98% respectively for the hook/resisted hook tests. Fifty-five patients had an MRI preoperatively. 34 of 35 (97%) complete tears were confirmed by MRI (1 patient with a complete tear had an MRI diagnosis of partial tear). 19 of 20 patients (95%) with partial tears had been confirmed by MRI. Thus, sensitivity and specificity for MRI were 95% and 97% respectively. The patient with a partial tear and an MRI diagnosis of a complete tear had a painful hook test. In the contralateral arms, which served as the normal control group, 65 of 66 (98%) had a normal hook test.

Conclusions: The hook test and the resisted hook test are valuable tools that can be used in the clinical setting for diagnosing and distinguishing complete and partial distal biceps tendon detachments with greater sensitivity and specificity, compared to MRI. An INTACT hook test, with no pain on resisted hook testing, indicates an intact distal biceps tendon. An ABSENT resisted hook test, that persists on resisted hook testing, indicates a complete distal biceps tendon detachment. The remainder are considered ABNORMAL hook tests indicative of partial tears.

#741 LATARJET PROCEDURE FOR ANTERIOR SHOULDER INSTABILITY: A 24-YEAR FOLLOW UP STUDY

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Aim: The purpose of this retrospective study was to investigate the long-term clinical and radiographic results and complications of the open Latarjet procedure after a minimum follow-up of 24 years.

Background: Different surgical techniques (open and arthroscopic) have been described for the treatment of post-traumatic recurrent anterior instability. The aim of the surgery is to restore when possible, normal shoulder anatomy by repairing the underlying pathology responsible for the instability. Sometimes other surgical techniques are indicated.

Methods: A retrospective study was performed for 67 patients treated with an open Latarjet procedure in a single center. Forty of these 67 patients returned for follow-up evaluation and clinical/radiological examination during the year 2018, having had a minimum of 24-years follow-up. Clinical outcomes were analyzed using two functional scores,in addition to the ROM and strength assessment. Radiographic evaluation included several views (AP views in neutral, internal and external rotation and a comparative Bernageau view)

Results: A total of 40 patients underwent an open Latarjet procedure. All the patients were avaible for follow-up at an average of 25.6 years. Clinically no patient reported any episode of dislocation at the time of follow-up. The mean Rowe score and the Walch-Duplay score were 84.5 (range 45-100) and 83.5 (range 55-100), respectively. Non-union/fibrous union was reported in 12.5% of cases, partial resorption of the graft was found in 7.5% of cases while total resorption was found in 5% of cases. Osteoarthritis was identified in 52.5% (21) of the patients.

Conclusions: This long-term follow-up study demonstrated that the open Latarjet procedure is a safe and reliable technique for