

Incidence and longitudinal evolution of dislocation arthropathy following the arthroscopic Latarjet procedure

Cristina Delgado, Jose María Martínez Rodríguez, Maria Valencia, Gonzalo Luengo Alonso, Natalia Martinez Catalan, Emilio Calvo

INTRODUCTION:

The long-term results have recently been reported, with recurrence rates noted at 3-10%. However, a high complication rate has commonly been attributed to this procedure. A recent systematic review by Hurley et al. found a total complication rate of 6.1% following the open Latarjet procedure and 6.8% in the arthroscopic Latarjet. More specifically, as it is a nonanatomic and invasive technique, concern exist regarding the risk of osteoarthritis development. According to literature, the incidence of degenerative arthritis following an open Latarjet is 25% at 10 years of follow-up and may increase to as high as 61% beyond 30 years. More recently, Bonneville et al. and Boileau et al. reported mid- and long-term osteoarthritis rate with the arthroscopic Latarjet procedure, observing glenohumeral degenerative changes on 19% and 26% of patients, respectively.

However, there is no study analyzing the longitudinal development of arthrosis following the arthroscopic Latarjet procedure with screw fixation or even reporting on the long-term (10 years follow-up) arthrosis incidence using this technique. Therefore, the purpose of the study was to analyze the incidence and longitudinal evolution of dislocation arthropathy following the arthroscopic Latarjet procedure with screw fixation with a minimum of 10-year follow-up.

METHODS: Observational, retrospective of prospectively collected data, single center study of patients with anterior glenohumeral instability managed with an arthroscopic Latarjet procedure between 2010 and 2014. Clinical and radiological evaluation at a minimum 10-year follow-up including post-operative CT scans at one-year, two-years, five-years and 10-years follow-up was conducted. Patients with previous surgeries others than a Bankart repair, those with concomitant lesions requiring an additional procedure (i.e., SLAP lesion requiring labral repair or biceps tenodesis, remplissage or rotator cuff repair), and patients suffering from posterior, multidirectional glenohumeral instability, and voluntary instability were excluded. Patients with intraoperative fractures and those requiring revision surgery after the Latarjet procedure were also excluded. Glenohumeral osteoarthritis (OA) was evaluated preoperatively, and postoperatively at 1-, 2-, 5- and 10-years follow-up and graded into four types according to Ogawa *et al.* classification. Risk factors for progression to postoperative osteoarthritis, including number of episodes of dislocation, age at primary dislocation and at surgery, time between first dislocation and surgery, preoperative bone defects, position, healing and resorption of the graft and screw position, were evaluated.

RESULTS:

Forty-one patients, mean age 26.5 ± 15.4 years, mean follow-up 11.1 ± 2.35 years, were included. Preoperatively, 36.6% (15/41) of patients showed signs of osteoarthritis. At 2 years post-surgery, there was a significant increase in the incidence of mild (grade 1) and moderate OA (grade 2), observed in 56.1% and 19.5% of cases, respectively, with overall progression seen in 51.2% (31/41) of cases. By 5 years, OA progression continued, with 65.9% (33/41) of patients experiencing worsening from baseline, and 31.7% (13/41) showing further progression from the 2-year mark. At 10 years, severe OA (grades 3–4) became more prevalent, affecting 12.2% of patients (5/41), while cumulative OA progression from baseline reached 68.3% (28/41). Notably, the most rapid deterioration occurred within the first 2 years. Delay between the first dislocation and surgery and younger age at primary injury were identified as risk factors for osteoarthritis development ($p=.033$, $p=.035$). Furthermore, a higher screw alpha angle was associated with greater osteoarthritis progression ($p=.048$).

DISCUSSION AND CONCLUSION:

Osteoarthritis progression following the Latarjet procedure is notable, with 68.3% of patients showing worsening after 10 years. The most significant progression occurs within the first two years (51.2%), gradually slowing between two to five years (31.7%) and further decreasing from five to ten years (12.2%). Factors like delayed surgery, younger age at first dislocation, and large Hill-Sachs lesions increase OA risk, highlighting the potential benefits of early intervention in reducing long-term degeneration.