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Prospective Multicenter Study Of A New Onlay Reverse Shoulder Arthroplasty System. One-year follow-up Clinical Outcomes And Complications In The First 219 Consecutive Cases.

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Aim/ background:

To define the early one-year results of a new reverse shoulder arthroplasty system (Embrace Shoulder system, LINK®) introduced to the market in 2020, an onlay, versatile and modular system.
The study focused in subjects undergoing reverse shoulder arthroplasty as a primary arthroplasty procedure.

Methods:

A prospective longitudinal multicentric (four centers in Spain) study was performed. It included all subjects operated with a reverse shoulder arthroplasty with the aforementioned system as a primary arthroplasty procedure. Previous arthroplasty of any kind was an exclusion criterion. Clinical and radiological data, complications, and reinterventions were recorded intraoperatively and at 6 weeks and one year follow-up.

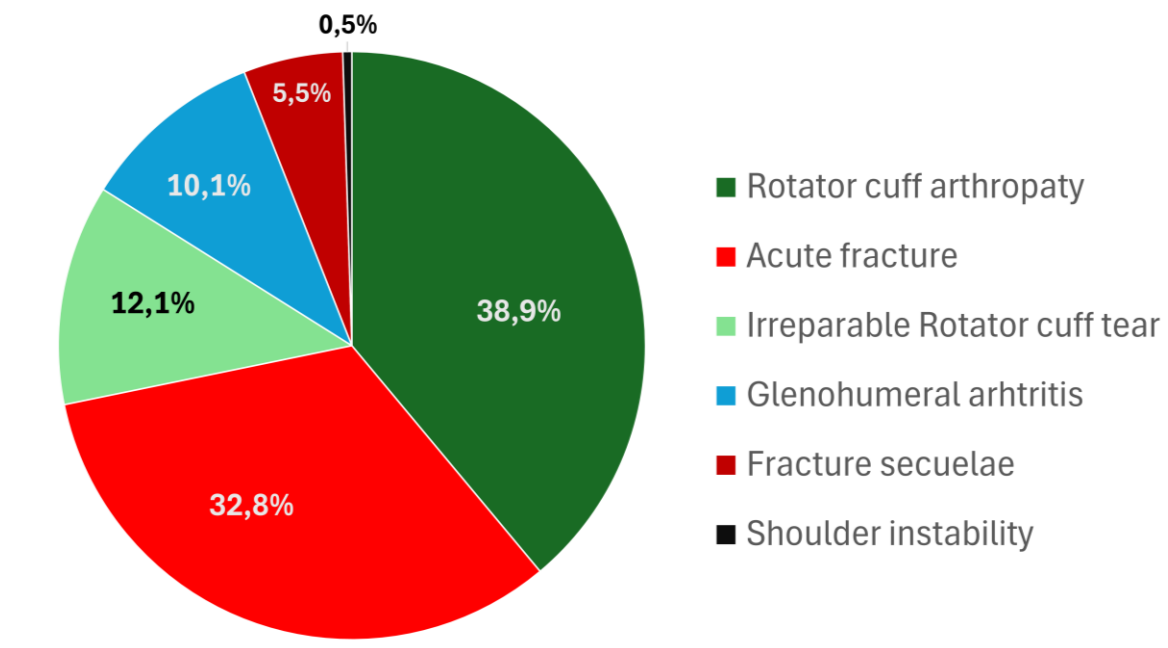
Results:

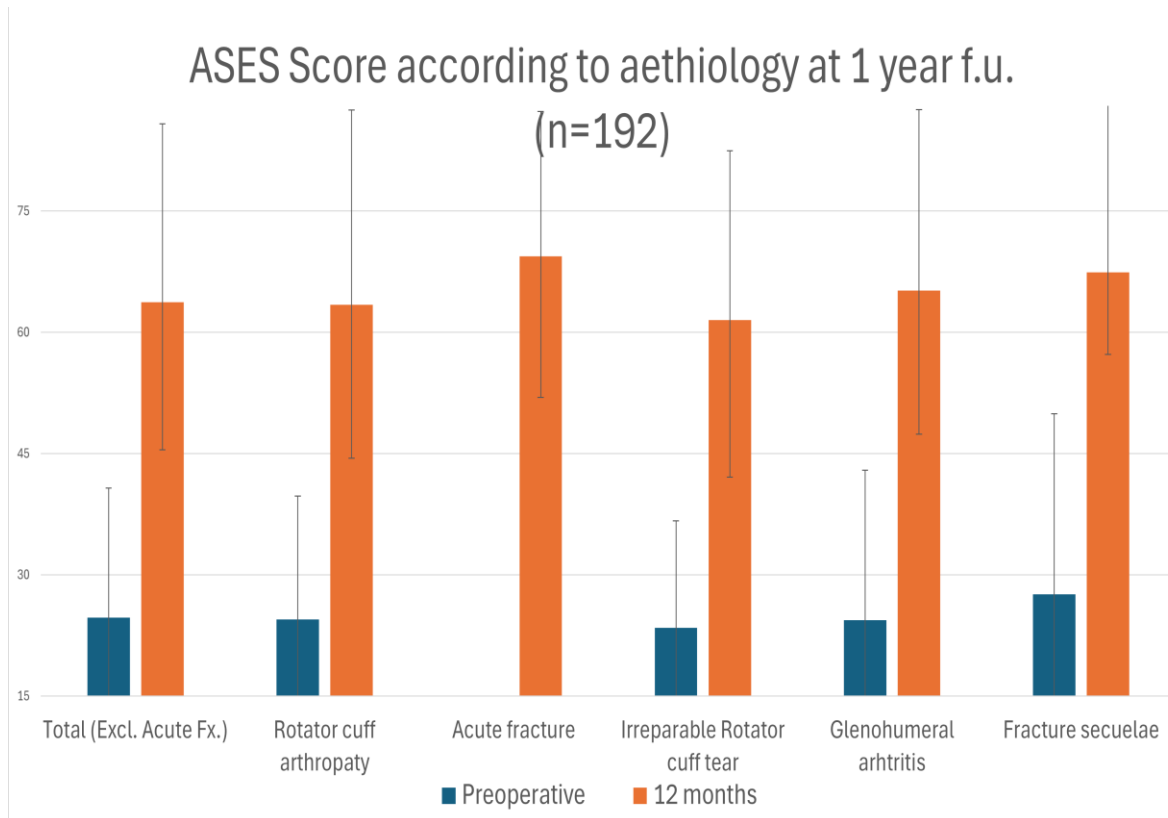
Epidemiology: of the 219 subjects included, 198 were available for one-year follow-up (90.4% retention rate). In these 198 subjects (51 males and 147 females, mean age: 72.3±8.02 years) the etiology for the arthroplasty was mainly cuff tear arthropathy and acute proximal humerus fractures, followed by irreparable cuff tear, primary osteoarthritis and fracture sequelae.

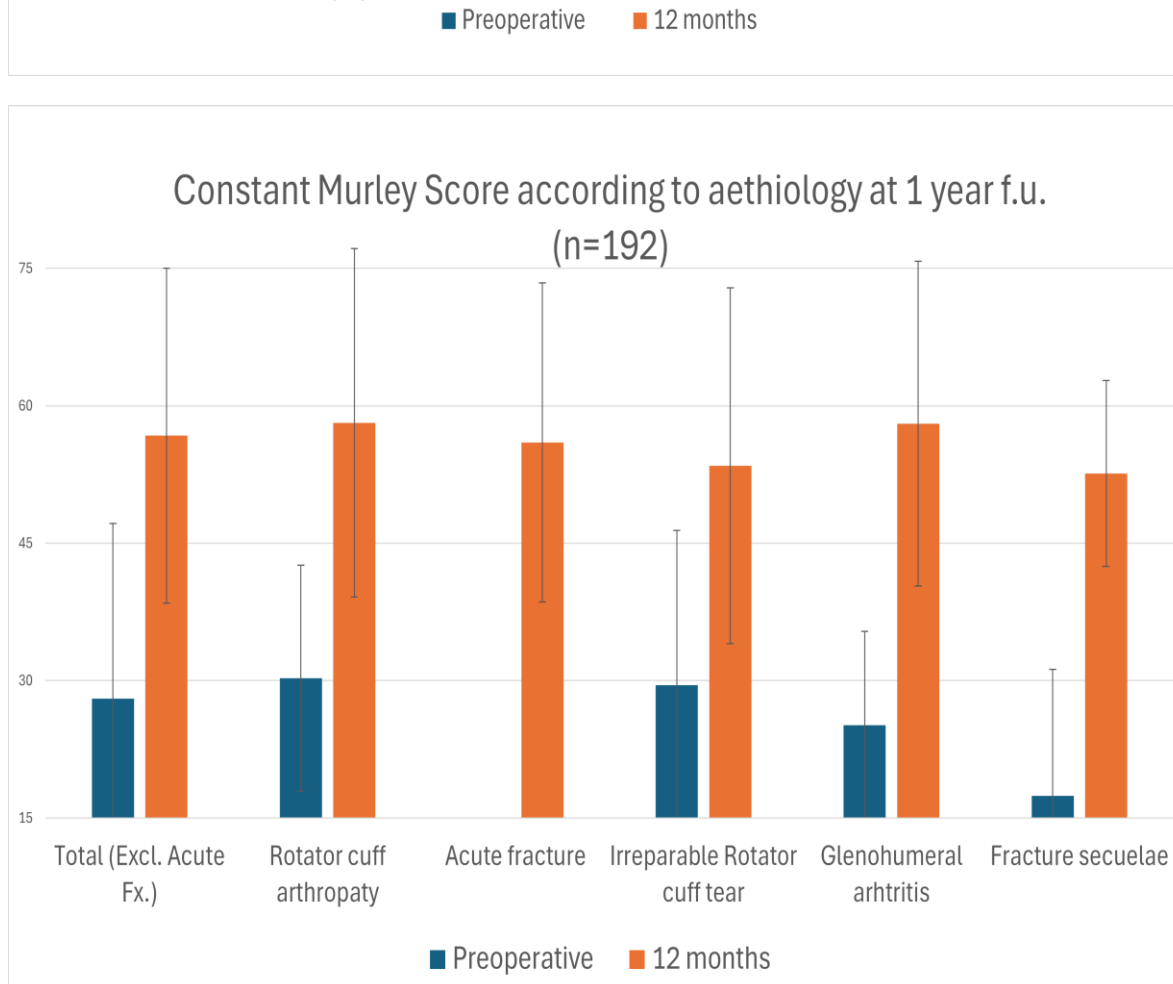
Type of implant: Mostly non-cemented humeral components were used(99%) with stemless design used in only 1% of cases. Modular stems were used in 23.8% of cases. The same 28 mm glenoid baseplate was used in all cases, fixed mostly with two screws (92.3%). BIO-RSA was performed in 3.5% of cases. The glenosphere size varied between 36 (20.9%), 39 (76.2%) and 42 (2.9%) mm (concentric in 52.7% and with inferior eccentricity in 47.6%).

Revisions: Six subjects (3%) required a revision procedure in the first year after surgery: three developed a deep infection that required a two-stage revision(n=2) or a resection arthroplasty(n=1), one subject suffered an early stem mobilization, and another suffered a periprosthetic fracture over a loose stem. One patient suffered a dislocation and required a revision with a humeral liner exchange. Another patient suffered a postoperative cardiac complication and died, leaving 192 subjects for clinical evaluation at one year follow-up. Regarding non-revision major complications: two patients suffered a type 2 periprosthetic fracture over well-fixed humeral stems and were managed with ORIF, another periprosthetic fracture was managed conservatively; three patients presented with wound complications that were managed conservatively; another suffered an acute postoperative infection and was managed with a debridement with implant retention.

Clinical outcomes: There were across-the-board, significant, improvements in the Contant and ASES scores for all indications.







Conclusion:

The Embrace Shoulder System (Link®) is safe and effective in the short term for the management of various conditions of the shoulder that require a reverse shoulder arthroplasty.