

Reverse shoulder arthroplasty in patients aged sixty years old or younger: are we really doing the best?

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Reverse shoulder arthroplasty (RSA) is a technically demanding procedure that ensures satisfactory clinical outcomes in elderly with severe pain and limitation of shoulder motion. The results of reverse shoulder replacement in patients with cuff tear arthropathy (CTA) presented by Paul Grammont in 1987 · 1· were seen with skepticism, especially by north american orthopedic surgeons, who continued to prefer shoulder hemiarthroplasty (HA) in cases of eccentric osteoarthritis. Nevertheless, in the last decade, the indications for reverse replacement have widely expanded and finally accepted from most of the orthopedic surgeons. Compared to the early Grammont prostheses, reverse designs have been recently proposed with some biomechanical changes, including lateralizing offset and inferior tilt of the glenosphere to minimize the risk of scapular notching and improve the active range of motion (ROM) · 2,3· . Indication for RSA in young patients (sixty years or younger) is nowadays the most controversial point to be addressed. This topic, that is extremely interesting and timely, deserves to be deepened because the high functional demands of these subjects make the reverse implants at risk of failure for instability or mobilizations of the components (disassembling of glenosphere and humeral component, screws ruptures). The medialized reverse implant was created by Grammont for elderly and low demanding

patients with two main scopes: reduce pain and gain an acceptable ROM. RSA gives the best clinical outcomes in CTA, but similar good results have been reported in massive rotator cuff tears when the patient is pseudoparalytic and does not respond to other conservative therapies · 4· . Even in cases of primary osteoarthritis with severe muscular fatty infiltration of the RC and biconcave glenoid with static posterior instability or in rheumatoid arthritis, RSA resulted to be an effective treatment option. Recent research findings showed good short-term results after reverse prostheses in patients sixty years of age or younger with preoperative diagnosis of osteoarthritis and RC insufficiency · 5· . However, the authors honestly highlighted how the rate of patient satisfaction was much lower in their population than in the older patient population as reported in the literature. From april 2005 to date about 850 shoulder replacement have been performed in our Shoulder and Elbow Unit and 60% of them were reverse implants. Most of the patients we treated by RSA were elderly (mean age 69 years old) and lesser than 10% of them were sixty years old or younger. Furthermore, when RSA was proposed in active subjects younger than 60 years, it was not uncommon that the surgeons of our Shoulder Unit did not achieve a complete agreement or someone suggested an HA. The use of RSA to revise a previous anatomical prostheses is an

additional controversial point of interest because has been shown to be a technically demanding procedure with a high rate of complications, mainly in young and active subjects. An interesting study by Gilles Walch et al · 6· showed that the surgeons' acquired experience during the implantation of RSA helped them to refine patient selection, giving priority to the etiologies linked with the best outcomes and reducing the number of revision surgery cases, which are related to a high complications rate. The aforementioned considerations are even more shareable in young patients with pseudoparalytic shoulder and RC insufficiency, where RSA may represent a "salvage procedure" with high risks of failure.

We conclude this brief editorial with the following take home messages: i) RSA requires a technical mastery with a long learning curve, ii) HA should be preferred when the posterior cuff and the subscapularis may ensure prostheses stability in the sagittal plane, minimizing the pain and maintaining an acceptable ROM, iii) RSA in patients ≤ 60 years should be limited to selected cases, when all other options have been considered and the patient has been carefully and clearly informed about the limits and the risks of this surgical procedure.

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