

## Results of Reverse Prostheses: About 36 Cases.

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**Abstract:** *The reversed prosthesis of the shoulder is currently one of the treatments in shoulder pathologies regardless of degenerative or traumatic. Short-term results are correct but more uncertain in the long term. This work is a retrospective study of 36 reverse shoulder joint replacements performed in the department of orthopedic and traumatologic surgery «A» of the CHU HASSAN II of Fez, since December 2013 to June 2019. whose purpose is to establish the survival curves of this prosthesis.*

**Keywords:** reverse prosthesis; fracture; om osteoarthritis; rheumatoid arthritis.

### Introduction:

The first total prosthesis was created in 1971 by Stellbrinck [1]. The results of these total prostheses with implantation of a glenoidal part were reported secondarily following the satisfactory results of hemiarthroplasty. [2]. It is one of the possible treatments for osteo-articular shoulder diseases including rheumatoid arthritis [3], osteonecrosis [4], and eccentric omarthrosis [5], and improves short-term abduction, thus avoiding post-operative progression. Initial trauma of the elderly to addiction.

### Material and method:

This work is a retrospective study of 36 shoulder arthroplasties performed inverted type at the department of orthopedic and traumatologic surgery «A» of the CHU HASSAN II of Fez since December 2013 to June 2019. Our objective through this series was to show the interest of reverse shoulder joint replacement in the different types of pathologies, on improving the quality of life of patients.

The series included 36 patients, representing 36 shoulders - no bilateral cases -, 25 women and 11 men. The average age at the time of the operation was 61 years. The etiology were dominated by fractures of the upper extremity of the humerus in 18 cases (12 type "B3" fractures and 6 dislocation type "C3" fractures according to the AO classification), osteoarthritis in 13 cases (4 cases of eccentric omarthrosis stage 3 and 9 cases of omarthrosis stage 4 according to the classification of HAMADA and FUKUDA); follow-up of rheumatoid shoulders in 5 cases. All the patients underwent a preoperative clinical examination. We used the constant score to assess the results with a radiological assessment included x-rays of the shoulder, face and profile, supplemented by pre and postoperative scannographic examinations.

The operation was always performed under general anesthesia in a semi-seated position, via a delto pectoral approach in 15 cases and super external in 21 patients, the implanted prosthesis was an inverted prosthesis (Arrow type). All of our patients received postoperative analgesia through a scalenic catheter.

The 1st phase of rehabilitation begins at the service and consists of passive mobilization of the shoulder in abduction, and antepulsion in the plane of the scapula and pendular movements after 48 hours postoperatively followed by a well-defined rehabilitation protocol after the discharge of the patients.

The average hospital stay is 6 days, and the follow-up in consultation was punctuated at 3 weeks, 3 months, 6 months and 1 year.

### Results:

Due to 5 patients lost to follow-up, only 31 files were reviewed with a mean follow-up of 40 months. Among these 30 patients, three complications were noted: 2 syndromes of algoneurodystrophy resolving under medical treatment in six months, a patient who presented with a septic loosening of the glenosphere and the humeral stem; treated by removal of the prosthesis with placement of a spacer and appropriate antibiotic therapy.

We compared the Constant and Murley score preoperatively and at the last review.

This score was 52 compared to 20 preoperatively with an anterior active elevation of 105 ° compared to 70 ° with internal and external rotations remaining low postoperatively.



Figure 1: Standard AP x-rays showing stage 4 eccentric osteoarthritis of Hamada and Fukuda preoperatively and control.



Figure 2: Standard AP x-rays showing a fracture of the upper extremity of the humerus treated with a reverse prosthesis

Discussion:

Our study is multicentric, retrospective and heterogeneous including glenohumeral arthropathies and fresh trauma to the proximal humerus in the elderly patients, also it is a series where the surgeon has decided on his own indications, his surgical technique and the postoperative consequences.

Studies have shown that the results of reverse prostheses in rheumatoid shoulders are satisfactory, while they were worse in osteoarthritis with less active elevation recovery and modest strength recovery. [7]

The reverse prosthesis, provided it is reserved for elderly patients with arthropathy with massive rupture, allows to hope for a hold and a correct result after more than 5 years of follow-up [8]

In patients with combined cuff and glenohumeral joint destruction, the reverse prosthesis improves function and restores active elevation, but does not restore active rotations. Osteoarthritis with massive cuff lesions gives the best results. [9]

Bufquin et al. [10] recommend the reverse prosthesis as treatment in the elderly for fractures of the proximal humerus despite the frequent complications associated with this prosthesis after carefully weighing the advantages against the disadvantages. Also Klein et al. [11] state that the reverse prosthesis is a real therapeutic option in the elderly because of the good functional results and the short operating time.

Among our objectives: to compare results with those of the different series in the literature.

The average age in our series is 61 years and which is lower compared to the average age in the series of Jacques GUERRY [8] which was 79.5 or that of FAVARD [6] (average age of 67.5 ), this can be explained by the traumatic cases dominating in our series and which are of a rather young age compared to the other series, with a clear female predominance in our series as well as the literature, and the dominant etiology in these heterogeneous series was massive rotors of the cuff, while in ours it was fractures of the upper extremity of the humerus.

Regarding the results on the constant score, our postoperative score (52) was lower compared to the scores found in the different series (59 in the series by Jacques Guerry [8] and 58 in the series by Favard [6]), this can be explained by a high decline in these series compared to ours.

Anterior elevation and abduction were greatly improved in our series, and the literature thus markedly improved pain, but with rotations did not improve and was particularly disappointing. [7], [12]

At the end of the complications, and considering our low follow-up and that this relates only to a small sample and which is always continuous, we did not observe any significant complications from long-term shoulder prostheses.

On the other hand, the literature reports rates high postoperative complications and reoperation [7].

### **Conclusion :**

So the long-term results, scientifically and rigorously evaluated, have given us information on the good durability, the real interest, practicality of such implants And in the analysis of complications of failures and life curves.

At the end of our study, it is indisputable that reverse shoulder prostheses have many indications in various arthropathies of the shoulder, arthritis, traumatic and inflammatory and this surgical indication must be adequate and early in order to prevent joint deterioration especially in cases of osteoarthritis and inflammatory diseases and improves the overall function of the patient in his day-to-day, professional or even sporting life.

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