Novel treatment (new drug/intervention; established drug/procedure in new situation)

Management of the treatment of glenohumeral instability in patients with extensive bone defect

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SUMMARY

Bone defects in the glenoid and humeral head are common consequences glenohumeral instability and can be a cause of recurrence after repair of the Bankart lesion. Quantification and localisation of lesions are important to treat correctly in order to prevent recurrence after surgical treatment. The authors describe the case of a 27-year-old patient with epilepsy, with glenohumeral instability before, with countless episodes of dislocation, even the slightest effort. The imaging studies have identified extensive bone lesions (greater than 40%) in both the humeral head and the anterior portion of the glenoid. Thus, it was decided to perform surgical treatment with the use of bone grafts from cadavers. The patient is doing well without recurrence of the lesion after 24 months of surgical treatment.

BACKGROUND

Bone defects in the glenoid and humeral head are common consequences glenohumeral instability and can be a cause of recurrence after repair of the Bankart lesion.^{1–3} Quantification and localisation of lesions are important to treat correctly in order to prevent recurrence after surgical treatment.^{4,5} The authors describe the case of a 27-year-old patient with epilepsy, with glenohumeral instability before, with countless episodes of dislocation, even the slightest effort. The imaging studies have identified extensive bone lesions (greater than 40%) in both the humeral head and the anterior portion of the glenoid. Thus, it was decided to perform surgical treatment with the use of bone grafts from cadavers. The patient is doing well without recurrence of the lesion after 24 months of surgical treatment.

CASE PRESENTATION

The authors describe the case of a patient of 27 years with a history of anterior glenohumeral dislocation exertion. The first episode of dislocation occurred 10 years after the fall of

the ladder. He sought the emergency room where he was held to reduce the dislocation. After this fact the patient had several episodes of dislocation, and himself carried out the reduction. He reported considerable uncertainty when performing simple activities of daily living, and episodes of dislocation even while sleeping. It bears epilepsy at the time of surgery controlled by anticonvulsants (phenobarbital and Clobazam). Stated they had episodes of seizures for more than 12 months. Physical examination did not observe changes to the inspection or muscle trophism. Showed no signs of ligamentous laxity. The apprehension and relocation tests were positive.

INVESTIGATIONS

The imaging showed extensive bone defects in the humeral head and glenoid cavity, an estimated loss of 50% and 60% respectively, measured by CT. The rotator cuff tendons were intact (figure 1A–D).

TREATMENT

Treatment was performed through the deltopectoral incision. After extensive capsular release the humeral head was fully exposed. We performed the site preparation for receiving defective bone grafts from cadavers. It was used as a graft femur head, the same being osteotomised according to the prepared area of the bone defect in the humerus. The graft was fixed with Herbert screws. Glenoid cavity was used for the autogenous glenoid articular surface and not distal tibia (figure 2A–J).

OUTCOME AND FOLLOW-UP

After 24 months of evolution, the patient is well not having a recurrence of the dislocation, even with new episodes of seizures. The imaging tests are not observed areas of bone resorption of the graft (figure 3A–D).

Figure 1 (A–D) Imaging studies demonstrating the extensive bone defect.

Figure 2 (A–J) Preparation of bone graft originated the femoral head and the surface of the glenoid to be used.

Learning points

- Bone loss in the humerus and the glenoid should be investigated and quantified in patients with glenohumeral instability. Large bone defects are associated with multiple episodes of dislocation.
- X-ray examinations and CT associated with examination under anesthesia assist in surgical planning.
- Glenoid bone loss greater than 20%, Engaging Hill-Sachs lesion are indications of use of bone graft to restore joint. The cadaver graft is a good option in the management of bone defects larger than 40% in the glenoid and the humeral head.

Competing interests None.

Patient consent Obtained.

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Figure 3 (A–D) Patient after 24 months of surgery showing satisfactory progress.

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