

## **Arthroscopic partial shoulder resurfacing**

Arthroscopic-assisted partial humeral head resurfacing, which has the advantages of bone stock preservation and the maintenance of an intact subscapularis tendon, allowed immediate postoperative mobilization and provided significant improvements in subjective outcomes, especially for pain relief in active patients without severe glenoid cartilage wear.

### **Indication:**

Focal chondral and osteochondral lesions of the humeral head, avascular necrosis, Hill-Sachs and reverse Hill-Sachs lesions, in a biologically young patient (Age <50 years) and in patients with high functional requirements.

### **Operation principle**

Arthroscopically assisted (Partial Eclipse™, Arthrex) partial resurfacing arthroplasty of the humeral head. The prosthesis is composed of two components, a fixation screw (taper) and the actual resurfacing component, the posterior surface of which should ensure osteointegration.

### **Imaging**

- X-rays of the shoulder in three views (true AP, y-view, axial) for assessment of the osseous status (osteochondral lesion, Hill-Sachs and reverse Hill-Sachs lesions) and exclusion of advanced glenohumeral osteoarthritis
- MRI (with intra-articular contrast medium) to evaluate the site and extent of the defect and the osteochondral condition (bone oedema, osteonecrosis) and any concomitant lesions (e.g. with traumatic origin)
- CT (with intravenous or intra-articular contrast medium) with specific indications (e.g. exact localization and sizing of the osteochondral lesion, Hill-Sachs defects and the extent of humeral head osteonecrosis)

### **Operative technique (Partial Eclipse™, Arthrex)**

A diagnostic arthroscopy performed followed by exact evaluation of the defect margins and assessing the stability of surrounding normal cartilage using an arthroscopic probe. A drill guide with guide instruments is inserted into the joint and the size of the humeral head defect is measured to determine the appropriate diameter of the implant (Fig. 6.1). Trans-humeral over-drilling over a guide wire targeting the defect followed by inserting a guide sleeve and pin for the reamer which is introduced via the anterosuperior portal. Retrograde reaming of the defect. Insertion of the implant through the anterosuperior portal and the rotator interval (Fig. 6.2), connecting both components with an implant grasper and retrograde screwing the implant into the humerus (Fig. 6.3).

### **Postoperative management**

Positioning of the arm in an arm sling

Monitoring of peripheral circulation, motor and sensory innervation

-Postoperative X-Ray evaluation

Immobilization of the shoulder in a sling for 2 weeks. Passive mobilization for 6 weeks postoperatively without limitation of motion. From the 7th

postoperative week transition to active-assisted and active mobilization. From the 3rd postoperative month strengthening exercises and beginning of sport.

### **Tips & Tricks**

Precise and strict indication is critical to the success of partial resurfacing. It is contraindicated if there is associated generalized osteoarthritis. Resurfacing prostheses should be implanted so that it lies a little bit below the surrounding cartilage surface. Protrusion of the implant should be avoided as it can lead to glenoid erosion.

If a Partial Eclipse implant is used in case of a very superiorly located defect, the trans-humeral drill hole must be started so far inferiorly. The axillary nerve should then be protected by making a small incision down to the bone and avoiding uncontrolled blind drilling through the soft tissue.