Posterior Open Wedge Glenoid Osteotomy Provides Reliable Results in Young Patients With Increased Glenoid Retroversion and Posterior Shoulder Instability

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All authors declare no conflict of interest.
**Purpose**
To assess clinical and radiographic outcomes of patients following posterior open-wedge glenoid osteotomy

**Hypothesis**
Posterior open-wedge glenoid osteotomy results in good clinical and radiographic outcomes and that shoulders are postoperatively stable
Methods

Retrospective Study Design

Inclusion Criteria:
✓ All open-wedge PGO with spina scapulae autograft between 2009 – 2017
✓ Indication for surgery: Retroversion > -15° with concomitant failed non-operative and / or failed soft-tissue surgery and radiographic posterior subluxation of the humeral head
✓ Minimum follow up ≥ 12 months

Exclusion Criteria:
# Off-track reverse Hill-Sachs lesions

Data collection:
- Clinical failures defined as patients suffering from recurrent instability (including subjective instability)
- Rowe Score, Oxford Instability Score
- Pre- and postoperative CT scan or MRI to compare glenoid retroversion
Methods – preoperative planning

Preoperative retroversion – green line

Planned correction of approx. 10° - yellow line

Osteotomy approx. 10mm medial to the joint – blue line

Planned osteotomie width – red line
Methods – Surgical Technique

Pogorzelski et al., OOT 2016
Methods – Surgical Technique
Immobilization in orthosis in neutral position for six weeks

**Week 1-3:**
- Passive abduction and flexion
- No internal rotation

**Week 4-6:**
- Active-assisted motion

**Starting from week 7:**
- Free range of motion
A total of 12 shoulders could be included:
- 100% follow up of clinical results
- 91% follow up of radiographic results

Mean patient age at surgery:
25 ± 7.3 years (range, 17 – 40)

→ Mean pre-operative GR
-23.3° (range, -15° – -35°)
Results – Clinical and Radiographic Outcomes

- Mean postoperative GR: -13° (p=0.003)

- No recurrent dislocations / no revision surgeries
- 1 clinical failure due to persistent subjective posterior instability
- 4 (non-displaced) intra-articular fractures (red arrow) treated with strict immobilization for six weeks

<table>
<thead>
<tr>
<th>Rowe Score</th>
<th>85.83 (45 – 100)</th>
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<tr>
<td>Oxford Instability Score</td>
<td>40.08 (21- 48)</td>
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Conclusions

- Precise correction of the glenoid retroversion is possible!
- Low rate of recurrent instability / revision surgeries
- Reliable and satisfying outcomes in young patients
- But: complex surgical technique with possible significant complications -> PGO as a salvage procedure!

Limitations
- Limited number of patients included with different etiologies
- Minimum follow up 12 months only
- Level IV case series


Thank you!