ABSTRACT:

**Background and objectives:** To study the correlation between etiology, sex, side and time of TMJA, to evaluate and compare two different surgical techniques and their postoperative complications.

**Methods:** Twenty-one patients (15 female, 6 male) were treated in Rizgary Teaching Hospital in Hawler during the period May 2007-October 2008. The patients were referred from Hawler and Duhok governorates, and operated on by two surgeons each adopted one surgical technique, either gap arthroplasty with temporalis muscle flap (technique A) or horizontal ramus osteoctomy with masseter muscle flap (technique B).

**Results:** We found 95.65% of patients had TMJA before the age of ten years and 96% was due to trauma (57% was bilateral TMJA and 43% unilateral), technique (B) was easier and of shorter duration than technique (A) which was more functional. The most common postoperative complication was neural deficit (33.33%). Anterior open-bite occurred in 36.3% of patients with bilateral ankylosis.

**Conclusions:** The earlier the onset of ankylosis, the more the extent of deformity and the more complicated surgical technique was required. Both techniques were effective with good immediate outcome.

**Keywords:** TMJ, Ankylosis, Gap arthroplasty, Horizontal ramus osteoctomy, Flap.