MAGNEZIX

FIXATION OF MEDIAL MALLEOLAR FRACTURE WITH BIOABSORBABLE MAGNEZIX® SCREWS

BACKGROUND AND INDICATION

Surgical treatment is recommended for medial malleolar (MM) fractures with more than 2 mm displacement or accompanying instable ankle fractures. The main goal of the surgical treatment of MM fractures is anatomic fixation of the fracture and retention of the bone fragments until bony union is achieved. Furthermore, the fixation should be stable to allow early joint mobilization and weight bearing. To reach these goals, several surgical techniques, and implants have been utilized up to date. Tension band wiring, various types of screws, staples, plates and sliding implants are among the most commonly used implants. As the soft tissue support is weak and subcutaneous fat is thin around the malleolar region, particularly over the medial malleolous, pain overlying the distal tibial plates or screws and tension band wires are frequent and usually necessitates implant removal. However, the fixation of MM fractures with new generation of magnesium-based implants (MAGNEZIX®) eliminates implant removal.

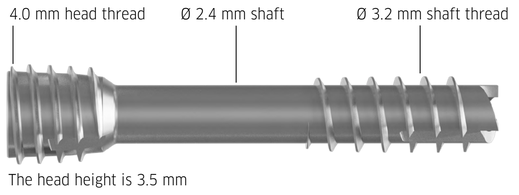
INFO-BOX

PATIENT: 20-year-old female

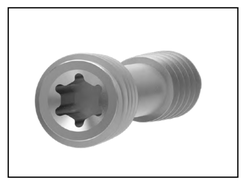
DIAGNOSIS: Medial malleolar fracture

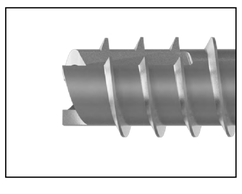
OPERATION: Open reduction and internal fixation with MAGNEZİX® CS 3.2 compression screws.

IMPLANTS: MAGNEZIX® CS 3.2, 2 x 38 mm



The head height is 3.5 mm





CLINICAL RESULT: Complete union of fracture and remodelling of the screw.

PATIENT HISTORY AND INDICATIONS

20-year-old female admitted to the emergency department with a painful swollen ankle after she sustained a twisting ankle injury. Medial and lateral malleoli were tender on palpation and weight bearing could not be performed. Radiographic examination showed a **medial malleolar fracture and an avulsion type distal fibular fracture**. Because the fracture was displaced (> 2 mm) and there was articular incongruity, surgical fixation of the fracture was planned.

SURGICAL COURSE AND POSTOPERATIVE FOLLOW-UP

The patient was operated under spinal anesthesia and tourniquet control in a supine position. A medial longitudinal incision was used for the surgical approach. After reduction of the fracture, two parallel guide-wires perpendicular to the fracture line were positioned with fluoroscopic control. A cannulated drill bit was used for preparing the hole. Then the fracture was fixed with two 3.2 mm magnesium headless compression screws (MAGNEZIX® CS, Syntellix AG, Hannover, Germany). A short-leg plaster cast was applied to the patient for four weeks. After the removal of the cast, full weight-bearing was encouraged and ankle joint exercises were started.

During the follow-up, **fracture union was achieved without any complications within eight weeks**. Ankle radiographs showed radiolucent zone around the screws. At the 9th month follow-up the patient had full range of ankle motion without pain. Degradation of the screws was started and radiolucent zone was disappeared. At the final follow-up examination, 21 months **after** the operation, the **American Orthopaedic Foot & Ankle Society (AOFAS) score was 100 points and the patient had returned to the pre-injury level of activity and sports.** Final radiographic examination showed remodelling of the screw and complete consolidation of the fracture.

CONCLUSION/SUMMARY

In this case of a young adult with a medial malleolar fracture, **a successful treatment outcome was obtained with MAGNEZIX® screws.** Despite the radiolucency around the screw and even the early weight bearing of the patient at four weeks, no failure of the implant or re-displacement of the fracture was observed, and there was no interference with the early phases of fracture union or final consolidation. Magnesium screws are an excellent fixation material for fracture fixation.

Praeop:

Postop (2 months):

Postop (9 months):

Postop (21 months):

Author and surgeon

Surgeon: Baver Acar, MD
Antalya Education and Research Hospital
Orthopaedics and Traumatology
Antalya, Turkey

M 7073.001.001 08/18

SYNTELLIX