LAG SCREWS FIXATION VERSUS TRADITIONAL PLATE OSTEOSYNTHESIS IN OBLIQUE LATERAL MALLEOLAR FRACTURES

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Introduction

Ankle fractures represent 10% of all fractures, making them the second most common lower limb fractures. Knowledge of the management of such extremely common injuries is a must for each orthopaedic surgeon.

Using plain radiography, the stability of the ankle fractures can be judged, and the fractures classified. Stable ankle fractures can be treated conservatively if the degree of displacement and patient characteristics permit. Unstable ankle fractures require accurate anatomical restoration of normal joint congruity through one of the many methods of internal fixation.

Traditionally, fixation of lateral malleolus fractures involves the use of a laterally placed one-third tubular plate with or without a lag screw depending on the fracture configuration. However, prominent hardware complications are common complaints.

In selective cases, a new technique using lag screws only for the fixation of long oblique lateral malleolus fractures provides a safer and equivalently effective alternative.

Aim of the Work

The aim of this study was to evaluate the results of the use of lag screws fixation versus plate osteosynthesis in oblique fractures of the lateral malleolus.

Patients and Methods

This prospective study included 50 patients admitted to El-Hadra University Hospital with non-comminuted oblique lateral malleolar fractures that are long enough to allow for at least 2 lag screws to be placed at least 1 centimeter apart. The patients were simply randomized into 2 groups: group A (lag screws only) and group B (plate osteosynthesis).

Patients in group A had their fractures fixed using at least 2 lag screws, while those in group B fixed using a plate with or without a lag screw. All patients were immobilized in a cast for 6 weeks and followed up for at least 6 months. Radiological follow-up for reduction and union was done immediately postoperative, at 2-weeks and 6-weeks. Clinical follow-up using the Foot and Ankle Outcomes Questionnaire developed by the American Academy of Orthopaedic Surgeons (AAOS) was done at 3 and 6 months postoperatively.

Results

Table 1: Reported complications

	Group A	Group B
Palpable hardware	1/21 (4.7%)	12/23 (52.2%)
Additional surgery	0	5/23 (21.7%)

Table 2: Results of the Core Scale scores of the Foot and Ankle Outcomes Questionnaire

		Group A	Group B
Core Scale standardized mean	3 months	90	80
	6 months	98	85

Table 3: Results of the Shoe Comfort Scale scores of the Foot and Ankle Outcomes Questionnaire

		Group A	Group B
Shoe Comfort Scale standardized mean	3 months	84	61
	6 months	97	76

Conclusion

All ankles fixed using lag screws only had a reduced anatomical mortise throughout the whole follow-up period and all fractures united adequately. Lag screws only fixation is an effective alternative method for the fixation of non-comminuted long oblique lateral malleolar fractures in patients with good bone quality.

Patients treated by lag screws only scored higher than those treated by plate osteosynthesis on both Core and Shoe Comfort Scales at both 3- and 6-months follow-up. They also reported less palpable hardware complications and did not need any secondary surgeries. Lag screws only fixation in selected cases is a safer alternative to traditional plate osteosynthesis.