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Results after 2.7mm locking compression plate in displaced midshaft clavicle fractures: a retrospective study

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Introduction and Background

A midshaft clavicle fracture is a common fracture that traditionally underwent with open reduction and internal fixation. Previously, screws with a 3.5mm diameter were used in surgery, but recently 2.7 mm LCP has recently been used for clavicle fractures. However, there is concern that the small diameter screws used for fixation may not provide sufficient fixation strength, which may lead to complications such as nonunion, malunion or metal breakage during fracture union period. The purpose of this study was to investigate the results of clavicle shaft fracture surgery using 2.7 mm LCP.

Material and Method

We retrospectively reviewed the medical records of 75 patients who had undergone ORIF with 2.7mm LCP for midshaft clavicle fractures after IR from March 2024 to September 2025 and followed up for more than 2 months after surgery at our institute. We evaluated basic demographic characteristics and radiographic parameters, and postoperative complications.

Results

The average age of the patients was 41.2 years, and there were 67 men and 8 women. There were no postoperative complications in any patient, and no patient showed evidence of device breakage or nonunion. All patients achieved bony union. The mean radiographic fracture union time was 84 days after surgery (range, 64-179 days).

Conclusions

In this study, there were no complications in all 75 patients, and fracture union was achieved. There may be concerns that clavicle shaft fracture surgery using a 2.7 mm LCP plate may have a higher incidence of complications such as device breakage, nonunion, and malunion compared to existing devices due to the weak fixation force caused by the small-diameter screws. However, the 2.7 mm LCP is a device that can obtain sufficient fixation force with a low profile, and it is thought that there is no need to place any restrictions on its use compared to existing devices in clavicle shaft fractures.