

# Technical difficulties of removal of locking screw after locking compression plating

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## Abstract

**Introduction** As there are few reports on the difficulties of removing the locking compression plate (LCP), we prospectively investigated the incidence and difficulties in 58 patients in whom various types of LCPs were taken.

**Methods** From January 2004 to December 2007, we have removed 159 5.0-self tapping locking screws and 279 3.5-self tapping locking screws. All of the operations were performed by experienced trauma surgeons. All of the screws were inserted with the use of torque limiting attachment according to the manufacturer's recommendation. During the same period of time we have removed 198 AO-3.5 cortical and 4.0 cancellous screws from various sites.

**Results** All of 159 5.0-self tapping locking screws were removed without difficulties. A total of 24 out of 279 3.5-self tapping locking screws were removed with many difficulties due to the stripping of the hexagonal recess. The use of conical extraction screw which was developed especially for the removal of stripped locking screws was successful in only six screws. We have removed plates by cutting the plate with metal cutting saw. We describe useful technical trick to remove the plate when there is only one screw left stripped. Compared to the locking screws, only one of 198 3.5-cortical screws was stripped.

**Conclusion** Care should be taken at the time of removal of the locking compression plate, especially for the 3.5-locking screws.

**Keywords** Locking compression plate · Locking screw · Removal · Stripping · Technique

## Introduction

The locking compression plate (LCP, Synthes: Paoli, PA, USA) has been introduced as a new standard of AO plating osteosynthesis combining the advantages of the conventional plate and the internal fixator [3, 4, 10, 16, 20]. Various technical tips and guidelines for this rather new device presented with many biomechanical studies [5, 23, 24]. Several promising early clinical results have been reported [1, 13, 17, 22]. Some technical pitfalls and complications in the use of LCP were reported [21]. To the best of our knowledge, there is no report on the difficulties in removing the LCP due to the stripping of the hexagonal recess and threads of the locking screw head. We prospectively collected the data related with the difficulties of locking screw removal since we have experienced this problem for the first time in 2004. During the same period of time we recorded the removal process of AO-3.5 cortical and 4.0 cancellous screws from various sites. The purpose of this study was to report the incidence of the stripping of the locking screw and our experience of taking the stripped locking screws as compared to the conventional screws.

## Materials and methods

From January 2004 to December 2007, we have removed 159 5.0-self tapping locking screws and 279 3.5-self tapping

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