

PRESENTATION 1

Is a Single Plate Enough? Primary Surgical Fixation Methods for Distal Femoral Fractures

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Background

Distal femoral fractures are notoriously complex to surgically fix. Currently, the majority are fixed using a single locking plate. However, surgeons at the major trauma centre of University Hospital Coventry and Warwickshire (UHCW) have observed a large number of single locking plates failing, resulting in a revision surgery with alternative or supplementary fixation being required. This project's aim was to establish the complication and revision rates of single locking plates and to compare outcomes with double locking plates used in primary surgical fixation of distal femoral fractures at UHCW.

Methods

Patients were identified using operating procedure codes matching surgical fixation of distal femoral fractures between June 2016 and June 2019. Retrospective analysis of clinic letters, theatre notes and x-rays for 53 patients with single locking plates and 13 patients with double locking plates was performed.

Results

12 patients (32%) with single locking plates suffered complications, with 9 (24%) requiring a revision surgery. This compares to only 2 patients (15%) within the double locking plate group. The most common complication of single locking plates was plate breakage before union (21%). Periprosthetic fractures and increasing age reduced the success rate of single locking plates.

Key messages

1 in 3 single locking plates suffered complications compared to 1 in 7 double locking plates, meaning single locking plates are 2.6x more likely to fail. This rises to 3.7x in those with a periprosthetic fracture. Therefore, double plates should be adopted as the primary fixation method for distal femoral fractures, especially with periprosthetic fractures.

