Title of Presentation:

Intra-operative Fracture Using a Lateral Entry Femoral Nail

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Learning Objectives (After attending this session, the attendee should be able to):

- identify the concern with using any new implants requiring a change in customary technique. In addition, the attendee should be more familiar with both the history and development of the femoral nail.

INTRODUCTION:
In an effort to eliminate soft-tissue injury with antegrade femoral nailing, a recent nail design called the Titanium Cannulated Lateral Entry Femoral Nail (Synthes USA, Paoli, PA) moved the start point lateral and distal to the gluteus medius tendon insertion. Futhermore, this nail has a helical shape in an effort to decrease bone stress and reduce the likelihood of iatrogenic intra-operative fracture.

CASE:
An nineteen year-old female involved in a motor-vehicle collision sustained a closed right diaphyseal femur fracture. The patient underwent spine, ante grade nailing of the fracture. The device used was 10mm x 40cm Titanium Cannulated Lateral Entry Femoral Nail (Synthes USA, Paoli, P A). Operative technique was performed as described in the technique manual for the product. Plain radiographs of the hip taken in the post-anesthesia care unit clearly demonstrated an oblique fracture of the proximal femur starting from a lateral point below the vastus ridge to a medial point 1 em below the lesser trochanter. It did not appear to involve the starting hole.

DISCUSSION:
There is a learning curve associated with using the trochanter as a starting point. One study claimed that the learning curve can be overcome with each surgeon in the group averaging 6.4 cases during the learning curve. The primary surgeon (D.B.) in this report is well beyond this learning curve for the standard trochanteric starting point at the tip of the trochanter. The design of the Lateral Entry Femoral Nail includes a greater lateral proximal (valgus) bend of 10 degrees. This is similar to the proximal bend in the original Gamma Nail which was subsequently revised to a 4 degree bend. The increased bend of the LEFN is to avoid damage to the gluteus medius tendon that occurs with utilizing the tip of the trochanter as a starting point. The “fissuring” of the proximal femur that occurred in our case has been reported in Gamma Nail cases in the past.

CONCLUSION:
Caution should be exercised with the use of any new implant requiring a change in customary technique. This case report may just be an example of the learning curve associated with the device; however, some concern must be raised by the amount of offset from the top of the nail to its long axis.