

Removal Of Broken Intramedullary Femoral Nail With An Unusual Pattern Of Breakage: A Case Report

Liong MF, Ezrat B Samadi, Felix LYS

Jabatan Ortopedik & Traumatology, Hospital Ampang, Selangor

INTRODUCTION:

Intramedullary nail is commonly used to treat femoral shaft fractures and it is subjected to cyclical loading which may develop fatigue failure if the stresses on the nail exceed its endurance limit. The result is that the nail breaks and removal of the fragments is not always a simple procedure. We reported a unique case with implant failure twice after interlocking nail of right femur and a 3 parts broken intramedullary femoral nail.

MATERIALS & METHODS:

18-year-old man sustained closed comminuted subtrochanteric femur fracture which stabilised with 10 by 400 mm intramedullary femoral nail. Eight months later he presented with right thigh pain without preceding trauma. X-ray showed two-part broken intramedullary nail with non-union right proximal third femur fracture. He underwent removal of broken implant and reinsertion of intramedullary femoral nail sized 11 by 400 mm. Two years later he presented again with acute onset of right thigh pain and inability to weight bear. Plain radiographs revealed right femoral non-union and a three part broken nail. There was no evidence of infection.



Figure 1: A three part broken nail with non-union right femur. Nail breakage at the non-union site.

RESULTS:

Patient was positioned on traction table. The proximal nail fragment removed via previous entry point. Another incision made over non-union femur fracture site to reach middle and distal nail fragment which removed via pull out technique using bone rongeur. Intraoperatively, there was no sign of infection and abundant fibrous callus seen over femur non-union site. New intramedullary femoral nail sized 11 x 380 mm inserted after fracture site well

compressed.



Figure 2: Intramedullary femoral nail broken in 3 parts removed completely.

DISCUSSIONS:

Multiple techniques for broken nail removal have been described and retrieval of the distal fragments without destructive surgery remains a challenging problem with no universally accepted technique. A combination of methods through the entry point and nonunion site still remains a useful method for the removal of a broken femoral intramedullary nail with this unusual pattern of breakage. Causes of non-union need to be identified and treated accordingly to prevent implant failure and improve union progress.

CONCLUSION:

The removal of a nail with this type of breakage through the fracture site is a good option. Combined techniques of removal are sometimes required for unusual patterns of nails breakage.

REFERENCES:

Strategies Trauma Limb Reconstr. 2009 Dec; 4(3): 151–155.