

Alpha technique fixation for Young High Pauwel Neck of Femur (NOF) fracture

Keshov C, Syauqat A, Viknesh D, Dhanraj N, Sankar H, Manoharan K
Orthopaedic/ HRPB, Perak.

INTRODUCTION

Neck of femur (NOF) fractures in young adults are often due to high energy trauma and commonly associate with avascular necrosis (AVN) of femoral head and non-union due to acute disruption in the blood supply to the femoral neck.

Cannulated screws are commonly used device to fix these fractures. Recent studies shows high rates of AVN and mechanical failure rates with traditional inverted triangle screw fixation technique due to unfavorable biomechanical environment such as the huge shearing force, bending and tensile deformation across the fracture site¹.

In this case report, we present our experience using crossed- screw technique using Alpha technique to fix a high Pauwel NOF fracture which probably the first reported in Malaysia. The cross screw provide an anti-shearing component force which can confront the shearing physiological load and decrease interfragmentary motion

REPORT:

A 23 years old gentlemen was involved in a MVA. Examination showed tender left hip in which a pelvic radiograph done showing a high Pauwel (90 degree) NOF.



Figure 1: Trauma X-Ray left NOF

Screw fixation using Alpha technique configuration was done. Good reduction and compression of the NOF fracture was achieved. He was allowed home with strict non-weight bearing ambulation. Subsequent follow ups showed good result. The fracture have united. Patient is able to weight bear without pain.



Figure 2: Immediate check XR



Figure 3: 4 months post fixation

CONCLUSION:

Cannulated screw fixation in Alpha configuration provided a good fixation technique for high Pauwel due to its biochemical property that it provides controlled dynamic axial compression force which as a whole acts as an interlocking fixation

REFERENCES:

1. Jiang D, Zhan S, Cai Q, Hu H, Jia W. Long-term differences in clinical prognosis between crossed- and parallel-cannulated screw fixation in vertical femoral neck fractures of non-geriatric patients. *Injury*.2021Nov;52(11):3408-3414.doi: 10.1016/j.injury.2021.07.014. Epub 2021 Jul 10. PMID: 34281695.