

## Supplemental Femoral Neck Buttress Plate for Displaced Femoral Neck in Pediatric: A Case Report

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### INTRODUCTION:

Paediatric femoral neck fractures accounts for <1% of all fractures in children<sup>1</sup> and are usually caused by high- energy trauma due to motor vehicle accidents and fall from height. Surgical options may vary based on age, Delbet classification and degree of displacement of the fracture. Here we reported a case of pediatric femoral neck fracture with significant displacement treated with compression screw supplemented with femoral neck buttress plate.

### REPORT:

12-year-old girl presented with pain and swelling over right hip after motor vehicle accident. Upon examination there was shortening of right lower limb with tenderness over her right hip region with limited range of motion over right hip. Radiograph of Pelvis (Fig 1) and CT pelvis was done. Closed fracture neck of femur (Delbet type 1B) with posterior column acetabular wall fracture was diagnosed. Fractured femoral head was impacted into the acetabulum due to high velocity trauma. Patient subsequently underwent open reduction, screw fixation and 1/3 tubular plating of right neck of femur. Intraoperatively, there was medialization of femur head into the acetabular wall. Reduction of femoral neck was subsequently achieved under direct visualization with the acetabular fragment fall backs in place. Two cannulated screw size 6.5mm was inserted and subsequently augmented with buttress 3.5mm 1/3 tubular plate to provide extra rotational stability.

Post Operatively, Radiograph of Pelvis (Fig 2) was acceptable as fracture was anatomically reduced.



Figure 1: Preoperative pelvic radiograph



Figure 2: Postoperative Pelvic Radiograph

### CONCLUSION:

The primary objective during operative intervention should be achieving an anatomical reduction, and urgent treatment within 24 hours is essential to minimize the risk of avascular necrosis and other complication. By adding buttress plating on screws construct improves the construct stiffness biomechanically and significantly strengthened the primary fixation by 83%.<sup>2</sup>

### REFERENCES:

1. Beaty JH, Kasser JR. Rockwood and Wilkins. Fractures in Children. 2010. p. 769-96
2. Kunapuli, S. C (2015). Biomechanical Analysis of Augmented Plate Fixation for the Treatment of Vertical Shear Femoral Neck Fractures. Journal of Orthopaedic Trauma, 144-150