

Pushing Limits: Innovative Surgical Solutions for Intertrochanteric Fractures with Multiple Hereditary Exostosis

¹Krishna Kumar, D; ¹Vikneswaran; ¹Sesyindraa C; ¹Abdullah MF

¹Department, of Orthopaedics and Traumatology, Hospital Sungai Buloh, Selangor, Malaysia

INTRODUCTION:

Multiple hereditary exostoses (MHE) is a rare autosomal-dominant disorder causing bony protrusions affecting joints and muscles, resulting in debilitating limb deformities. Rising pertrochanteric fractures in Asia challenge Orthopedic surgeons treating MHE patients with hip deformities, complicating surgical interventions and outcomes.

REPORT:

A 52-year-old Malay male with underlying MHE presented at our facility following a right intertrochanteric fracture from a minor incident. Radiographs revealed bilateral hip valgus deformity and an increased head-neck shaft angle, with computed tomography (CT) scan confirming numerous lytic bony exostosis with a narrow zone of transition and anteversion for surgical planning. Intraoperatively, we placed the patient on traction table, achieving proper reduction and utilizing a reversed long distal femur locking plate through a minimally invasive percutaneous osteosynthesis (MIPO) approach. Post-operative radiographs demonstrated successful restoration of native hip angulation, with the patient's wounds healing well and showing good ambulation progress within 3 months post-surgery.



Figure 1: Pre-operative radiographs

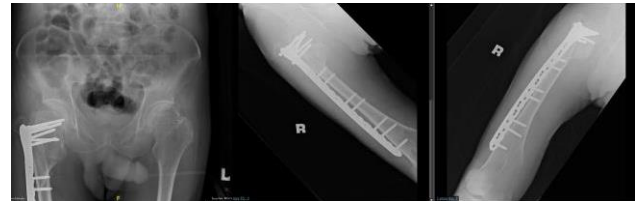


Figure 2: Post-operative radiographs

Various hip deformities such as femoral anteversion, coxa valga, acetabular dysplasia, and hip subluxation have been documented. The incidence of proximal femur lesions ranges from 30% to 90%, and coxa valga from 25%.¹ Traditional cephalomedullary nails with a fixed neck shaft angle of 130 degrees may not accommodate coxa valga. The latest generation of locking plates feature variable angle cones distal to the plate, enabling screws to be locked within a certain range (1-15 degrees) to account for angles. These variable angle screws have threaded heads to prevent cutout even at large obtuse angles. Additionally, the locking plate functions as an "internal external fixator," promoting secondary bone healing when placed in a bridging manner.

CONCLUSION:

This case highlights successful management of MHE-related fractures, emphasizing the importance of precise surgical planning and techniques for optimal outcomes in complex orthopedic scenarios.

REFERENCES:

1. Lee, D.H.; Paley, D. Reconstruction of the Hip in Multiple Hereditary Exostoses. *Children* 2021, **8**, 490. <https://doi.org/10.3390/children8060490>.