

# Operative Planning For Extensive Neurogenic Heterotopic Ossification (NHO) At Medial Aspect Of Hip

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## INTRODUCTION:

Patients with traumatic brain or spinal cord injury are at risk of developing peri-articular NHO most frequently affecting the hip; with resulting ankyloses and functional limitations<sup>1</sup>. Surgical excision aims to improve functional ability and facilitate nursing care<sup>2</sup>. It is technically challenging as NHO development maybe multi-focal and multi-directional around the joint involving important neuro-vascular structures<sup>2</sup>. Plain radiographs often provide sub-optimal information required for surgical planning. Here, we report a rare case of NHO at medial aspect of hip and pre-operative planning for excision.

## MATERIALS & METHODS:

An 18-year-old male presented to us with pain and immobility of his right hip 18-months following a traumatic brain injury. The joint was completely ankylosed and he was unable to walk. Plain radiograph showed extensive NHO from medial aspect of right proximal femur to ischial tuberosity (Figure 1). We ordered a CT scan with 3D reconstruction, which clearly defined the NHO as extending posteriorly from the greater trochanter to ipsilateral pubic ramus and ischial tuberosity (Figures 2a & 2b). We opted for a Kocher-Langenbeck approach and performed selective excision to achieve satisfactory range of motion.



Figure 1: Pelvic x-ray, anterior-posterior.

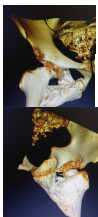


Figure 2a: CT 3D reconstruction, frontal view.

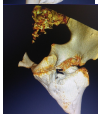


Figure 2b: CT 3D reconstruction, back view.

## RESULTS:

The Kocher-Langenbeck approach enabled us to visualise and access a major segment of the

bone bridge. Excision of NHO began at proximal end of the femur with aim to break the bone bridge between the femur and pelvis to enable hip movement (Figure 3). Limited excision was performed until satisfactory range of motion of hip is achieved as assessed intraoperatively. This is to reduce risk of iatrogenic sciatic nerve injury. 3 months following surgery, the patient can weight bear with 80 degrees of hip flexion with good internal and external rotation.

## DISCUSSIONS:

In this case, plain radiographs did not reflect accurately the pattern of hip NHO. Our initial surgical approach of choice would have been either the Ludloff or the ilioinguinal approach if we had assumed this to be medial NHO of hip<sup>1</sup>. Not only will it be difficult to access and adequately excise the bone bridge, the femoral neurovascular bundle would be at risk of injury via these approaches. Using the information garnered from pre-operative CT, we could optimally identify the approach and understand the true pattern of NHO. With this additional information, we opted for a more conservative excision as more may cause neurovascular compromise, particularly the sciatic nerve.

## CONCLUSION:

NHO at medial aspect of hip is rare and CT scanning with 3D reconstruction should be performed prior to excision as it aids the surgeon in planning the appropriate approach and avoid iatrogenic injury to adjacent vital structures.

## REFERENCES:

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