A Rare Case Of Femoral Neck Fracture In A Young Paralympic Cyclist With Transfemoral Amputation

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INTRODUCTION:

Neck of femur fracture in young population is considered as an orthopedic emergency in current practice and uncommon. It is usually the result of a high-energy trauma and commonly associated with osteonecrosis and non-union of fracture. However, a femoral neck fracture involving young patients who had undergone ipsilateral lower limb amputation previously is even more rare and the management of such case is proven to be a challenge to the surgeon.
With regard to patients with transfemoral amputations, reduced bone mineral density, especially in those using an artificial limb with an ischial bearing socket or a pelvic belt, makes them more susceptible to fracture.

Case Report

A 44 year old male Paralympic cyclist of national team with history of right transfemoral amputation sustained in a motor vehicle accident 15 years before. He was taking part in the Para ASEAN games – track cycling event when he fell down on his right hip. Post event he had severe pain over his right hip and was unable to walk as usual with his prosthesis.

On presentation to our accident and emergency unit radiographs of the pelvis and hip revealed a subcapital neck of right femur fracture (Figures 1-2). We informed him regarding the diagnosis and gave him the treatment option of closed reduction and screw fixation under our emergency surgery list and proceeded with surgery on the same day.

At surgery, the challenge that we faced was to position the patient on the traction table to aid closed reduction. We achieved that with the aid of a 5mm Schanz pin inserted anteriorly to posteriorly at the level of femoral shaft (to avoid the previously inserted compression plate). After successfully positioning the patient on the traction table, we managed to get anatomical reduction using closed reduction method. The fracture was fixed with 3 7.5mm partially threaded screws in triangle position. Surgery lasted for 1 hour.

Figure 1: Pre-op x-rays

Figure 2: Intraop and post-op

DISCUSSIONS:

Neck of femur fracture in ipsilateral lower limb amputee remains a challenging problem for orthopedic surgeons. Only few cases were reported and the treatment varies according to age and time of presentation. The best option available in acute femoral neck fractures is still closed reduction and screw fixation. The peculiarities in positioning the patient on traction table has resulted in creative solutions including usage of Schanz pin and Steiman pins to provide traction point.

CONCLUSION:

We feel that this method of positioning will be useful for other surgeons to replicate in cases of similar presentation.

REFERENCES:

1. Freitas A et al. Femoral neck fracture in a transfemoral amputatee. JBJS Case Connector. 2015 Jul:5(3):e58