

CASE REPORT

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Bilateral Subcapital Femoral Neck Fracture in a 28 Year Old Postpartum Woman

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ABSTRACT

Introduction: Subcapital femoral neck fractures are associated with high morbidity and mortality. These fractures mostly occur as a result of a high-force impact from traffic accidents and a fall from a great height, though non-traumatic forms are described in transient osteoporosis during the second half of pregnancy, in convulsions during electric shock, eclampsia, hypocalcemia, osteomalacia, renal osteodystrophy and myeloma. **Case report:** In this report we present a bilateral subcapital femoral neck fracture in a woman sustained two days after delivery. The right hip fracture was treated with fixation using three spongious screws without capsular decompression, while for the left hip a capsular decompression by open reduction and fixation was performed. Physical treatment based on active and passive movements was immediately initiated. The patient was able to rest upon her right leg within seven and upon the left leg within eight months. X-Rays showed the accurate position of fragments and implants throughout the recovery period. Twelve years later, the patient made a full recovery and the x-rays showed that both femoral heads are vital and fully recovered. **Conclusion:** Early anatomical reconstruction followed by internal fixation is crucial in the prevention of long-term complications. Complications of internal fixations include non-union (10-30%), avascular necrosis (15-33%), deep vein thrombosis and pulmonary embolism.

Keywords: Bilateral femoral neck fracture, early anatomical reconstruction.

1. INTRODUCTION

Bilateral femoral neck fractures are very rare, and there are only few cases described in the literature. These fractures mostly occur as a result of a high-force impact from traffic accidents and a fall from a great height, though non-traumatic forms are described in transient osteoporosis during the second half of pregnancy (1), in convulsions during electric shock, eclampsia (2), hypocalcemia, osteomalacia, renal osteodystrophy and myeloma.

In younger patients treatment has to be immediately initiated (3). Early anatomical reconstruction followed by internal fixation is crucial in the prevention of long-term complications. The treatment depends on a degree of dislocation and the patient's age. In younger patients these fractures are stabilized by internal fixation using cannulated screws (placed percutaneously or along with the open reduction), or by hemiarthroplasty in the elderly (4-10).

Early anatomical reconstruction followed by internal fixation is crucial in the prevention of long-term complications. Complications of in-

ternal fixations include non-union (10-30%), avascular necrosis (15-33%), deep vein thrombosis and pulmonary embolism (3, 6, 8).

2. CASE REPORT

Patient's discomfort started a month before giving birth to a child. However, precise information could not be obtained neither from the patient nor her family. Allegedly, she sustained an injury to her left hip from a fall and since then could not walk, but the x-ray was not performed due to her late pregnancy (Figure 1). Apparently, she could rest upon the left leg with some assistance. The right hip was injured immediately after giving birth when the patient rose from a bed with the nurse's assistance and fell on her right hip (Figure 2).

After necessary preparations, on a traction table of the operating room we performed the reduction of the right hip fracture as well as the percutaneous screw fixation without capsular decompression (Figure 3).

The satisfactory reduction was not achieved to the left hip that was suspected to have been fractured a

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Figure 1. X-ray performed after delivery



Figure 2. CT scan of hip bones



Figure 3. Right hip treated with percutaneous screw fixation without capsular decompression



Figure 4. On left hip we performed capsular decompression by open reduction and fixation



Figure 5. X-ray after surgery



Figure 6. X-ray twelve years after surgery

month earlier, thus we performed capsular decompression by open reduction and fixation (Figure 4).

Immediately following the procedure, the patient's general condition was good and lab reports (including hormones) were in normal level range. We immediate-

ly initiated a physical therapy consisting of active and passive movement exercises. The patient was able to rest upon her right leg within seven and upon the left leg within eight months. Two months later she was able to walk with crutches with full weight-bearing. X-Rays

were showing the accurate position of fragments and implants throughout the recovery period (Figure 5, 6). Control examinations were performed once a year.

Twelve years later the patient suffers no discomfort, the full amplitude of the motion of both hips joints is reached and she eventually returns to her normal daily life (Figure 7).

X-Rays show that both femoral heads are vital, and that fractures are healed with both femoral necks shortening (Figure 6). The patient refuses removal of osteosynthesis material. There is no sign of any degenerative changes on both hips.

3. DISCUSSION

Even though these fractures are more common in the elderly population having osteoporosis, they occur in young population and children as well (6, 7, 11). The mechanism of injury in a fracture can be both indirect and direct. In indirect mechanism that occurs more often in the elderly people during a fall, the leg rotates externally while the femoral head is fixed in the hip capsule, thus the femoral neck suffers great stress (3, 9). In direct mechanism the fracture occurs upon high-force impact on the greater trochanter, so the force is transmitted axially through the femoral neck (3, 8).

In this particular case bilateral femoral neck fracture was stabilized by an internal fixation using cannulated screws, but the impact that the time span between surgery and the moment of the fracture occurrence had on the surgical procedure and recovery was evident. The fracture of the right hip was stabilized just couple of days after the moment of a fall by performing a closed reduction, thus allowing for an earlier recovery in relation to the left leg. As for the left hip fracture, which is supposed to have happened a month prior to giving birth, a capsular decompression and open reduction with fixation had to be performed. Consequently, walking and resting on this leg was delayed, but in a while this difference has decreased thus the full recovery of both sides was confirmed both clinically and by x-rays.

• Conflict of interest: none declared.

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Figure 7: Control examination twelve years after injury