



Fracture of Collum Femoris Secondary to Gunshot Wound: A Lucky Patient Who Didn't Have Any Additional Injury

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Abstract

Gunshot injuries are rising in most countries in the last decades. Gun shot wounds in extremities result complicated bone fractures and related complications like infection, nonunion, malunion. Also, vascular and nerve injuries result from gunshot wounds. We report the case report of a 32-years male who underwent gunshot to the proximal femur. He had only nondeplase collum femoris fracture which was treated succesfully without any complication. We think that it is a big chance for patient having this progress in this severe trauma.

Keywords: Gunshot wound, collum femoris fracture, chance

INTRODUCTION

Firearm injuries (FAI) are encountered more and more every day amid military conflicts, increased terror incidents, easy access to weapons, and an increase in crime rates in modern civil societies. All extremity FAI are considered Gustilo type 3 open fractures. In addition to severe bone lesions and direct effects due to high-energy trauma, gunshot wounds cause additional morbidities such as amputations due to severe soft tissue injuries, vascular and nervous injuries and mortalities due to additional organ injuries (1,2).

CASE REPORT

We present a 32-year-old male patient who was brought to Okmeydanı Research and Education Hospital Emergency Department due to a FAI in October 2015. Physical examination of the patient who had an FAI in the right hip region after a close shot with a pistol demonstrated that his vital signs were stable. There was an entrance hole laterally over the right trochanter major. The neurovascular examination of the extremity was normal (Figure 1). In the radiological evaluation, there was a non-displaced right femoral neck fracture (Figure 2).

No pathological sign was detected in lower extremity vascular assessment (Figure 3). The bullet core was found in the anterior part of the bladder. No additional organ injury was observed. After the local and systemic evaluation of the patient, he was prepared for surgery 6 hours after injury. Lateral decubitus position was given after spinal anesthesia. After the inlet and outlet holes were debrided, they were washed with saline with rifocin. A 2-3 cm lateral incision extending from the tip of trochanter major to distal part was made (Figure 1). The femoral neck fracture was fixated with three cannulated screws under scopy control (Figure 4). The operation was terminated after the stability was tested with scopy. Triple antibiotic therapy was applied for five days, and the patient was discharged after training about crutch use. Partial load was started to be applied after eight weeks. Full load was started to be applied at 3rd month. No problem was observed at 4th, 5th, and 6th-month follow-up visits.

DISCUSSION

Gunshot wounds are increasingly encountered in modern life in recent years. Due to the high energy, and blastic and thermal



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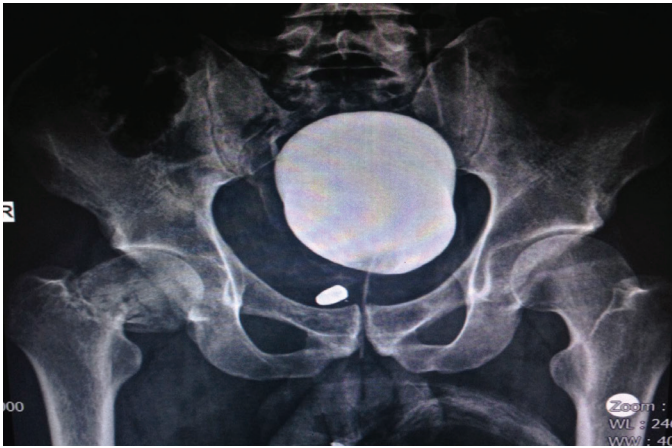


Figure 1. Pre-operation X-ray of the patient



Figure 2. No pathological sign was observed in the vascular evaluation of the lower extremity



Figure 3. Clinical image of the patient

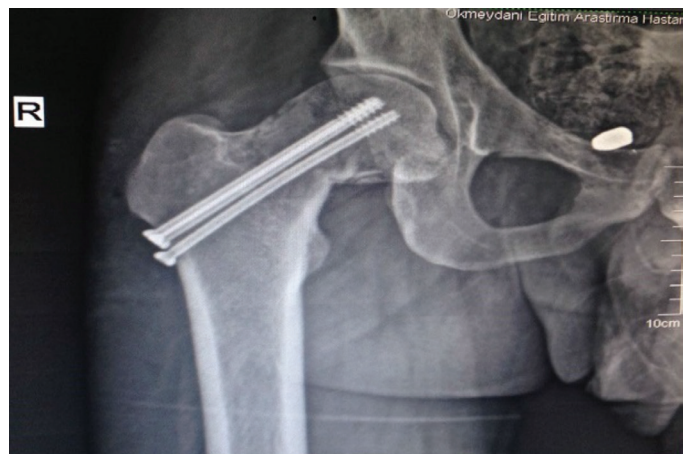


Figure 4. Post-operation X-ray of the patient

effects they create, FAI cause serious morbidity as well as mortality (1-4).

Since extremity injuries occur in half of the FAI, orthopedists also frequently face FAI (2). Bone fractures are seen in a high rate of these cases, and these cases are accepted as type 3 fractures according to the Gustilo classification (5). In most cases, fractures

are fragmented in which treatment is long and complicated, recurrent surgical interventions are required, serious sequelae remain, and infections are frequently observed during follow up. Previous studies reported a 2-11% infection and up to 5% nonunion in extremity injuries due to FAI (2,6-8). In this case, a non-displaced fracture occurred at the femur neck, and the

fracture was fixated with early surgical intervention. No infection was seen during patient follow-up. Nonunion or malunion was not observed.

In cases of FAI, in addition to soft tissue and bone injuries at extremities, peripheric vascular injuries are seen up to 6% due to the direct effect of high-energy created by firearms, and blastic and thermal injuries. Vascular injuries, especially arterial injuries, may cause serious problems that threaten the extremities and also the life of the patients. In such cases, exploration should be done without any delay (5,9). Although the injury was due to a close shot, and it was at femur neck which is a vascularly important region, no peripheric vascular injury was seen.

Previous studies have reported that peripheric nerve injuries may be seen in up to 9% of FAI. There is no consensus in the literature about performing a nerve exploration and timing of it after peripheric nerve injuries. However, more commonly, an exploration is not recommended (10,11). Especially in proximal thigh injuries, as in our case, because the reinnervation distance from the first motor point to endpoint is long, the chance of success is low. In our case, the absence of peripheral nerve injury was a great chance for the patient.

In the FAI affecting the extremities, additional organ injuries can also be seen along the path that the bullet takes in the body, which will increase the risk of mortality and morbidity. In this case, the bullet nucleus that entered from the right hip region laterally made an internal advance to the anterior bladder by moving towards the medial, and the bullet nucleus was detected in the anterior part of the bladder.

CONCLUSION

Although it caused femur neck fracture, it didn't cause additional organ injuries like femoral vascular or nervous injury, or bladder injury.

In this case, the patient, fortunately, survived without many sequelae, although he had a close distance shot at proximal thigh, which is a region where severe bone, vascular, nerve, and organ injuries can occur.

Ethics

Informed Consent: Was taken.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: A.Ç.T., Concept: B.K., Design: A.Ç.T., Data Collection or Processing: E.T., Analysis or Interpretation: H.G., Literature Search: B.K., Writing: B.K.

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