



Post Traumatic Closed Fracture Shaft of Femur Associated With Lower Extremity Neurovascular Injury with Spontaneous Recanalization of Vessels- A Rare Case Report

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Conflicts of Interest: Nil.

Abstract

Fractures of the shaft of the femur are among the most common fractures in orthopedic Practice¹. Although associated sciatic nerve injury may occur, femoral and obturator nerves injury are uncommon^{2,3}. Deep venous thrombosis is rarely associated with fracture shaft of femur. We are presenting a case report of a patient having shaft of femur fracture associated with femoral-sciatic nerve injury and arterio-venous thrombosis. Shaft of femur fracture associated with combined Neuro vascular injury has not be reported in literature.

Case Report

A 27 year old man presented with swelling and mild numbness of right lower limb of two days duration after sustaining lower limb trauma diagnosed as fracture mid 1/3rd shaft of femur with vascular injury (Figure 1,2).

Examination revealed cold clammy skin of thigh and leg, few dilated veins in the leg and the upper half thigh without any blisters with absent distal lower limb arterial pulsation along with absent movement of toes, absent dorsi flexion, plantar flexion of foot, absent knee

extension, sluggish capillary refill and mild swelling of thigh.

Sensory examination revealed hypoaesthesia at medial aspect of leg, medial dorsal and lateral border of foot. All blood investigations were normal.

Coagulation profile PT, INR, APTT initially it was 14.7, 1.06, 23.7 respectively.

Colour Doppler study done outside reported deep vein thrombosis of posterior tibial, ant tibial and popliteal vein. repeat color Doppler after 48 hrs suggested acute deep venous thrombosis extending from distal superficial femoral vein to popliteal, ant tibial and proximal part of posterior tibial vein along with low resistance arterial spectrum seen in the popliteal, anterior and posterior tibial artery. Conclusion of Doppler was Superficial femoral vein showing echogenic thrombi in the lumen with partial recanalisation with intraluminal arterial blockage.

CT angiography study for bilateral lower limb was done in arterial and venous phase showing non visualised distal third of right superior femoral artery (extending 4cm) with distal part reconstructed with collaterals with rest normal study of lower limb arterial system.

Canalisation of thrombus distal third of right superior femoral vein with partially canalised thrombus in right peroneal vein and posterior tibial vein.

Treatment

The patient was treated with low molecular weight heparin (LMWH) for 6 days and Acitrom (warferin) 1mg OD for three days then 2mg OD along with Monotrate 10mg and StiloZ(cilostazol) 50mg to maintain the INR between 2-3 alongwith Tab Nervemax 75mg od. Fracture shaft of femur was fixed subsequently with interlocking nail after 2 weeks post injury and fracture united in 24 weeks. NCV done 3 weeks after injury revealed conduction deficit in sciatic and femoral nerves of right side. Neuropraxia spontaneously recovered with time and femoro-sciatic nerve functions gradually becomes normal over a period of 8 weeks.

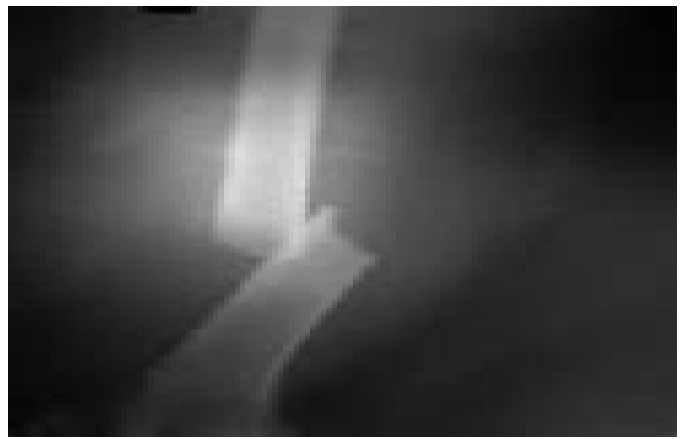


Figure 2: Showing fracture Mid 1/3 rd Shaft of femur

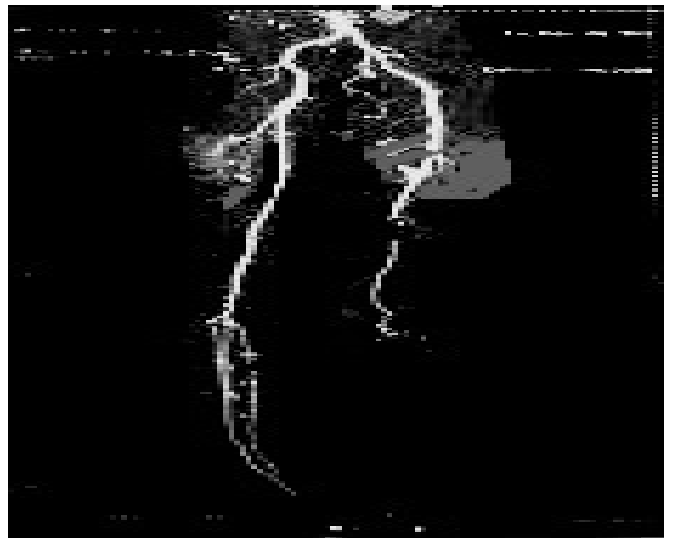


Figure 3: Showing non visualisation of flow in distal part of femoral artery and popliteal and anterior and posterior tibial arteries.



Figure 1 : Showing Swelling and deformity over Right thigh



Figure 4: showing Post operative Xray after Intramedullary nailing for fracture shaft of femur.



Figure 5: Showing recovery of femoral and sciatic nerve function after 8 weeks

Discussion

Primary nerve injury following femoral shaft fracture is rare. Isolated case reports exist in the literature. Although associated sciatic nerve injury may occur, femoral injury is uncommon¹. Generally good neurological recovery and good function recovery occurs. Regardless of the mechanism of injury, Patients are treated conservatively because improvement in function is greater than 80% for tibial division distribution and approximately 60% for peroneal nerve³. Recovery in the tibial nerve far exceeded that in the peroneal innervated structures. Femoral nerve is usually damaged in pelvic fractures and association with isolated fracture femur is rarely seen. Vascular injury following femoral shaft fracture is rare. The incidence is quoted as 0.7-2% of all femoral shaft fractures². Risk factors convincingly demonstrated for deep vein thrombosis include increasing age, prolonged immobility, malignancy, major surgery, multiple trauma, prior VTE, and chronic heart failure. In our case there is traumatic fracture shaft of femur associated with both sciatic and femoral nerve injury along with complete occlusion of femoral artery reconstructed with collaterals and deep

vein thrombosis which developed shortly after trauma and get partially canalised with in 48 hrs is a rare occurrence.

Conclusion

Femoral shaft fractures of middle 1/3 rd can rarely presents with femoro-sciatic nerve injury and can also have acute arterial and venous thrombosis. This sequence of association is not reported in literature and surgeon should be aware of these associated entities.

Reference

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