

Traumatic Occlusion of Common Femoral Artery Secondary to Motorcycle Handlebar Injury: A Case Report

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Abstract

Background: Motorcycle accidents are very common in Thailand, especially in the rural area. Injury of common femoral artery secondary to motorcycle handlebar is rare. We reported such case in our experience.

Method: A case of traumatic occlusion of common femoral artery secondary to motorcycle handlebar injury was reported. The mechanism of such injury was reviewed from the literature.

Result: A 40-year-old man was referred from a district hospital with the symptom of intermittent claudication of right leg for 2 months following motorcycle accident. Computerized angiogram (CTA) revealed total occlusion of right common femoral artery. He was taken to surgery for revascularization.

Conclusion: The characteristic mode of injury combined with physical findings should give early diagnosis with subsequent radiographic studies. Surgical revascularization can give good results.

INTRODUCTION

Motorcycle accidents are very common in Thailand, especially in the rural area. Usually the injured organs are head, chest, abdomen and long bone. Injury of common femoral artery secondary to motorcycle handle bar is rare. The lack of familiarity with this uncommon injury may contribute to delayed diagnosis and treatment. We reported here one case and reviewed the literature about its mechanism of injury, clinical manifestation, and management.

CASE REPORT

A 40-year-old man was referred from a district hospital with the symptom of intermittent claudication of right leg for 2 months, and the physical examination

revealed absent pulse of right lower extremity. He had no underlying disease. He had a history of motorcycle accident 2 months ago. He fell from his motorcycle and the handlebar struck on his right groin, but he could stand up and drove to his home. That night he felt numbness and pain on right leg, and also noted a small mass on his right groin which disappeared a few days later. Intermittent calf claudication had been presented since then. Computerized angiogram (CTA) revealed a total occlusion of right common femoral artery (Figure 1). He was taken to surgery for revascularization. First the superficial femoral artery was dissected and isolated. There was dense adhesion around the common femoral artery, so the right external iliac artery was dissected and isolated extraperitoneally through separate inguinal incision

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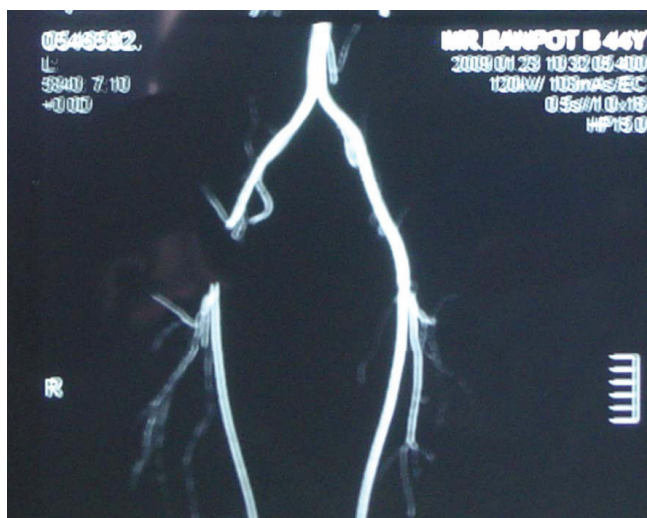


Figure 1

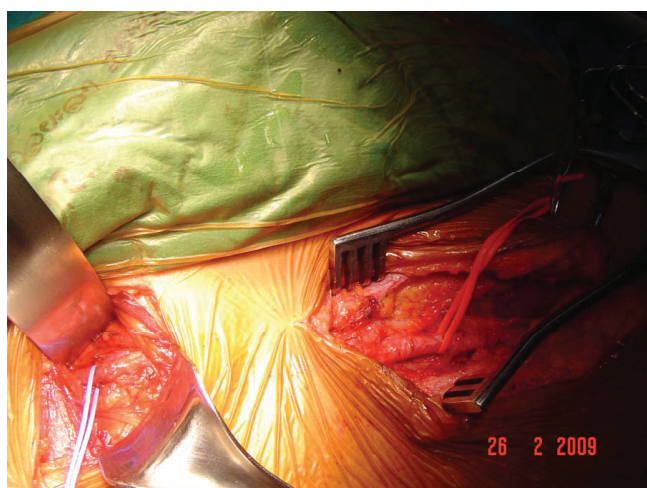


Figure 2

(Figure 2). A 8-mm ring - PTFE graft was interposed between external iliac artery and superficial femoral artery with end- to-side anastomosis on both proximal and distal end to bypass common femoral artery and reconstitute flow to lower leg. Post-operative CTA showed good flow to lower leg.

DISCUSSION

Although blunt trauma from motorcycles are common, injury of common femoral artery caused by handlebar impact is rare.¹ The first report from Rich² in 1975 described a patient who had blunt injury and thrombosis of the common femoral artery after striking his groin on a motor scooter handlebar. There are few

other reports of this kind of injury caused by bicycle handlebar. In 1986, Stanton et al. reported an 11-year-old boy who had an acutely ischemic lower extremity 48 hours after a handlebar injury.³ He was found to have arterial occlusion at the level of the inguinal ligament. In 1989, Kioumehar et al. reported on a 15-year-old boy who had calf claudication 8 months after a handlebar injury to the groin.⁴ A high-grade stenosis of the common femoral artery was revealed by means of angiography. In 1999, Roth and Boyd described a case of 30-year-old man who had an acute limb ischemia after striking his groin on a bicycle handlebar.⁵ He was found to have an arterial occlusion at the level of the inguinal ligament. Sarfati et al.,⁶ in 2002, reported another two cases and explained the mechanism of such injury. The femoral artery passes over superior pubic ramus and femoral head in a superficial position at the level of inguinal ligament. The femoral artery is relatively immobile because of tethering from arterial branches, periadventitial connective tissue, and the femoral sheath. This lack of mobility renders the common femoral artery vulnerable to compression against the underlying osseous structures. When someone falls from a bicycle or motorcycle, his groin maybe struck by the handlebar. Sometimes the impact site has a relatively small area just over the common femoral artery. As a result, a seemingly trivial injury can result in significant force being applied to the artery. It is therefore important to maintain a high degree of suspicion for serious injury when handlebar impact has occurred. The lack of familiarity with this uncommon mode of injury may contribute to a delayed diagnosis. Surgical repair can be accomplished by standard technique, usually with a prosthetic or autogenous graft for children.⁷ In this patient we performed a bypass graft because of dense adhesion around the injured artery. Another reason was that extensive dissection should be avoided for interrupting the collateral vessels.

CONCLUSION

The possibility of common femoral artery injury should be considered in patients who have sustained motorcycle or bicycle handlebar trauma. Prompted diagnosis can be made on the mechanism of injury and physical examination. Surgical revascularization can give good results.

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