

## Accidental pelvic haemorrhage following femoral arterial cannulation in coronary artery bypass grafting patient- A case report

Sinha N, Puri R, Arshad Z

### ABSTRACT

Massive concealed pelvic haemorrhage due to femoral arterial cannulation in a coronary artery bypass grafting case is relatively rare, difficult to diagnose on operating table, and can be life-threatening. We report a case of massive concealed pelvic haemorrhage with retroperitoneal haematoma that developed in a patient after femoral arterial cannulation with multiple attempts. The only clue lies in a falling haematocrit with a degree of suspicion for this iatrogenic injury. This case demonstrates the importance of sequentially measuring the haematocrit and dangers of inappropriate technique of femoral arterial or venous cannulation.

**Key words:** pelvic haemorrhage, CABG, retroperitoneal haematoma, emergency laparotomy

### INTRODUCTION

Although most cases of pelvic haemorrhage are associated with blunt trauma, cardiac catheterization; spontaneous bleeds in patients on anticoagulants; accidental internal iliac vein injury with a long femoral arterial catheter is a relatively rare complication.<sup>1</sup> Interventional radiologists and cardiologists have identified predisposing factors, typical presentation, and clinical course of this iatrogenic complication.<sup>2</sup>

Pelvic haemorrhage in operating room is often difficult to diagnose and can masquerade and confuse with haemodynamic instability in coronary artery bypass grafting (CABG) patients.<sup>1,2</sup> The only sign is a consistent slow fall in haematocrit to dangerous levels with lower abdominal distension. We report a case of pelvic haemorrhage due to iatrogenic internal iliac vein injury from a long femoral arterial catheter (SECALON T) in a short fatty woman posted for CABG, with emphasis on the difficulty in diagnosing pelvic hemorrhage in operating room.

### CASE REPORT

A 50-year-old woman presented with a history of coronary artery disease with triple vessel disease. She was given standard narcotic based general anaesthesia, and post intubation, femoral arterial cannulation was performed via left femoral artery access. A long femoral arterial catheter SECALON T was inserted into the femoral artery. The procedure required multiple attempts due to high fatty

content and difficulty in palpating the femoral artery; and there was accidental entry into the major veins. During surgery, patient received a bolus of 15,000 units of heparin following the completion of dissection of left internal mammary graft. Up to this point of time, vital signs were normal. Just after heparin administration haemodynamic instability started. She became slowly hypotensive. Initially, it was corrected with inotropes and vasopressors, but the requirements for inotropic support and fluids gradually increased. Routine cardiac evaluation during distal anastomosis through Trans Esophageal Echocardiography (TEE) revealed no new wall motion abnormalities or any significant finding. On physical examination, the patient was pale with mild lower abdominal distension. There was no visible bleeding from any other instrumentation sites. The haematocrit continued to fall, and the patient remained hypotensive despite multiple blood transfusions. Midline abdominal incision was given and an emergency laparotomy was performed, but there was no source of bleeding and it was a negative laparotomy. Decision was taken to explore the pelvic space keeping in view of multiple attempts of femoral arterial cannulation for a possible concealed pelvic haemorrhage with retroperitoneal haematoma. The exploration revealed a massive pelvic haemorrhage extending into the retroperitoneum. Site of injury was in the internal iliac vein with a tear measuring about 0.5 × 0.5 cm. Surgical haemostasis was done during which there were wide haemodynamic fluctuations and severe hypotension which was adequately managed. After ligation of the internal

iliac vein patient responded to aggressive fluid and blood transfusions. Haematocrits levels rise steadily and patient was successfully weaned from mechanical ventilation after 24 hours. Postoperative recovery was uneventful.

## DISCUSSION

There have been reports of retroperitoneal haematoma and pelvic haemorrhage after femoral arterial catheterization in cath labs and interventional radiological procedures.<sup>1-3</sup> Occurrence of this complication in non-anaesthetized patients is easily detectable by presentations of nonspecific pain. The incidence of suprainguinal tenderness and fullness can be found in all the cases; severe back and lower quadrant pain in 64% of cases; and femoral neuropathy in 36% of patients.<sup>1</sup> CT scan can be used to diagnose a difficult case but identification of these patients in operating rooms is a real challenge.<sup>4</sup>

Although there are numerous complication of femoral arterial cannulation like puncture-site infection, local haemorrhage from femoral artery or vein, femoral vein thrombosis, phlebitis, femoral artery pseudoaneurysm, injury to the femoral nerve and arteriovenous fistula, etc, retroperitoneal haemorrhage is reportedly the most serious complication of femoral vein catheterization.<sup>5,6</sup> Retroperitoneal haematoma has been reported to occur in about 0.5% of cases of femoral arterial catheterization.<sup>1</sup> Altered haemostasis due to anticoagulants is independent risk factors in the development of extraperitoneal hematoma.<sup>2</sup> A study involving 44 cases of retroperitoneal haemorrhage with catheterization and altered haemostasis revealed that these hematomas usually arise from a vessel that is distant to the puncture site.<sup>2</sup>

In our case the haematoma arise from the internal iliac vein high above the puncture site. The site was 1 cm below the inguinal ligament which is a high arterial puncture site had we used a long catheter like SECALON T 170 mm. In our case, pelvic haemorrhage occurred from the internal iliac vein from injury due to faulty technique. The needle was inserted at an angle, and advanced so the tip of the needle may have reached the retroperitoneal space. Short height of 148cm of the lady and long length of SECALON (170 mm grey coloured) may have contributed to it.

## CONCLUSION

Retroperitoneal hematoma after cannulation of femoral vessels is relatively rare and can be difficult to diagnose, especially in operating rooms. This case demonstrates the importance of performing routine physical examinations, sequentially measuring the haematocrit and closely monitoring systemic blood pressures following interventional procedures for IABP insertion or femoral cannulation in patients under general anaesthesia and highlights the need of avoiding high arterial puncture sites especially with long length catheters.

## AUTHOR NOTE

**Nitesh Sinha**, Senior Resident, (**Corresponding Author**) dr.niteshsinha@gmail.com  
**Rajeev Puri**, Lecturer  
**Zia Arshad**, Lecturer  
Department of Anaesthesiology, L. P. S.  
Institute of Cardiology, Kanpur

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