Late Presentation of Bleeding from a Traumatic Obturator Artery Aneurysm, Successfully Treated by Endovascular Means


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Obturator artery bleeding is rare. During the acute phase of a severe pelvic trauma, massive bleeding can occur immediately. The pelvic fracture often leads to an arterial injury by the broken bone fragments. Our case was unusual due to the absence of any pelvic bone fracture and the late onset of an isolated groin haematoma. The duplex ultrasound and CT scan performed at the admission did not show any acute bleeding but a small groin haematoma. One month later the patient has a major haematoma secondary to an obturator artery pseudo-aneurysm. We successfully performed a selective obturator artery pseudo-aneurysm coil embolization.

Keywords: Obturator artery pseudo-aneurysm.

Case Report

A 17-year-old male attended our emergency department after a motorbike accident. He did not lose consciousness. The patient complained of right limb pain. Initial examination revealed a small right groin haematoma associated with a cold but non-ischemic right limb. All arterial pulses were present. His general medical condition was otherwise normal.

No fractures were seen on the plan X-ray of the pelvis and hips. A duplex ultrasound was performed to investigate the etiology of this right groin haematoma. The volume was measured by $2 \times 3 \times 5 \text{ cm}^3$. There was no active bleeding from the femoral artery.

Abdominal and upper thighs computed tomography was performed because of the non conclusive duplex ultrasound. No evidence of pelvic fracture was found. The haematoma extended from the psoas muscle to the groin without any signs of acute bleeding (Fig. 1). The patient was admitted in the vascular ward and been monitored carefully. The patient was discharged after 3 days.

One month after the initial event, he was readmitted for increasing pain in the right groin and right testicle

Fig. 1. Initial CT images with huge extensive groin haematoma without active bleeding.
and numbness at the antero-internal side of the right upper thigh.

The clinical examination revealed a tender pulsatile mass in the right groin extending to the perineum. The scrotum was tender and edematous.

A contrast enhanced computed tomography scan showed that the volume of the haematoma had increased by $9.5 \times 12 \times 19 \text{ cm}^3$ and heterogeneous distribution of contrast was clearly shown. Just behind the ischio-pubal ramus of the pelvis, a $3 \times 3 \text{ cm}^2$ arterial structure was identified (Fig. 2).

The patient underwent left femoral access angiogram with an initial contrast injection into the distal aorta. A selective catheterization of the internal iliac artery identified the huge obturator artery pseudo-aneurysm (Fig. 3). During the same procedure a coil embolization was performed successfully (Fig. 4).

The haematoma pulsations disappeared immediately and the pain decreased. The patient was discharged at the second post-angiogram day.

At 1 month follow-up the patient was reviewed on our clinic. The pain disappeared and the haematoma was not pulsating. We performed a follow-up computed tomography which showed a regression of the haematoma by $7 \times 9 \times 13 \text{ cm}^3$ and no leak of contrast into the haematoma (Fig. 5).

**Conclusion**

The peripheral arterial embolization was described in 1979 by Tisnado.\textsuperscript{1} Post-traumatic massive pudendal artery bleeding successful embolization was then reported in 1980 by the same author.\textsuperscript{2}

Acute arterial bleeding after pelvic fracture was recently reported by Pieri.\textsuperscript{3} From 1999 to 2001, 56 patients were admitted for important pelvic trauma. Twenty of them presented acute bleeding not treatable by drugs or transfusion. The obturator artery was involved in only five cases. Embolization was achieved after catheterization of the internal iliac artery. Technical success was reported in 100% of cases.

Arterial abnormalities such ‘corona mortis’ can

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**Fig. 2.** Initial angiogram without bleeding or arterial abnormalities.

**Fig. 3.** One month later CT images with a typical obturator artery pseudo-aneurysm.
leads to massive hemorrhage after pelvic fracture as reported by Bernd Daueubler. The author describes an angiographic finding of a lacerated aberrant obturator artery arising from the inferior epigastric branch of the external iliac artery, a condition known as corna mortis.

However, our case is unusual as the bleeding was secondary to the late development of an obturator artery pseudo-aneurysm. The second interesting point is the absence of any fracture, raising the hypothesis of a deceleration injury seems. The reflected part of the inguinal ligament (Gimbernat’s ligament) may act as the unyielding strut against which the obturator artery and its communicating branches with the inferior epigastric artery may be disrupted.

So far, delayed arterial bleeding without any pelvic fracture has not been reported. A persistent or recurrent haematoma after any trauma need careful investigation even if there is no evidence for fractured bone. The endovascular approach is still the gold standard to treat deep arterial bleeding.

![Fig. 4. Second angiogram with a large obturator artery pseudo-aneurysm.](image)

![Fig. 5. Successful coil embolization of the right obturator artery pseudo-aneurysm.](image)
References


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