SHORT REPORT

Ruptured Isolated Internal Iliac Artery Aneurysm Presenting with Haematuria: A Case Report

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Internal iliac aneurysms are rare and their presentation with haematuria is even rarer. This report describes a patient with a ruptured internal iliac artery (IIA) aneurysm who presented with mild right iliac fossa pain and haematuria. A computed tomography scan demonstrated a right internal iliac artery aneurysm that had ruptured into the bladder. The patient was immediately taken to theatre for IIA ligation and bladder repair. This uncommon presentation of a ruptured internal iliac artery aneurysm should be kept in mind when investigating older patients with haematuria.

Keywords: Isolated internal iliac artery; Rupture; Bladder; Haematuria.

Case Report

A 60-year-old male was referred to the vascular service with a right internal iliac artery aneurysm diagnosed on ultrasound. The patient had presented to a peripheral hospital 12 days earlier with mild right iliac fossa pain and haematuria.

The patient’s history included a coronary artery bypass graft 20 years previously but was currently having episodes of angina requiring trinitrate on a regular basis. He was an ex-smoker with chronic obstructive respiratory disease. He was also an insulin dependent diabetic.

Physical examination revealed a stable patient with right iliac fossa pain and a palpable urinary bladder. He had no palpable pulses in the right lower limb.

Haemoglobin was 8.9 g/dl and haematocrit 27%. He had received 6 units of blood at the peripheral hospital. Urea and electrolyte revealed that he had renal impairment. Because of renal impairment an unenhanced spiral computed tomography scan (Fig. 1) was done which revealed a right IIA aneurysm that had ruptured into the urinary bladder and blood clots within the bladder. There was also minimal intra-peritoneal fluid.

He was immediately taken for a laparotomy after the computed tomography scan. Proximal control was obtained at the common iliac artery. Careful dissection demonstrated an IIA aneurysm compressing the external iliac artery. The aneurysm had ruptured into the urinary bladder, which was full of blood clot. The aorta and contralateral iliac artery were not aneurysmal.

Treatment was by ligation of both the proximal and distal neck and collaterals from the inside of the aneurysm. The bladder was debrided and primarily repaired. He was ventilated in the intensive care unit (ICU) post-operatively. He was extubated on day 9 and discharged from ICU on day 12 post-operatively. He developed respiratory failure on day 14 due to his chronic obstructive respiratory disease. He failed to respond to maximum supportive therapy and died on day 16 post-surgery.

Discussion

Internal iliac artery aneurysms are very rare and isolated IIA aneurysms are even rarer accounting for between 0.04 and 0.4% of all intra-abdominal aneurysms.1 Unilateral IIA aneurysms are in the majority

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and are found in 85% of cases. Most of the IIA aneurysms occur in association with other intra-abdominal aneurysms (infra-renal abdominal aorta, common and external iliac arteries) making up part of the poly-aneurysm disease. This disease is more common in males.

Presenting symptoms of isolated IIA aneurysms are very elusive due to its location deep in the pelvis, and because of its rarity it is frequently not considered in the differential diagnosis. Diagnosis is often delayed until the aneurysm is of a significant size and producing symptoms or has ruptured.

The incidence of rupture ranges between 14 and 70% and this is associated with an exceedingly high mortality rate. Rupture into the bladder presenting with haematuria is very rare and there have only been few reports. Haematuria in the presence of a large IIA aneurysm does not necessarily indicate an arteriovesical or arterio-ureteral fistula, and may be due to bladder neck mucosal bleeding as a result of congested perivesical vessel from aneurysm compression.

Other sites of rupture are into the retroperitoneal space and very rarely into the intra-peritoneal space, colon, and iliac veins and may present with rectus sheath haematoma. Isolated IIA aneurysms may also present with direct compression to the ureter, colon, iliac veins, and sciatic and femoral nerves.

Diagnosis is by ultrasound and computed tomography scan. These investigations should include imaging of the abdominal aorta and common and external iliac to exclude other associated intra-abdominal aneurysms.

Internal iliac artery aneurysms are best managed aggressively due to the high morbidity and mortality associated with them. Unless the patient is in an extremely poor condition, surgical treatment is generally indicated for aneurysms greater than 3 cm with close monitoring of those with smaller aneurysms.

A variety of open surgical techniques and recently endovascular repair have been described. Surgical resection and reconstruction remains the gold standard for definitive management and has excellent durable and unparalleled results. Other open surgical techniques include exclusion, aneurysmorhhaphy and resection. Having said that, surgery for IIA aneurysms is often technically difficult due to the depth of the operative field. Aneurysm exclusion is the simplest procedure but carries a risk of long term complications as the aneurysm is still supplied by collaterals and thus continues to expand and may even rupture. For a
unilateral IIA aneurysm with the contralateral IIA free of disease aneurysmorrhaphy with oversawing of proximal neck and distal branches offers the best result.

Emerging endovascular techniques are showing promise in the management of isolated IIA aneurysms. This may be in a form of an IIA coil or fibrin sealant embolization followed by IIA exclusion by placement of a covered stent across the IIA orifice within the common and external iliac arteries.

Although elective IIA occlusion is well tolerated it may result in complications such as buttock claudication, rest pain or necrosis, vasculogenic impotence and colon ischaemia. Another complication specific to endovascular coil embolization and exclusion is aneurysm recanalization and continued expansion with the risk of rupture.7 Periodic imaging of these patients treated with endovascular repair is warranted to detect this complication early.

Conclusion

This case demonstrates the uncommon presentation of IIA aneurysms with haematuria due to arterio-vesical fistula. A search for an IIA aneurysm in patients with haematuria who fit the profile of those likely to harbour such aneurysms is warranted.

References


Accepted 26 April 2005