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Pelvic arteriovenous malformation mimicking benign prostatic hyperplasia: A case report

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ABSTRACT

Pelvic arteriovenous malformation is a rare vascular abnormality, espescially in male patients, and is difficult to treat because of its nature supplied by multiple arterial feeders. We report a 70-year-old male patient admitted due to symptoms of benign prostatic hyperplasia. Ultrasound was performed initially, and no other abnormalities were found other than an enlarged prostate. CT scan later demonstrated a pelvic arteriovenous malformation adjacent to the prostate, with multiple arterial feeders from the right internal iliac artery. Angiography confirmed the diagnosis, and transaterial embolization was successfully done. The symptoms disappeared several days later, and the patient remained asymptompmatic during follow-up.

1. Introduction

Arteriovenous malformation of the pelvis is a rare vascular abnormality, especially in male patients. Most of them are acquired, due to trauma, neoplasm or surgical procedures, but congenital ones are rarely seen.[1–3] Those lesions remain mostly asymptomatic, and the symptomps, if any, are nonspecific, including abdominal or pelvic pain, hematuria, hemospermia, impotence, dysuria, urinary retention, …leading to difficulties in diagnosis.[2,4] We hereby present a case of pelvic arteriovenous malformation (pAVM) in a male patient presenting symptoms of benign prostatic hyperplasia (BPH). This patient was successfully treated by endovascular intervention. Moreover, we also provide a brief summary of this vascular pathology by a relevant literature review and highlight the importance of clinical suspicion in diagnosing pAVM in patients with BPH.

2. Case presentation

A 70 year-old male went to our hospital for clinical consultation. He had been suffering nocturia, urinary frequency, hesitancy and urinary retention for 6 months. Prior to visiting us, he was on medication for BPH treatment. However, the symptomps persisted, even woke him from sleep, making him feel tired and uncomfortable. His IPSS (International Prostate Symptom Score) is 26, indicating severe symptoms, and the Quality of Life score is 5, which means he is unhappy suffering from the disease. He had diabetes and denied any history of neoplasm, surgeries and trauma. Physical exammination was normal, with no palpable mass. Laboratory investigation, including routine blood, biochemical analysis and tumor marker was unremarkable except a slight increase level of PSA total (6.11 ng/ml). Urinalysis was normal but a high level of glucose (14mmol/l). Abdominal ultrasound (US) indicated hepatosteatosis, urinary bladder wall thickening and an enlarged prostate whose measurements are 43 x 46 x 42 (mm), volume 43 cc, corresponding to the initial diagnosis.

However, the CT scan later showed multiple tortuous vascular structures in the right pelvic region feeding from the right internal iliac artery, with early venous draining to the right internal iliac vein, indicating an AVM surrounding to prostate and bladder (Fig. 1). The lesion is adjacent to the prostate and the bladder neck. He was then admitted for transaterial embolization. Under local anasthesia, a 6F femoral sheath

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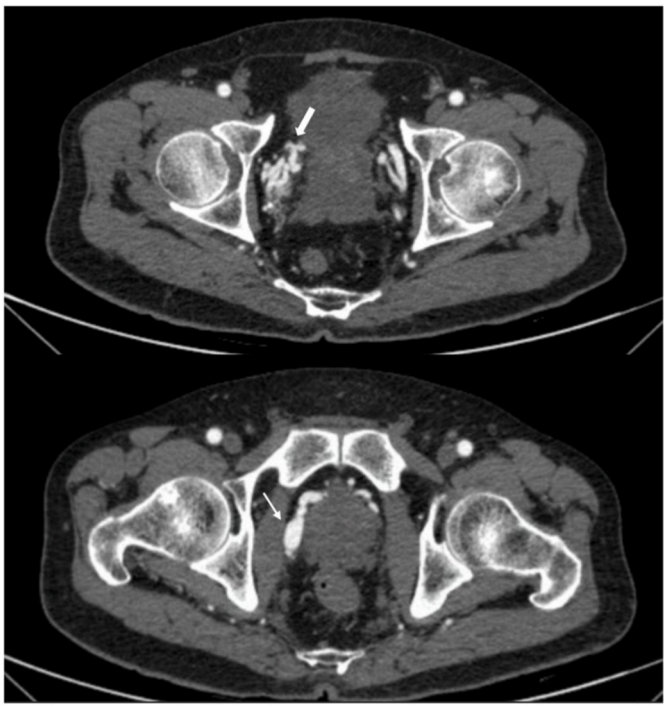

Fig. 1. The pAVM on CT scan, with nidus (thick arrow) and draining vein (thin arrow).

was inserted to the left femoral artery. The right common illiac catheterization was performed by the 5F Yashiro catheter (Glidecath, Terumo, Japan). Arteriography showed the nidus in the right pelvis, with feeding arteries from multiple branches of the right internal iliac artey, draining to the internal iliac vein. Superselective catheterization was performed by the coaxial 1.98F Parkway soft microcatheter (Asahi, Japan) and 2.7F Progreat (Terumo, Japan), and the feeders were embolized using the mixture of N-butyl cyanoacrylate and lipiodol ratio 0.5:2.5 ml. The final angiogram showed that the feeding branches were completely occluded (Fig. 2). CT scan 2 months later revealed no sign of the AVM, and the patient' symptoms completely disappeared.

AVM in pelvic region is a rare clinical entity, especially in male patients. It is mostly the result of trauma, neoplasm, surgical procedures, and rarely from congenital etiology.[1,5] Reviewing in literature, there are approximately 20 cases of pAVM reported.[1–4,6–10] In male patients, pAVM presents with various symptoms such as pelvic discomfort, hematospermia, erectile dysfunction, hematuria, leading to difficulties in diagnosis.[2,11] In this report, we present a case of pAVM mimicking a BPH, which is a common issue of male at this age. This makes the pAVM diagnosis easily mistaken due to its low incidence. Physical examination may show a pulsatile mass, murmur at the lesional region. However, not all mass are palpable, as well as rectal examination is not always performed routinely. In spite of the fact that US is commonly the initial imaging modality, its sensitivity and specificity are quite low.[1,12]

3. Discussion

Both CT scan and MRI play an important role in demonstrating the lesional nature, level of extension, any involvement of adjacent structures, arterial feeders and draining veins. The diagnosis is confirmed on digital subtraction angiography, showing the lesion with feeders from the artery and draining veins, assisting the physician in choosing the appropriate treatment approach. There are multiple treatment options for pAVM, including ligation of the feeders, excision surgery, and embolization. However, most authors agree that surgical approach is usually unsuccessful, since ligation of the afferent arteries leading to new collaterals develop rapidly, worsening the lesion. Additionally,

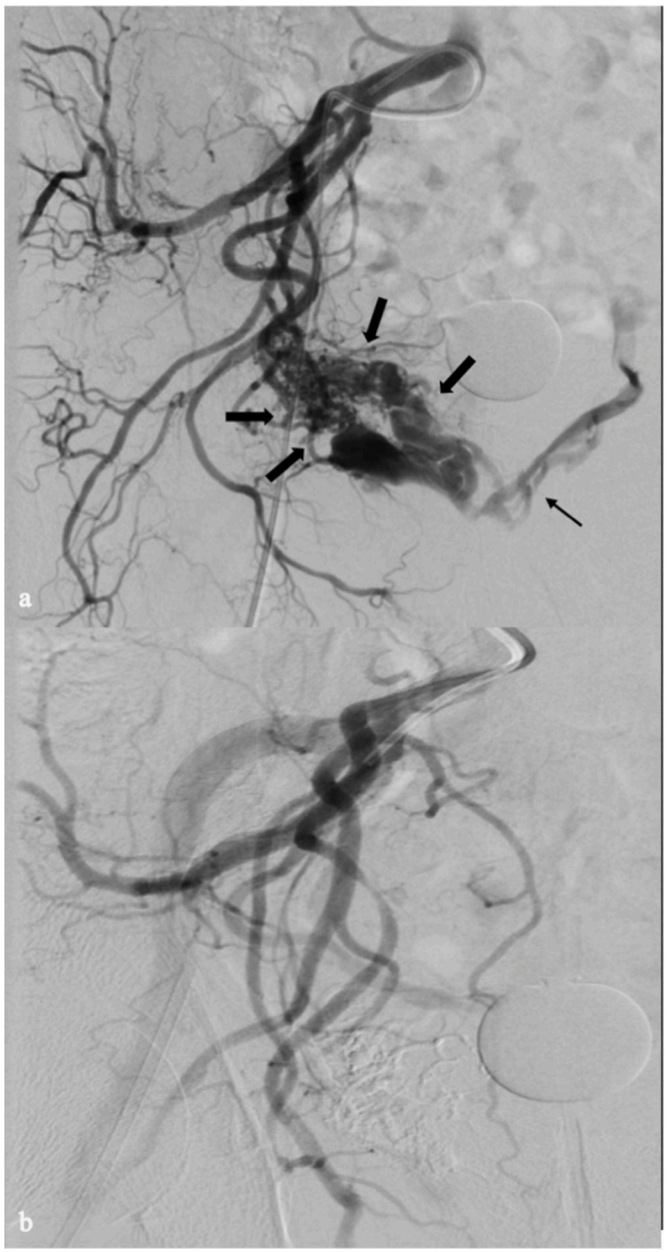

Fig. 2. (a) pAVM demonstrated on angiography, with nidus (black arrow) and draining vein (thin arrow); (b) post-embolization image, the lesion is completely occluded.

surgical excision is often invasive, requiring sacrificing part of the adjacent pelvic organs, and bleeding as well.[1,4,13] Therefore, embolization is normally the treatment of choice, with various embolic agents such as coils, embolic particles, liquids.

In this patient, the pAVMs is alongside the prostate, probably exerting the extrinsic pressure on the bladder, as wel as causing pelvic venous congestions, which made the symptoms mimic those of BPH. At the same time of angiography, embolization was performed. Multiple feeder branches from the internal iliac were superselective catheterization, and liquid was used to occlude the nidus. Embolization of pAVMs helps occluding the shunt and reducing venous congestions, thus relieves patient's symptoms. The patient took notice of totally regression of the symptoms and remained asymptomatic during the 2-year follow-up.

4. Conclusion

To our knowledge, this report presents the first case of pAVM mimicking the symptoms of BPH in male patient. This raises the suspicion to recognize the condition in old male patients, not to be mistaken with the common cause of urological symptoms of patients at this age.

Availability of Data and materials

Data and materials used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval

Our institution does not require ethical approval for reporting individual cases or case series.

Patient consent

Written informed consent for the publication of this case report was obtained from the patient.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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