Arteriovenous Malformation of the Prostate Vasculature as a Cause of Torrential Bleeding during Transurethral Resection of the Prostate

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Abstract: An 82-year-old male experienced severe bleeding during transurethral resection of the prostate (TURP) due to an undetected prostatic arteriovenous malformation (AVM). Initial management with a catheter was followed by successful transarterial embolisation. This case highlights the effectiveness of endovascular angioembolisation for unexpected prostatic AVMs.

Keywords: arteriovenous malformation; TURP; prostate; angioembolisation

An 82-year-old male with a history of bothersome urinary symptoms and an enlarged prostate presented for transurethral resection of the prostate (TURP). Intraoperatively, a small capsular perforation occurred, leading to catastrophic and uncontrollable bleeding with an associated loss of surgical field visibility. A 22Fr three-way indwelling catheter (IDC) was inserted, inflated with 60 mL of sterile water, and placed on traction to control the bleeding.

A CT angiography demonstrated prominent varices of the right internal iliac vein with no obvious vascular obstruction (Figure 1). This suggested the presence of an occult right-sided prostatic arteriovenous malformation (AVM) as the source of the bleeding. Interestingly, this AVM was not obviously identifiable on pre-operative imaging. Given the patient’s ongoing transfusion-dependent haematuria, the decision was made to proceed with a minimally invasive endovascular embolisation. Transarterial embolisation of the AVM arising from the right internal iliac vein was successfully performed using the combination of a vascular plug and micro coils (Figure 2). The patient’s haematuria resolved post-procedurally, and he was discharged to return home three days later after successfully passing a trial of void.

Prostatic AVMs are rare but can lead to unexpected and significant complications during otherwise routine procedures [1]. Traditionally, the first line of treatment of prostatic bleeding has involved endoscopic techniques, yet these often prove inadequate for prostatic AVMs, compelling clinicians to consider alternative interventions [2]. This case demonstrates the effectiveness of an endovascular angioembolisation approach, which circumvents the risks linked to open surgical methods and can effectively control significant blood loss, similar to the management of AVMs in other anatomical locations [3,4]. The prudent application of such minimally invasive techniques underscores an effective treatment of an uncommon pathology for which no standard treatment guidelines exist.
Figure 1. CT angiogram: Axial (A) and coronal (B) views demonstrating enhancement and prominent varices of the right internal iliac vein extending above the margin of the bladder and prostate and into the right sciatic notch (red arrows).

Figure 2. Pelvic angiography: Coronal view highlighting the AVM, consisting of multiple feeding vessels arising from the right internal iliac artery (red arrow).

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**References**


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