Clinical History:

A 72-year-old male with prostate cancer and skeletal metastasis presented with refractory hematuria. An unsuccessful palliative TURP was performed as a treatment for hematuria.

Imaging Findings:

Figure 1 shows a selective angiography of left internal iliac artery (A) with anterior (C) and posterior (B) divisions. The anterior division gives obturator (D), rectal (E) and internal pudendal (F) artery. Figures 2 and 3 show a selective angiogram of the left internal iliac artery in early and late arterial phase showing left hemi-prostatic blush. Figure 4 shows a superselective angiogram of the left prostatic artery shows again left hemi-prostatic blush (star). Figure 5: Contrast enhanced cone beam CT in coronal plane is performed, which again shows the left hemi-prostatic blush and confirms the safe placement of the microcatheter tip close to the prostate. Embolization was then performed as per protocol with embozene 400 microgram. Figure 6 shows a superselective angiogram of the left prostatic artery after embolisation procedure shows decrease in hemi-prostatic blush (arrow). The embolisation was performed only on the left, since the patient was unstable and the intervention had to be terminated. There were no complications and haematuria resolved within 24 hours, with no hematuria on 2 weeks follow-up.

Discussion:

Background: The most common aetiologies of prostatic haematuria include BPH [4, 5], iatrogenic urological trauma, prostate cancer and radiation therapy.

Clinical Perspective: Prostatic haematuria is among the most common genitourinary complaints of emergency room visits, distressing and troublesome to men and a challenging clinical problem to the treating physician [1, 6].

Management:

Conservative and Medical Therapy: Physical activity limitation and Foley catheter placement.

Surgical Therapy: Endoscopic management with transurethral approaches, such as transurethral fulguration, TURP and photovaporization of the prostate, has been the mainstay of surgical management.

Imaging Perspective: The PAE- technique typically involves a femoral artery approach. After vascular access has
been obtained, pelvic and internal iliac angiography is performed, followed by selective catheterization of the prostatic branches of the internal iliac artery. Microcatheter placement is confirmed using cone beam CT and repeat angiography after selective catheterization enables identification of active haemorrhage when present. Embolization is then carefully performed under fluoroscopy monitoring, using particulate embolic, preferably 300–500 µm microspheres. The technical endpoint is particle stasis and decrease of neovascularity. Reduced complication rates have resulted in shift from the selective proximal embolization to the more distal superselective approach.

Complications: PAE is a safe technique. Some complications such as ischemia of the inferior wall of the bladder or of the anterior wall of the rectum have been reported, which are rare and in the most case self-limiting.

Conclusions: The technique of PAE is safe and effective in the management of RHPO. Use of a superselective approach optimizes clinical success while minimising complications. PAE is a minimal invasive and well tolerated procedure. Normally is no general anaesthetic is necessary. The radiation exposure and the safety profile of the contrast medium are acceptable.

Technical Success and Clinical Outcomes: Technical success of PAE is defined as the achievement of superselective catheterization and embolization of the bilateral prostatic arteries. Reports of technical success are high, ranging from 88 to 100% in contemporary series [1-3].

**Differential Diagnosis List:** Refractory haematuria of prostate origin (RHPO) treated with Prostate artery embolisation (PAE), Haematuria due to arterial bleeding, Haematuria due to venous bleeding

**Final Diagnosis:** Refractory haematuria of prostate origin (RHPO) treated with Prostate artery embolisation (PAE).

**References:**


Description: Superselective angiogram of the left prostatic artery after embolisation procedure shows decrease in hemi-prostatic blush (arrow). Origin: Institut für Diagnostische und Interventionelle Radiologie, Städtisches Klinikum Karlsruhe, Germany.
Figure 2

Description: Contrast enhanced dynamic CT in coronal plane is performed, which shows the left hemi-prostatic blush and confirms the safe placement of the microcatheter tip close to the prostate. Origin: Institut für Diagnostische und Interventionelle Radiologie., Städtisches Klinikum Karlsruhe, Germany.
**Description:** Superselective angiogram of the left prostatic artery before embolisation showing the left hemi-prostatic blush. **Origin:** Institut für Diagnostische und Interventionelle Radiologie., Städtisches Klinikum Karlsruhe, Germany
Description: Selective angiogram of the left internal iliac artery in the late arterial phase shows the left hemi-prostatic blush. Origin: Institut für Diagnostische und Interventionelle Radiologie., Städtisches Klinikum Karlsruhe, Germany
Description: Selective angiogram of the left internal iliac artery in early arterial phase showing mild left hemi-prostatic blush. Origin: Institut für Diagnostische und Interventionelle Radiologie., Städtisches Klinikum Karlsruhe, Germany
Description: Selective angiography of left internal iliac artery (A) with anterior (C) and posterior (A) divisions. The anterior division shows obturator (D), rectal (E) and internal pudendal (F) artery. Origin: Institut für Diagnostische und Interventionelle Radiologie., Städtisches Klinikum Karlsruhe, Germany.