Haematospermia

What is haematospermia?

The presence of blood in the ejaculate is called haematospermia. Although often alarming to patients, it is usually a benign, isolated, and self-limiting symptom.

How common is haematospermia? (Epidemiology)

- It is difficult to accurately estimate the prevalence of haematospermia. Many men do not witness their semen, and the symptom may go unreported.[1]
- In a cross-sectional study of 26,126 men with a median age of 61 years, 0.5% of them reported haematospermia.[2]
- Its peak incidence is in men aged 30-40 years.
- The majority of patients have no prior genitourinary symptoms or significant factors in their history.

Haematospermia causes (aetiology)

Semen originates from multiple organs, including the testicles, epididymis, vas deferens, seminal vesicles and prostate. In about 50% of patients the cause of haematospermia is not clearly understood or known.

- In men younger than 40 years of age, the most common cause is infection (urinary tract infection or sexually transmitted infection).[3]
- In men of 40 years of age or older, malignancy is a more common cause than in men under 40 years old. Malignancies and trauma account for just 4-13% of cases.

- Five studies found that rates of prostate cancer ranged from 2.6% to 6% in men aged over 40 years with haematospermia.[3]
- It may be a complication associated with transurethral prostrate resection.[4]
- Ultrasound-guided biopsy of the prostate can also result in haematospermia. In one study more than 80% of men reported hematospermia lasting for up to four weeks following prostate biopsy.[5]
- Other causes include:[1]
    - Prolonged abstinence from ejaculation.
    - Coital or perineal trauma.
    - Ductal obstruction.
    - Cysts of the seminal vesicles, Wolffian duct, or utricle.
    - Calculi of the seminal vesicles, ejaculatory duct, prostate, or urethra.
    - Rarely, infectious causes such as tuberculosis or schistosomiasis.
    - Systemic conditions such as severe uncontrolled hypertension. bleeding disorders, lymphoma, and leukaemia.

Types of haematospermia

Primary haematospermia

Blood in the ejaculate is the only symptom.

- There is no blood in the urine, macroscopically or microscopically.
- The patient has no evidence of any urinary irritation or infection and physical examination is completely unremarkable.
- The condition is self-limiting.
- Primary haematospermia patients have been studied extensively in the past and most studies show no other associated problems.

Secondary haematospermia

The cause of bleeding is known or suspected - eg, immediately after a prostate biopsy, or in the presence of a urinary or prostate infection or cancer.

Unusual causes or predisposing factors:

- Prostatitis.
- Epididymitis.
- Urinary calculi.
- Tuberculosis.
- Cirrhosis of the liver.
- Arterial hypertension.
- Haematological disorders affecting clotting - eg, haemophilia.
- Parasitic infections.

Haematospermia symptoms (presentation) [1]

Haematospermia is blood-stained semen. This can appear brown, dark red, or bright red, depending on how recently the bleeding occurred.

This can be the only symptom, especially in idiopathic cases.

Other symptoms may indicate an underlying diagnosis, for example:

- Dysuria, frequency, urgency, fever or abdominal/scrotal/pelvic/perineal pain may suggest a urinary tract infection or prostatitis.
- Urethral discharge may suggest a urethritis, for example due to a sexually-transmitted infection.
- Pain on ejaculation suggests prostatitis or, rarely, ejaculatory duct obstruction.
- Visible haematuria may suggest a urinary tract infection, or bladder/renal cancer, particularly if painless.

- Lower urinary tract symptoms (LUTS) such as hesitancy, post-micturition dribbling, poor urinary stream, and frequency may suggest benign prostatic hypertrophy or prostate cancer.

Differential diagnosis

- Idiopathic.
- Prolonged abstinence from ejaculation.
- Chronic or acute prostatitis.
- Infection of seminal vesicles.
- Urinary tract infection.
- Prostate cancer.
- Malignant hypertension in final stages.
- Urethritis.
- Bleeding tendencies of any kind (including haemophilia or patients on anticoagulants).
- Groin, testicular or pelvic injury.
- Exotic infections such as Schistosoma haematobiumand Trichomonas spp.

Investigations

History

Discuss the following with the patient:

- When, how often, associated symptoms.
- Any precipitating factors.
- Frequency of sex - prolonged abstinence can be causative.[6]
- Any discharge or history of sexually transmitted infections.
- Pain on ejaculation, perineal pain, testicular pain.
- Bruising or bleeding tendencies.

- Problems urinating.
- Hypertension.
- Travel history, especially Africa.

NB: patients who have haematospermia associated with symptoms of urinary infection or visual or microscopic blood in the urine require a complete urological evaluation.

Examination

Perform the following:

- Blood pressure.
- Abdominal palpation for hepatosplenomegaly or renal enlargement.
- Examination of genitals, including the testicles for any lumps, urethral discharge.
- PR prostatic check for cragginess, enlargement or lumps, loss of median sulcus.

Tests[1] [3] [6]

The choice of investigations differs from patient to patient, depending on the likely diagnoses.

Urinalysis and microscopy, culture, and sensitivity of a mid-stream urine sample should be performed for everyone presenting with haematospermia.[3]

Other investigations to consider include:

- A full blood count and coagulation screen.
- Microscopy, culture and sensitivity of the semen; this is often negative, but is useful if schistosomiasis or tuberculosis are suspected.[5]
- Prostate specific antigen (PSA) testing in people over the age of 40, or in anyone with other signs or symptoms of prostate cancer.

- Tests for sexually transmitted infections, such as nucleic acid amplification tests (NAATs) for chlamydia and gonorrhoea on first-catch urine samples.
- Testicular ultrasound, if there is testicular swelling or pain.

Further investigations in secondary care can include:[5]

- Prostate MRI, particularly if the prostate feels irregular or if the PSA is raised.
- Cystoscopy, to locate, and sometimes treat, the exact site of the bleeding.
- Trans-rectal ultrasound of the prostate.

Haematospermia treatment[3]

Treatment depends on the underlying cause.

- Where a specific cause is identified, it should be treated; for example, appropriate antibiotics if an infectious cause is isolated.
- In people under the age of 40, with a normal examination and reassuring/normal initial investigations, a serious cause is very unlikely. Patients can be reassured that the haematospermia is likely to resolve on its own with time, but that they should return if it recurs.
- Consider referring men over 40 to a urologist, if initial primary care investigations do not reveal a cause.
- Likewise, refer to urology if haematospermia persists or recurs without any clear cause, or persists despite treatment of a presumed cause.
    - Expert consensus suggests that 10 or more unexplained episodes of haematospermia should trigger referral.[6]
- Refer men with cysts/calculi of the prostate/seminal vesicles to urology.
- Haematospermia that occurs as a result of a prostate biopsy, brachytherapy, or other urological procedure should resolve within three to four weeks.

Open vesiculectomy surgery has been considered the definitive form of haematospermia treatment; however, it can be associated with significant morbidity.

Laparoscopic vesiculectomy may be a safe and feasible approach and has showed good outcomes and minimal morbidity.[7] [8]

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