CASE REPORT

Vasitis: the need for imaging and clinical acumen

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SUMMARY

A 55-year-old man presented with an acute, painful groin mass with signs of sepsis. On examination, it was difficult to tell whether this was a strangulated hernia or a testicular torsion. Biochemical investigations revealed raised inflammatory markers and radiological investigations showed a rare inflammatory condition, vasitis, which could be mistaken for various other 'surgical' groin masses. This case report summarises the importance of realising the vast differential diagnoses that come with acute groin masses and how imaging can prevent unnecessary surgery.

BACKGROUND

Acute vasitis is an unusual condition, but one that can present clinicians with a diagnostic dilemma, and if not identified and treated appropriately, may lead to unnecessary surgery with consequent morbidity for the patient.¹

Differential diagnoses include an incarcerated or strangulated inguinal hernia, epididymo-orchitis and a testicular torsion. Acute vasitis is a result of an inflammatory process involving the vas deferens; it is a rare condition with reports of only four cases published since 1933.^{2–4}

By writing this case report, we not only show that acute groin masses need careful evaluation, but also that specific imaging should be mandatory for attaining a specific diagnosis in those who present with such masses, as they could represent an underlying, unrecognised vasitis.

CASE PRESENTATION

An otherwise fit and well 55-year-old man presented to the urology service, referred by his general practitioner, with a 1-day history of severe left groin pain with an associated mass. He also had signs of systemic inflammatory response syndrome (SIRS).

On examination, the patient had a thickened, hard and indurated mass in the left inguinal region, which was separate from the testis; a provisional diagnosis of an obstructed hernia was made.

Initial laboratory tests revealed a white cell count (WCC) of $20 \times 10^9/L$ and a C reactive protein (CRP) of 300. Urine dipstick showed no abnormality.

An urgent ultrasound scan was ordered, which demonstrated a diffusely swollen left spermatic cord throughout its length, consisting of dilated varicosities extending into the left scrotum (figure 1), with normal and symmetrical testicles and blood flow.

An obstructed hernia and a testicular torsion had been ruled out at this point, but further imaging was needed to confirm the diagnosis. An MRI was

Figure 1 Ultrasound showing a hypervascular left spermatic cord.

subsequently ordered to look more closely at the soft tissues.

The MRI showed extensive, diffuse oedema within the subcutaneous fat overlying the left groin tracking along the spermatic cord (figures 2 and 3), internal structures of the spermatic cord were also apparent and oedematous (figure 4). It was by correlating the history, clinical findings and imaging that the diagnosis of vasitis was performed.

The patient was admitted to the ward for several days and started on intravenous antibiotics.

Figure 2 T2-weighted coronal view MRI showing oedema of the surrounding tissues of the scrotum and groin.

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Figure 3 T2-weighted axial MRI scan showing marked oedema within the soft tissues; cellulitis extending into the medial thigh and adductor compartment.

DIFFERENTIAL DIAGNOSIS

The differential diagnoses prior to any radiological or biochemical investigations were:

- ▶ Incarcerated or strangulated inguinal hernia
- ▶ Testicular torsion
- ▶ Epididymo-Orchitis

TREATMENT

The patient was initially started on intravenous gentamicin, clindamycin with oral ciprofloxacin to cover against a broad spectrum of pathogens, targeting urogenital pathogens.

OUTCOME AND FOLLOW-UP

The patient was discharged after an inpatient stay of several days, where his bloods and general condition improved, with a WCC of $8.9 \times 10^9/L$ and a CRP of 12. The patient was discharged home with a further 14 days of oral antibiotics. At follow-up 2 weeks later he had made a full recovery, the mass in the groin had receded.

Figure 4 T2-weighted MRI showing significant oedema surrounding left spermatic cord; internal structures are apparent and oedema overlying the skin is seen.

DISCUSSION

Vasitis or inflammation of the vas deferens has been classified by Chan and Schlegel⁵ as either asymptomatic vasitis nodosa, or acutely painful infective vasitis. Vasitis nodosa is a chronic inflammatory disorder associated with obstruction of the vas deferens; this causes leakage of spermatozoa into the spermatic cord⁶ and is most common in patients following a vasectomy.

Acute vasitis, however, is a rare condition, with reports of only four cases published since 1933. It results from an acute infection considered to be due to the retrograde spread of urinary pathogens, as is seen in epididymitis. The pathogens commonly associated are *Escherichia coli* and *Haemophilus influenza*, however, other rare pathogens such as Brucella and Tuberculosis have also been described; it is important to note that, as of yet, no pathogen has been isolated from cases.⁷

Patients with acute vasitis may present with localised pain, swelling and/or a mass in and around the scrotal and groin area. This can be confused with other conditions in the acute setting, such as an incarcerated, strangulated inguinal hernia, epididymo-orchitis or even a testicular torsion. Treatment is usually conservative with antibiotics without the need for surgical exploration.

The diagnosis of vasitis can be unclear by the rarity of such an illness and the clarity of the ultrasound findings.⁸ In the past many cases would find the diagnosis ultimately by surgery,⁸ however, the literature has recommended using CT or MRI to confirm the diagnosis. In this case, the ultrasound findings did not confirm the diagnosis of vasitis, but showed an abnormality that needed further imaging.

Cross-sectional imaging is necessary to confirm the diagnosis and exclude differentials such as an inguinal hernia. Spiral CT, ultrasound scanning (USS) or MRI can all be used to differentiate between the above, with USS being the least sensitive for diagnosing vasitis.

MRI is the preferred modality to CT to detect vasitis as it would show a focal abnormal signal in and around the vas, as well as protecting those who pose a risk to ionising radiation. The MRI did in fact show that the oedema and inflammation were isolated in and around the spermatic cord. A literature search conducted made the diagnosis come to light, and the resolution of the patient's symptoms in a matter of days with antibiotics made this diagnosis more favourable.

This case illustrates one of the few cases of vasitis in the literature; it is a rare entity, however, it should not be missed in patients who present with these symptoms.

Learning points

- ▶ While clinically it is difficult to distinguish the difference between acute vasitis and an inguinal hernia, a CT or MRI would be favourable in identifying such a diagnosis and preventing unnecessary surgery.
- ▶ Thorough clinical evaluation is needed when examining a patient with an acute groin mass, so that an undiagnosed vasitis is not missed.
- ▶ An MRI or CT should be mandatory for diagnosing vasitis.
- ▶ The diagnosis can be complicated by its rarity but should be on the clinician's list of diagnoses if symptoms and signs suggest it.

Contributors JP initially saw the patient in clinic and helped with notes and the final editing of the case report. BL helped with editing and finalising the report. SP helped with analysing images and retrieving them on the system.

Competing interests None.

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