

INTRODUCTION

Acute epididymo-orchitis is the inflammation of both the epididymis and the testis and is a common cause of acute scrotum in adults (Suciu *et al.* 2017). It can be of infectious or non-infectious aetiology. These include sexually transmitted infections and urinary tract pathogens (Chia *et al.* 2016).

Epididymo-orchitis is typically established based on clinical symptoms and physical examination. However, it should be differentiated from testicular torsion which is considered a urological emergency (Suciu *et al.* 2017).

Testicular infections are usually treated with oral antibiotics resulting in little to no morbidity (Rhudd *et al.* 2017). However, progression to further complications occurs in 3-5% of patients and can lead to abscess formation, testicular infarct and possible testicular loss (Rhudd *et al.* 2017).

The use of ultrasound (US) imaging is essential in equivocal cases or in severe persistent cases when adequate palpation is hindered by pain or induration (Cek *et al.* 2017). US has proved to be a reliable modality in assessing a broad range of time-sensitive scrotal pathologies and in guiding surgical decisions (Holliday *et al.* 2017).

PATIENT BACKGROUND

A 47-year-old male presented to the emergency department (ED) complaining of acute severe right testicular pain. The patient had been prescribed a course of oral antibiotics and analgesia from a tertiary care centre to treat epididymitis one week ago.

On physical examination, the right testicle appeared swollen and tender to palpate with associated erythematous indurated overlying skin. Laboratory tests showed an elevated C-reactive protein of 81mg/l and a white cell count of 11.8 x10⁹/l. The patient had no other relevant medical history.

The ED physician requested an urgent testicular ultrasound to further assess.

ULTRASOUND EXAMINATION

A high frequency linear transducer was utilised for the US examination. The left testicle was of normal size, echogenicity and vascularity.

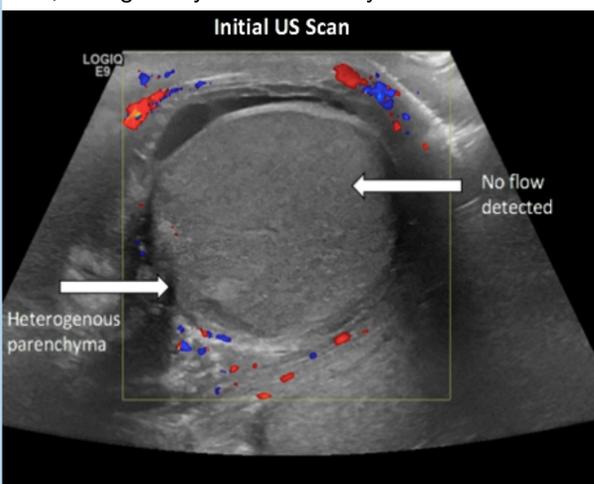


Figure 1. Transverse view demonstrating an enlarged and mildly heterogenous right testicle in keeping with common US appearances of epididymo-orchitis (Suciu *et al.* 2017). An increase in vascular uptake on colour Doppler assessment is expected in early stages of epididymo-orchitis (Suciu *et al.* 2017). However, intra-testicular flow is not detected on colour Doppler assessment, concerning for testicular torsion or infarct due to chronic infection (Cek *et al.* 2017).

ULTRASOUND EXAMINATION

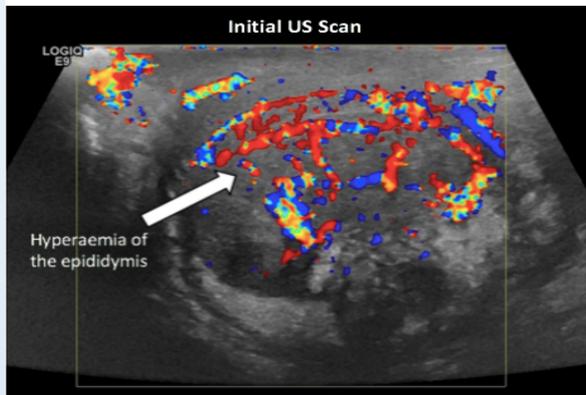


Figure 2. The right epididymis appeared enlarged with an oedematous and hyperaemic sonographic appearance suggestive of epididymitis (Suciu *et al.* 2017).

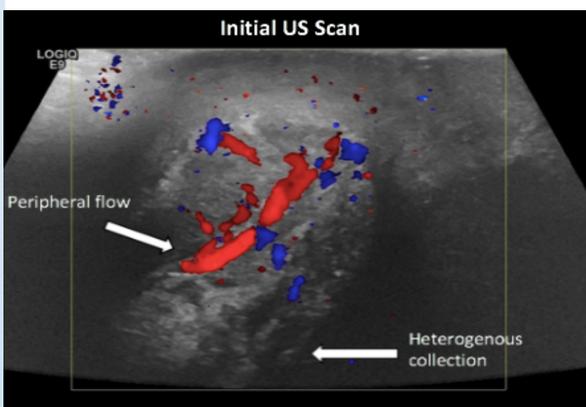


Figure 3. Transverse view of the lateral scrotum inferior to the right testicle demonstrated an ill-defined, heterogenous area with peripheral vascularity, likely representing an evolving collection or abscess (Kühn *et al.* 2016).

DIAGNOSIS AND TREATMENT

Given the symptomatology and the concern for testicular damage demonstrated on US, emergency exploratory surgery was performed. Inflammatory reaction of the testis was noted and no torsion was detected, confirming the diagnosis of epididymo-orchitis. Intra-operative US post tension relief showed subtle testicular flow and the testis was deemed viable. A drain was inserted and intravenous antibiotic therapy was arranged to treat the testicular abscess.

The patient's C-reactive protein and white cell count began to decrease post surgery. However, the patient's symptoms persisted. One week later, the drain was removed and inflammatory markers increased again. A follow up US was requested to reassess.

ULTRASOUND EXAMINATION

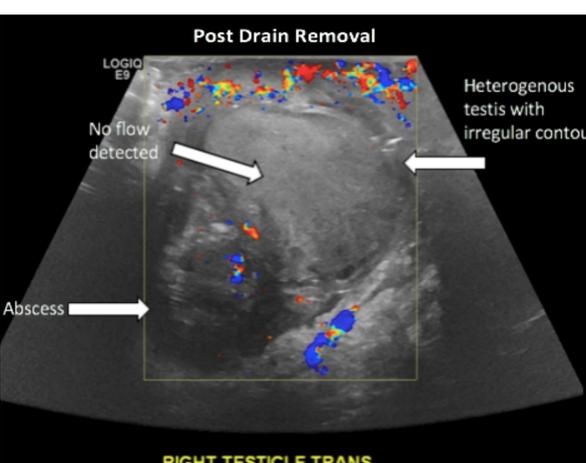


Figure 4. The right testicle appeared heterogenous with an irregular border. There is no vascular activity demonstrated on colour Doppler assessment indicating tissue necrosis (Chia *et al.* 2016).

ULTRASOUND EXAMINATION

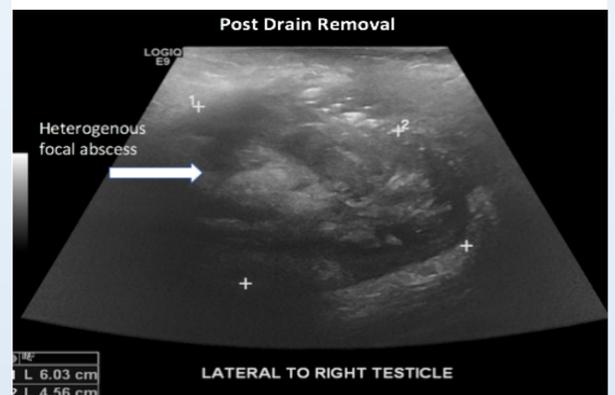


Figure 5. Transverse image of the previously documented collection along the lateral aspect of the inferior right testis now measured up to 6cm. This demonstrated peripheral vascularity suggestive of a focal abscess (Kühn *et al.* 2016).

On examination, there was a small defect in the scrotal wall with purulent discharge present.

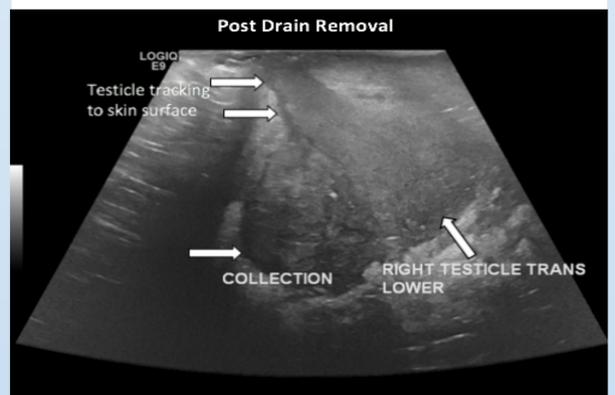


Figure 6. Transverse image of the inferior pole of the right testicle which appeared to track to the skin surface at the site of the prior drain. The discontinuity of the tunica albuginea which surrounds the testis is sonographically consistent with testicular rupture (Adlan and Freeman, 2014).

TREATMENT

Testicular rupture secondary to epididymo-orchitis is a rare complication. In this case, sonographic suspicions were confirmed intra-operatively and histologically.

The right testis contained an abscess and necrotic material as well as a 3.5cm capsular rupture of the lower pole. A right orchidectomy was performed with no immediate post operative complications. Aftercare included the continuation of intravenous antibiotic therapy and a daily wound review. The patient made a full recovery.

CONCLUSION

US is the modality of choice in the assessment of acute scrotal and testicular disease such as epididymo-orchitis. It enables accurate rapid diagnosis and the establishment of optimal treatment. Acute scrotum is a common emergency and general practice presentation. Awareness of rare complications such as abscess formation, testicular infarction and rupture is important as early recognition and intervention is vital for patient prognosis.

REFERENCES

- Adlan, T and Freeman, S. T. (2014) 'Can ultrasound help to manage patients with scrotal trauma?', *Ultrasound*, 22(4), pp. 2015-121.
- Cek, M., Sturdza, L. and Pilatz, A. (2017) 'Acute and Chronic Epididymitis', *European Urology Supplements*, 16(4), pp. 124-131.
- Chia, D., Penkoff, P., Stanowski, M., Beattie, K. and Wang, A. C. (2016) 'Testicular infarction and rupture: an uncommon complication of epididymo-orchitis', *J Surg Case Rep*, (5), pp.1-3.
- Holliday, T. L., Robinson, K. S., Dorinzi, N., Vuclik, A. W., Setzer, E. L., Williams, D. L., Sharon, M. J. and Minardi, J. J. (2017) 'Testicular Rupture: A Tough Nut to Crack', *Clin Pract Emerg Med*, 1(3), pp. 221-224.
- Kühn, A. L., Scortegagna, E., Nowitzki, K. M. and Kim, Y. H. (2016) 'Ultrasonography of the scrotum in adults', *Ultrasonography*, 35(3), pp. 180-197.
- Rhudd, A., Moghul, M. and Reid, G. (2017) 'Epididymo-orchitis causing testicular infarction: a serious complication of a common disorder', *J Surg Case Rep*, (10)pp.207.
- Suciu, M., Serban, O., Iacob, G., Lucan, C. and Badea, R. (2017) 'Severe Acute Epididymo-orchitis Complicated with Abscess and Testicular Necrosis- Case Report', *Ultrasound Int Open*, 3(1), pp. 45-47.