

## A rare cause of acute scrotal pain in a 37-year-old

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**Section:** Uroradiology & genital male imaging

**Area of Interest:** Genital / Reproductive system male

**Procedure:** Diagnostic procedure

**Imaging Technique:** Ultrasound-Colour Doppler

**Special Focus:** Embolism / Thrombosis Haematologic diseases Ischaemia / Infarction Case Type: Clinical Cases

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**Patient:** 37 years, male

### Clinical History:

A 37-year-old male patient with a history of antiphospholipid syndrome (APS) associated with systemic lupus erythematosus (SLE) presented with acute left testicular and inguinal pain that arose spontaneously with no other associated symptoms. Physical examination showed moderate pain on palpation of the left testicle. Laboratory findings were normal except mild leucocytosis.

### Imaging Findings:

Longitudinal ultrasonographic view of the right and left testicle showing hypoechoic avascular upper pole of left testicle, arrows indicating the abrupt change in echogenicity between upper and lower pole of the left testicle. Doppler ultrasound (US) of the testis reported segmental scrotal infarction of the left testicle, possibly related to APS.

### Discussion:

A. Antiphospholipid syndrome (APS) is an acquired autoimmune pro-thrombotic disorder. Clinical presentation consists of recurrent venous and/or arterial thrombosis and pregnancy morbidity due to the presence of antiphospholipid antibodies (aPL), although the pathophysiologic pro-thrombotic mechanism is incompletely understood. [1]

APS can be primary or is called secondary when it is associated with another autoimmune disorder, usually systemic lupus erythematosus (SLE).

The complications we encounter most frequently as radiologists are deep venous thrombosis (often accompanied by pulmonary embolism and chronic thrombo-embolic pulmonary hypertension) and arterial thrombosis of the cerebral circulation leading to transient ischaemic attack/stroke. [2]

B. The most frequent causes of acute scrotal pain in adults are testicular torsion and infection (epididymitis/orchitis), both readily diagnosed with ultrasound. A complete testicular infarction is commonly caused by testicular torsion, severe epididymo-orchitis and trauma.

A segmental scrotal infarct however is a rare cause of acute scrotum, and in the majority of patients no aetiological cause can be found. [3, 4] A few cases report acute inflammation (epididymo-orchitis), haematologic disorders (such as sickle cell disease and polycythaemia, vasculitis (hypersensitivity angiitis and polyarteritis nodosa), as well as anatomic variations (bell clapper deformity causing intermittent torsion), and intimal fibroplasia of the spermatic artery as potential causes. [5-10]

C. Ultrasonographic (sunglasses) view of both right and left testicle showed subtle hypoechogenicity and avascular upper pole of left testicle compared to the right.

Follow-up examination one day later showed markedly decreased echotexture and absence of vascularity in the

upper pole of the left testicle, confirming our proposed diagnosis of segmental infarction (probably related to the haematologic history).

Occasionally, the differential diagnosis with a hypovascular testicular tumour can be difficult.[11] If testicular tumour markers are suspicious, orchidectomy can be required. Upper pole predilection of segmental infarcts was reported, possibly on the basis of collateral vascular supply of testis, although not confirmed in other studies. [3, 12].

D. The patient was treated with pain medication, new oral anticoagulants were started (NOAC i.e. rivaroxaban) while aspirin was stopped. Clinical follow up at 1, 2, 5 and 8 months was uneventfully, with total pain relief.

E. Teaching point:

Scanning both testis simultaneously can reveal subtle differences in echotexture, a clue to prompt diagnosis. This is erratically called the 'spectacles' view.

Take home messages:

Recommend ultrasound follow-up to confirm slow regression (and exclude tumour) because atypical round segmental infarcts may mimic tumour. [12]

Since segmental testicular infarction can be readily diagnosed with ultrasound, orchidectomy can be avoided in most cases.

**Differential Diagnosis List:** Segmental scrotal infarction of the left testis, probably related to APS/SLE., Testicular torsion, Epididymitis, Scrotal infarct, Testicular tumour, Epididymo-orchitis

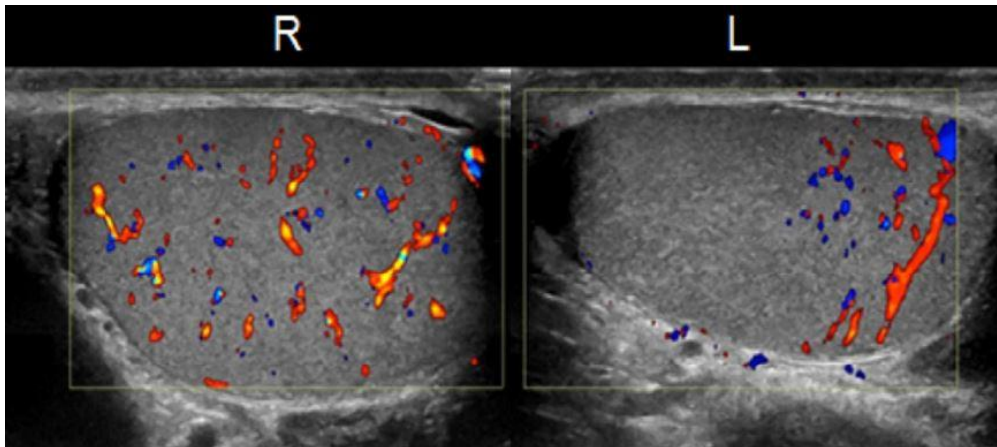
**Final Diagnosis:** Segmental scrotal infarction of the left testis, probably related to APS/SLE.

## References:

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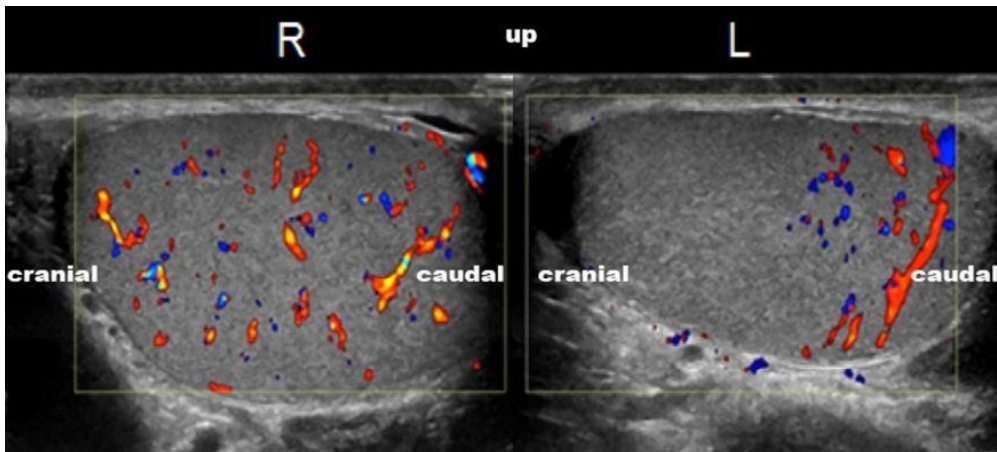
**Figure 1**

a



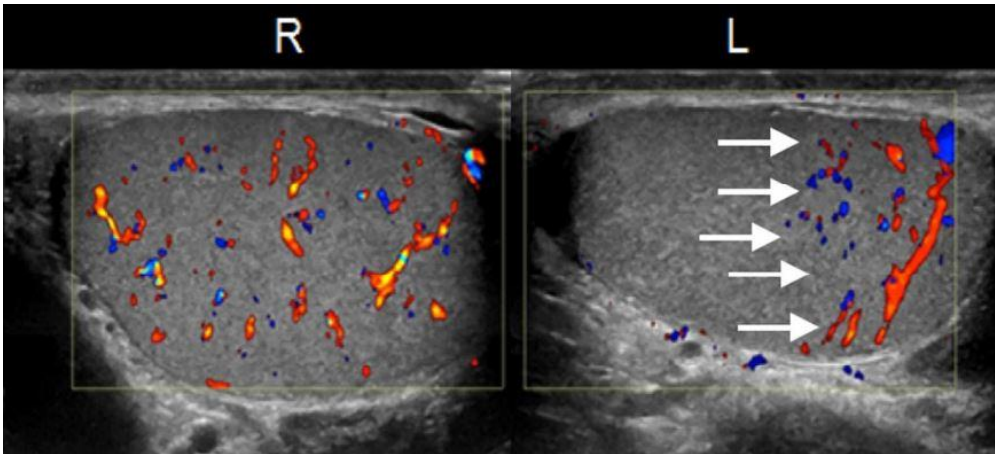
**Description:** Longitudinal duplex ultrasonographic view of both right and left testicle showing subtle hypoechogenicity and avascular upper pole of left testicle compared to the right. **Origin:** Bossu N, Department of Radiology, University Hospital Gasthuisberg Leuven, Belgium

b



**Description:** Annotation of the anatomy. **Origin:** Bossu N, Department of Radiology, University Hospital Gasthuisberg Leuven, Belgium

c



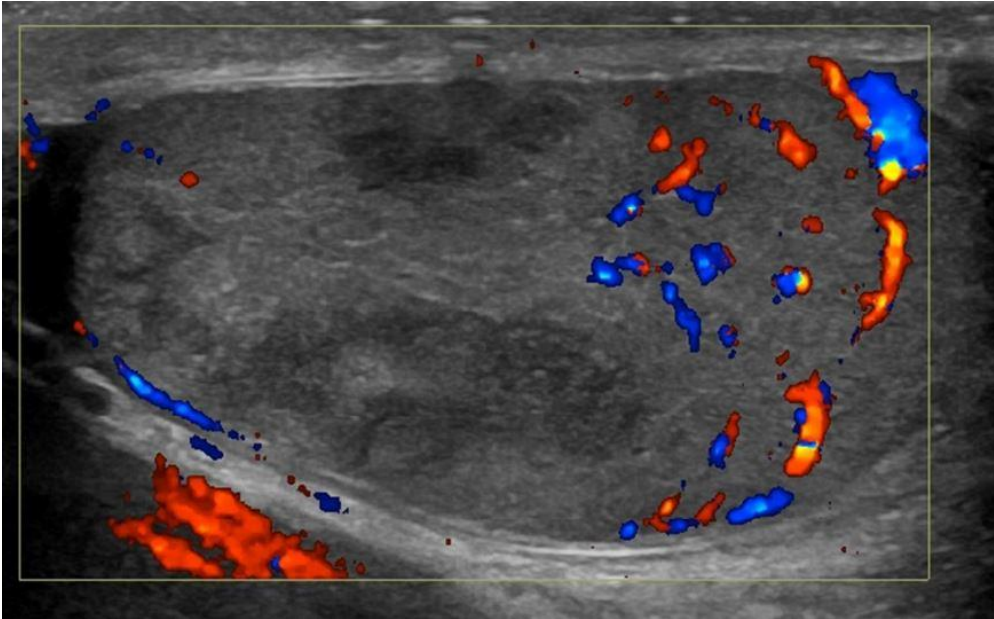
**Description:** Arrows indicating the abrupt but subtle change in echogenicity between upper and lower pole of the left

testicle when comparing to the right testicle. Note the avascular upper pole of the left testicle. **Origin:**

Bossu N, Department of Radiology, University Hospital Gasthuisberg Leuven, Belgium

**Figure 2**

a



**Description:** Follow-up ultrasound one day later. Longitudinal duplex ultrasonographic view of the left testicle now showing marked hypoechoic regions in the upper pole of the left testicle. Persistent avascular upper pole of the left testicle. **Origin:** Bossu N, Department of Radiology, University Hospital Gasthuisberg Leuven, Belgium