

CASE REPORT

Intratesticular haematoma: differentiation from tumour on clinical history and ultrasound appearances in two cases

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ABSTRACT. Intratesticular haematoma is not well described in the ultrasound literature and may be mistaken for a primary testicular malignancy if a detailed clinical history and careful ultrasound examination are not performed. We report two cases of intratesticular haematoma (one complicated by the presence of microlithiasis), describe the ultrasound appearances and document the natural history of the haematomas. A clinical history coupled with Doppler ultrasound features is crucial for conservative management.

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Scrotal ultrasound is the imaging modality of choice in the evaluation of patients presenting with testicular pain, swelling or a palpable lump, with exclusion of a testicular tumour of prime importance. Patients presenting with scrotal symptoms are often anxious about the possibility of the discovery of a tumour. Tumours normally present as a clinically apparent testicular "lump" but a proportion of patients report pain as a symptom [1]. A clinical history of a "lump" is often useful to the sonographer but symptoms of "pain" may be misleading in the presence of an intratesticular mass; a detailed clinical history is then relevant. An intratesticular haematoma, seen as a focal mass on ultrasound, is unusual and the patient normally reports preceding scrotal trauma [2]. We report two cases of low reflective focal intratesticular masses which resembled intratesticular tumours on initial ultrasound examination where the patients complained of pain but did not offer a history of scrotal trauma. However, a detailed clinical history obtained by the sonographer, in both cases revealing previous "forgotten" scrotal trauma thought trivial by the patients as was associated with sexual activity, confidently allowed for follow-up ultrasound examinations to demonstrate resolution of the appearances and the diagnosis of intratesticular haematomas.

Case reports

Case one

A 55-year-old man was referred to the ultrasound department by his general practitioner with symptoms of left scrotal pain of 2 weeks' duration. He had not offered a precipitating reason for the pain. An ultrasound

examination was performed using a high-frequency linear array transducer (15L8w) on a Siemens Acuson Sequoia machine (Siemens, Mountain View, CA), revealing two well-defined areas of low reflectivity within the left testis measuring 1.9×0.9 cm and 1.2×0.4 cm (Figure 1a). The abnormal areas did not demonstrate any internal colour Doppler signal (Figure 1b). The right testis was normal. Appearances were thought to represent two poorly vascularized primary intratesticular tumours. On direct questioning the patient gave a history of being "bitten" on the scrotum during sexual activity 2 weeks previously. With this information and the lack of vascularity within the lesions a diagnosis of an intratesticular haematoma was raised, with follow-up examination arranged. At the 1 month follow-up examination, the two lesions had altered, with only a single 0.9 cm diameter low reflective abnormality with central echoes present, without any internal colour Doppler signal (Figure 1c). 3 months later, an ultrasound demonstrated further retraction of the lesion to 0.6 cm, again appearing as an ill-defined area of low reflectivity (Figure 1d). Tumour markers (alpha-fetoprotein, lactate dehydrogenase and human chorionic gonadotrophin) remained within normal limits. These consecutive features together with the history were in keeping with intratesticular haematomas and the patient had remained in good health throughout.

Case two

A healthy 35-year-old man was referred to the ultrasound department by his general practitioner with left-sided scrotal pain of several weeks duration. An ultrasound examination performed using a high-frequency linear array transducer (15L8w) on a Siemens Acuson Sequoia machine (Siemens, Mountain View, CA) demonstrated florid unilateral microlithiasis in the left testis with an ill-defined low reflective lesion measuring 2.0×2.0 cm without internal colour Doppler

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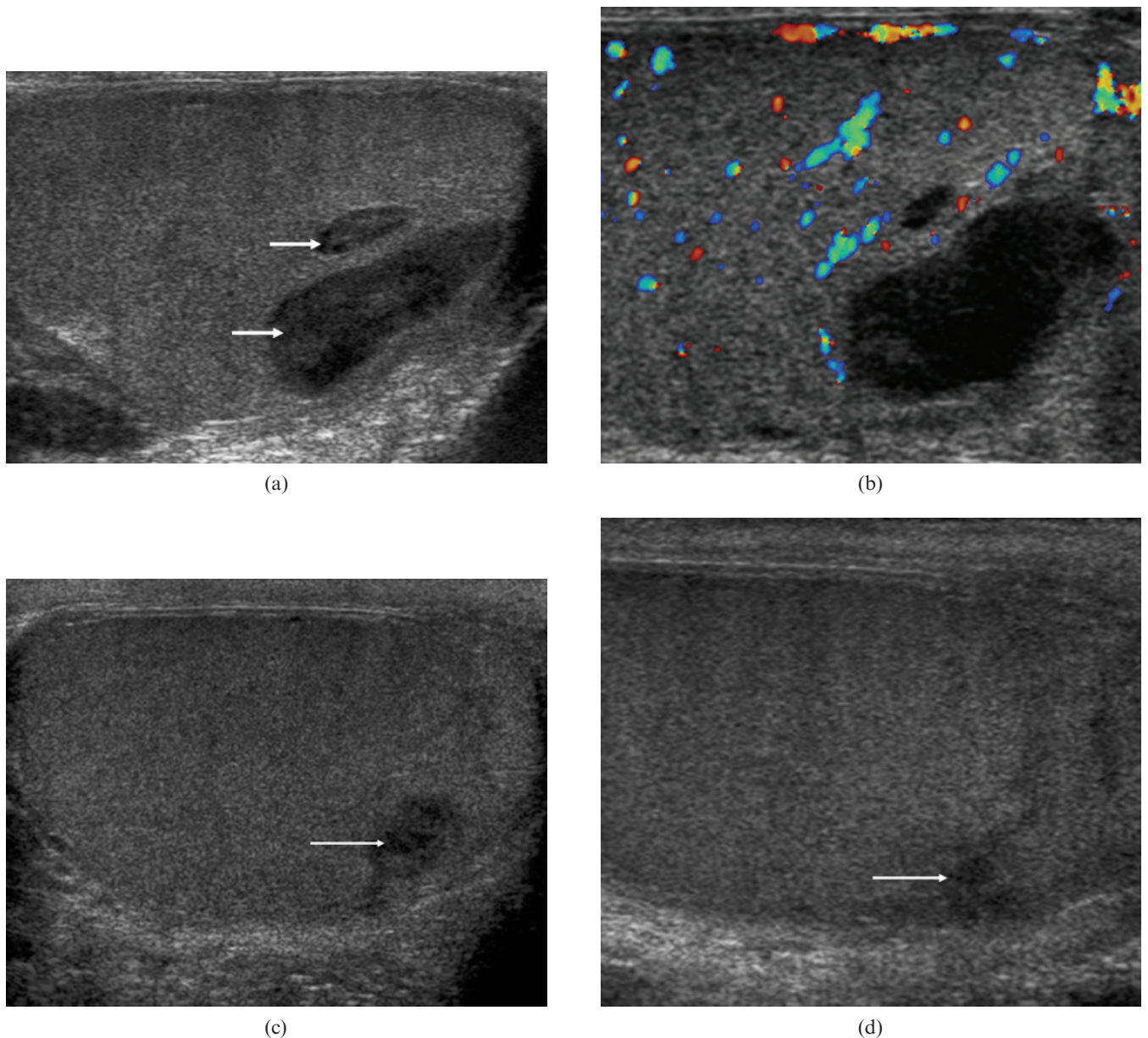


Figure 1. (a) Longitudinal image of the left testis demonstrating two low reflective intratesticular lesions (arrows) with evidence of internal areas of high reflectivity. (b) Colour Doppler image, on optimal low flow sensitivity, of the two lesions demonstrating no internal colour Doppler signal within the low reflective areas. (c) At the 1 month follow-up examination only a single low reflective lesion remains (arrow) with central echoes present. No internal colour Doppler signal was present in the lesion. (d) At 3 months the lesion has regressed further (arrow) appearing as an ill-defined area of low reflectivity with some internal echoes.

signal detected (Figure 2a,b). The lesion was thought to represent a poorly vascularized intratesticular tumour, known to occur with a higher frequency in the presence of microlithiasis. The right testis was normal. Further patient questioning revealed that during sexual activity several weeks ago an object (a shoe) thrown by the patient's partner had hit the groin region. With this history, the possibility of an intratesticular haematoma was raised, and follow-up ultrasound examination was arranged for 4 weeks. At 4 weeks the lesion had reduced in size, measuring 0.5×0.2 mm (Figure 2c). Tumour markers (alpha-fetoprotein, lactate dehydrogenase and human chorionic gonadotrophin) remained within normal limits. At 1 year follow-up, ultrasound demonstrated complete

resolution of the previous low reflective lesion in the left testis (Figure 2d).

Discussion

These cases highlight the clinical utility of high resolution ultrasound with colour Doppler in providing valuable information for the differential diagnosis of testicular lesions. More importantly, the cases demonstrate the necessity of a thorough clinical history as an adjunct to the ultrasound findings, particularly when the clinical history may be a source of awkwardness for the patient. The environment of the ultrasound examination

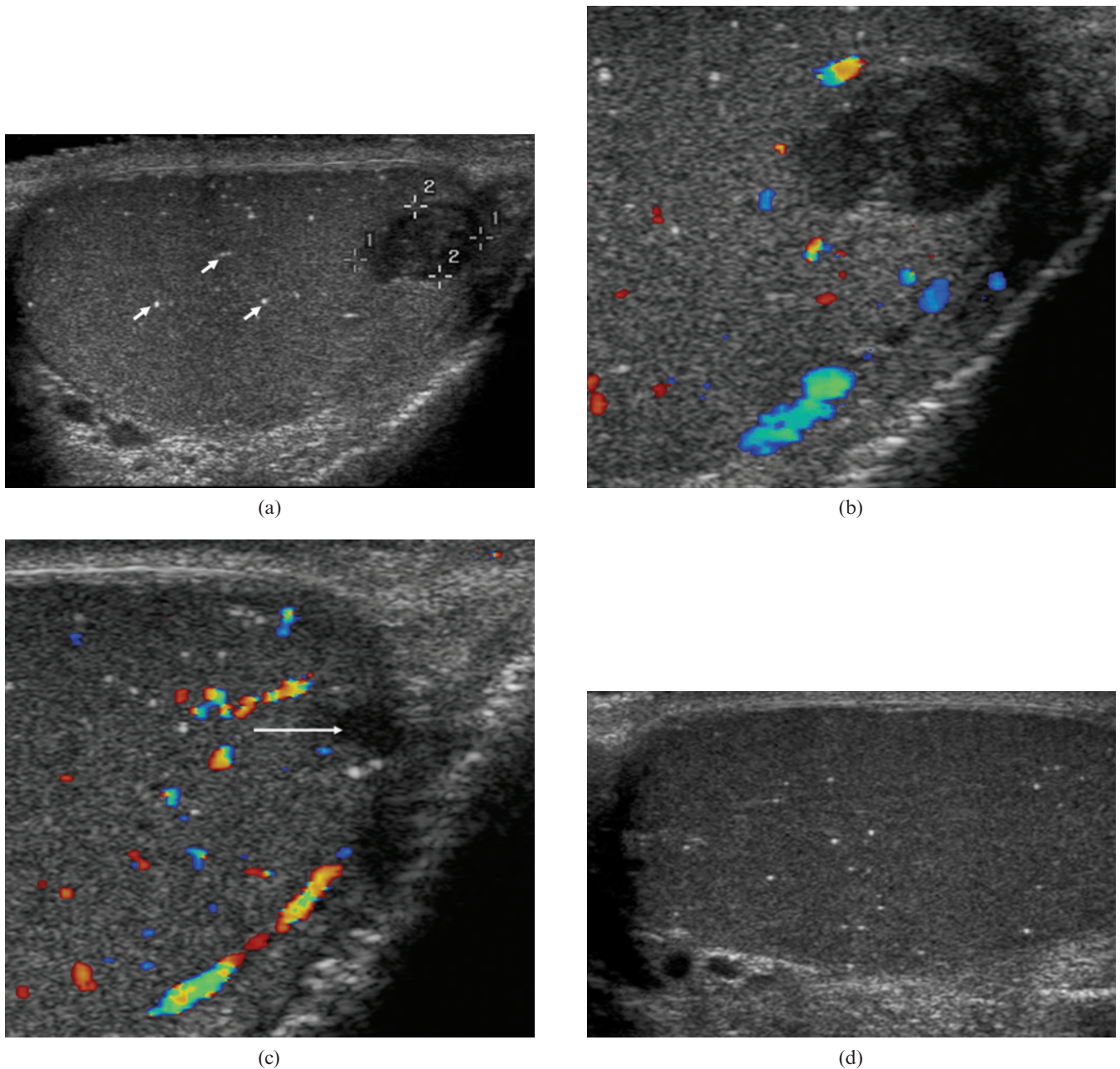


Figure 2. (a) Longitudinal image of the left testis demonstrating a focal area of low reflectivity (between cursors) with internal echoes, and widespread microlithiasis (arrows). (b) Colour Doppler image, on optimal low flow sensitivity, of the lesion demonstrating no internal colour Doppler signal within the low reflective areas. Internal echoes are again demonstrated. (c) At 4 weeks there has been reduction in size of the lesion (arrow), with no internal colour Doppler signal present. (d) 1 year later, there is no abnormality present in the left testis at the site of the previous lesion; microlithiasis remains.

room is often conducive to patient–operator interaction with pertinent points of the clinical history more forthcoming than in the clinical consultation room.

Ultrasound is highly sensitive in detecting testicular tumours with the specificity of ultrasound depending on the clinical referral pattern [1]. Many intratesticular lesions mimic malignant tumours including intratesticular haematomas [2], segmental infarction [3], focal orchitis [4], abscesses [5], spleno-gonadal fusion [6] and the presence of adrenal rest tissue [7]. Many non-malignant lesions do not demonstrate internal vascularity and therefore have no colour Doppler flow signal. Although there is an association of increased colour

Doppler signal with primary malignant tumours of the testis above 1.0 cm in diameter, below this size the colour Doppler signal is thought to be variable [8]. However, the testicular tumour size criteria for the detection of colour Doppler flow signal may well be less than the figure of 1.0 cm quoted with the introduction of newer high-frequency colour Doppler sensitive transducers [9]. Nevertheless, the reliability of the absence of colour Doppler signal from an intratesticular solid lesion is not adequate to confidently exclude a malignant lesion [10]. There is strong evidence for an increased prevalence of testicular tumours with the presence of testicular microlithiasis [11, 12], a condition seen in one of our patients,

further increasing the possibility of the presence of a malignant tumour.

Penetrating scrotal injury requires immediate surgical exploration without the need for ultrasound imaging. Blunt testicular trauma may be a result of obvious injury or iatrogenic as in the case of testicular sperm extraction [13]; ultrasound imaging is useful. The clinical history is invaluable in establishing the correct underlying diagnosis. Blunt testicular trauma may produce an array of ultrasound findings, depending on the severity of the injury, which include haematoma, fracture or rupture of the testis. The most important ultrasound feature to determine is whether the tunica albuginea is confluent. The ultrasound features of testicular rupture include an irregular testicular outline together with associated heterogeneous echo-texture of the testis [14]. A testicular fracture appears as a discrete cleavage line within the tunica albuginea, but is present in 17% of cases of testicular trauma [15]. The appearances of intratesticular haematomas, like haematomas elsewhere, may vary and evolve with time, and this important feature validates the need for serial ultrasound imaging if this diagnosis is suspected. Initially, acute haematomas appear of increased reflectivity and with temporal progression the haematomas become more complex and cystic in nature with evidence of septation, finally becoming low reflective as haematoma retraction occurs [16]. During this transition, haematomas need to be distinguished from other similar appearing lesions. Both cases illustrated demonstrated complete absence of colour Doppler flow within the lesions and early formation of internal echoes, features that are useful for the diagnosis of a haematoma. Furthermore, clot retraction occurred with complete resolution of ultrasound findings in 1 year in one of the patients (Case 2), although other authors have suggested that the resolution may be seen within 6–10 weeks [17] or by 6 months [18].

These two cases illustrate the need for a clear clinical history despite patient awkwardness, combined with the salient ultrasound features of a resolving low reflective focal intratesticular lesion with absent colour Doppler signal, to prevent unnecessary surgical exploration for the possibility of a malignant tumour. Confidence in the diagnosis will allow for ultrasound surveillance until resolution of imaging findings.

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