Rectus sheath haematoma in a canoeist

Nicola Maffulli MD PhD, Gianfranco J. Petri* MD and Ernesto Pintore MD*

Department of Orthopaedics (NM), Newham General Hospital, Glen Road, Plaistow, London, UK: *Centre Hospitalier d'Annecy, Departement d'Orthopedie et Traumatologie, Annecy, France

A 26-year-old male canoeist was referred with a 10-day history of abdominal pain, and a palpable mass in the left upper quadrant. No history of direct trauma was given. He was not taking any medication, and malignancy and inflammatory conditions were considered in the differential diagnosis. Ultrasonographic scan identified a mass originating in the rectus abdominis sheath. Ultrasonographically guided aspiration yielded some partially clotted blood, confirming the clinical diagnosis of rectus sheath haematoma. After conservative treatment, the patient resumed training, and is fully asymptomatic 1 year after discharge.

Keywords: Athletes, exertion, diagnostic ultrasonography, muscle sheath haematoma

Rectus sheath haematoma is an uncommon condition consisting in accumulation of blood in the rectus abdominis muscle¹, caused by rupture of epigastric vessels. It is more common in the lower abdominal quadrants.

Rectus sheath haematomas almost invariably present acutely^{1,2}, with localized abdominal pain of sudden onset. Although they are often labelled as idiopathic, and misdiagnosis may occur in up to 90% of cases¹, careful examination and history taking generally reveals a precipitating cause.

Causes of rectus sheath haematoma are prolonged violent coughing¹, intramuscular bleeding due to either anticoagulant therapy or haematological disorders³, muscular exertion⁴ and trauma¹. Pregnancy and ascites, with consequent stretching of the epigastric vessels, have also been implicated^{2,5}. Reported cases show a greater prevalence in women and on the right side, and present acutely¹.

Case history

A 26-year-old male canoeist of regional standard presented with a 10-day history of left-sided colicky pain, worse on sitting forward, not related to eating or to bowel movements. There were no gastrointestinal or urinary symptoms, and there was no history of recent weight loss.

The canoeist was otherwise well, afebrile, with normal pulse and blood pressure. He had good abdominal wall musculature, and gave no history of

unusual exertion or coughing. On palpation, a tender 4 × 6-cm smooth, non-pulsatile, non-mobile lump was located in the left hypochondrium. It was possible to get above the mass. A differential diagnosis with transverse colonic or gastric tumours, omental secondaries, pancreatic tumour and inflamed gallbladder was considered.

Haematology revealed normal full blood count, electrolytes and liver function tests. Abdominal ultrasonographic scan showed a left renal cyst, but did not detect the mass. Urinalysis was normal, and no growth was obtained after culture. Faecal occult blood test was negative. The patient underwent gastroscopy, colonoscopy and a barium enema. They were all normal. Eight days later, the patient developed ecchymoses in the periumbilical area, worse on the left.

A further ultrasonographic scan suggested that the mass was originating from the abdominal wall. Ultrasonographically guided needle aspiration produced some drops of semi-clotted blood, and a diagnosis of rectus sheath haematoma was made (Figure 1). On closer questioning, it became evident that the pain started at the end of a heavy competitive period, after 1 week during which the canoeist had participated in four races.

Gentle frictional massage and ultrasonotherapy were started on an outpatient basis. Gradually, the pain eased and, on the 19th day, the swelling was reduced to about one-quarter of its original size. It was no longer painful or tender.

Figure 1. Ultrasound scan showing the rectus sheath haematoma while it is being aspirated

Address for correspondence: N. Maffulli, Department of Orthopaedics, Newham General Hospital, Glen Road, Plaistow, London E13 8RU, UK

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The patient resumed gentle training 5 weeks after the pain had started, and returned to competition 2 months later. He remains fully asymptomatic 1 year after discharge.

Discussion

The diagnosis of rectus sheath haematoma is often difficult¹. It generally presents acutely, and may mimic other abdominal pathologies. Ultrasonographic scan is the investigation of choice^{2,5-8}, and an ultrasonographically guided needle aspiration may be performed if doubts still persist.

Titone *et al.*¹ believe that conservative treatment and avoidance of causative factors should be implemented. Our patient's pain gradually improved. However, the clinical presentation of a tender, solid mass in the upper abdominal quadrants warrants investigation, given the possibility of malignancy even in the younger age groups.

To our knowledge, this is the only reported case in an athlete. The role of physical exertion has

previously been stressed⁴, but it generally referred to elderly patients with poor abdominal muscles¹, not to young, healthy, athletic individuals.

References

- 1 Titone C, Lipsius M, Krakauer JS. 'Spontaneous' haematoma of the rectus abdominis muscle: critical review of 50 cases with emphasis on early diagnosis and treatment. *Surgery* 1972; **72**: 568-72.
- 2 Wyatt GM, Spitz HB. Ultrasound in the diagnosis of rectus sheath haematoma. *JAMA* 1979; **241**: 1499-1500.
- 3 Nosedá A, Bellens R, Van Gansbeke D, Gangji D. Rectus sheath haematoma mimicking acute splenic disease. *Am J Gastroenterol* 1983; **78**: 566-8.
- 4 Fraser-Moodie A, Cox S. Haematoma of the rectus abdominis from use of an exercise wheel. *Br J Surg* 1974; **61**: 577-9.
- 5 Lee PWR, Bark M, MacFie J, Pratt D. The ultrasound diagnosis of rectus sheath haematoma. *Br J Surg* 1977; **64**: 633-4.
- 6 Tromans A, Campbell N, Sykes P. Rectus sheath haematoma: diagnosis by ultrasound. *Br J Surg* 1981; **68**: 518-19.
- 7 Hamilton JV, Flinn G, Haynie CC, Cefalo RC. Diagnosis of rectus sheath haematoma by B-mode ultrasound. A case report. *Am J Obstet Gynecol* 1976; **125**: 562-5.
- 8 Spitz HB, Wyatt GM. Rectus sheath haematoma. *J Clin Ultrasound* 1976; **5**: 413-15.

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