Rectus sheath haematoma: a new set of diagnostic features

D Maharaj, M Ramdass, S Teelucksingh, A Perry, V Naraynsingh

Rectus muscle haematoma is a well documented clinical entity, but its diagnosis remains elusive. A haematoma within the rectus sheath produces a painful, tender swelling that can mimic an intraperitoneal mass with features of an acute abdomen. Two patients with rectus haematomas presenting after bouts of prolonged coughing are reported. In both cases, clinical features and ultrasound findings suggested the presence of intraperitoneal pathology. However, in both cases consistent findings in the history and examination pointed towards the diagnosis of a rectus haematoma. It is proposed that these simple clinical criteria are diagnostic of a rectus sheath haematoma, and can thereby avert an unnecessary laparotomy.

CASE 1
A 72 year old woman presented with severe abdominal pain after a bout of severe coughing. On examination, she was found to have generalised peritonism and a mass in the right lower abdomen that did not cross the midline, and seemed to be confined by the linea semilunaris. Carnett’s sign was found to be positive with the tenderness in the right lower abdomen worse, and additionally, the mass became less pronounced on elevation of her head.

An abdominal ultrasound revealed an 8 × 5 × 7 cm irregular cystic intraperitoneal mass seen superficially in the right iliac fossa, suggestive of an abscess collection (fig 1). An exploratory laparotomy was performed which revealed a haematoma of the right rectus muscle, 8 cm in diameter. No tumour or pus was identified and the inferior epigastric artery was intact. The haematoma was evacuated and the patient recovered uneventfully.

CASE 2
A 52 year old obese woman presented to the surgical service with features of an acute abdomen and a mass in the right upper quadrant. She had experienced a bout of violent coughing after choking on foodstuff and experienced a sudden tearing sensation in the upper abdomen accompanied by severe pain. Examination revealed a tender mass in the right upper quadrant, the presence of which was exaggerated on elevation of the head, and tenderness exacerbated by contraction of the rectus muscle; these are both features of Carnett’s test.

Ultrasound examination of the abdomen confirmed a 5 × 8 × 3 cm mass within the rectus sheath. This was evacuated via a small incision over the lesion. Histological evaluation of the rectus muscle biopsy revealed normal muscle tissue with no neoplastic cells. The patient recovered uneventfully.

DISCUSSION
In 1926, Carnett described a test to differentiate pain originating from the abdominal wall versus pain arising from intra-abdominal pathology. The test involves placing the patient supine and the site of maximal abdominal tenderness is identified. The patient then sits halfway up and if local palpation at the identified site causes increased tenderness, the test is said to be positive, that is, the cause of the abdominal pain and tenderness is located in the abdominal wall. If the tenderness on palpation of the site in question is alleviated then the pathology is likely to arise from the abdominal viscera as the contracted rectus muscle now protects the intra-abdominal contents. Causes of abdominal wall tenderness producing a positive Carnett’s sign include myositis,
coughing is a well-recognized cause of rib fractures. Thomson and Francis assessed this test in 120 patients and found it to be a reliable means of identifying abdominal wall pathology, saves the expense and dangers of investigation, and even the risk of unnecessary surgery.\(^5\) The presence of a rectus haematoma also produces a positive Carnett’s test as observed in both cases. Contraction of the rectus muscle compresses the haematoma and exacerbates the pain and tenderness.

We wish to make an addition to Carnett’s test. With intra-abdominal masses, contraction of the rectus muscle will lead to disappearance or at least a reduced appreciation of it, as the contracted muscle will conceal the mass. For masses arising within the rectus sheath, contraction of the musculature will also make the mass more difficult to palpate, since the anterior rectus sheath becomes taut. We found this sign to be consistent in our cases.

Ultrasonography can be used to differentiate intraperitoneal lesions from extraperitoneal lesions. However, such testing is subject to error, both in obtaining an accurate scan, which may be limited by probe induced tenderness on the acute abdomen, and in interpretation of the images. This is demonstrated by case 1, in which two qualified ultrasonographers identified the lesion as being “intraperitoneal”.

This report also highlights another important point. Violent coughing is a well-recognized cause of rib fractures.\(^6\) The association with rectus haematoma is less recognized. Coughing causes intense contraction of the rectus muscle with tearing and bleeding from the perforating branches of the inferior epigastric vessels within the muscle substance. The occurrence of sudden abdominal pain after severe straining—for example, coughing and sneezing—should alert the clinician to this possibility.

In addition, the condition of rectus haematoma should be suspected in such a patient with the following signs: a mass that is confined by the linea alba and the linea semilunaris, and a positive Carnett’s test. Furthermore, the diminution of the mass brought on by contraction of the rectus is diagnostic of any mass arising from or involving the rectus sheath or its contents. These simple features in the history and examination could be used to aid in diagnosis of a rectus haematoma in developing countries where ultrasonography and computed tomography are not readily available. Even in developed countries, where limitations on investigative procedures in not a significant problem, these simple clinical criteria may be used as an adjunct to diagnosis and is particularly attractive as a method of cost containment.

REFERENCES

Rectus sheath haematoma: a new set of diagnostic features

D Maharaj, M Ramdass, S Teelucksingh, A Perry and V Naraynsingh

doi: 10.1136/pmj.78.926.755

Updated information and services can be found at:
http://pmj.bmj.com/content/78/926/755

These include:

References
This article cites 15 articles, 0 of which you can access for free at:
http://pmj.bmj.com/content/78/926/755#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Topic Collections
Articles on similar topics can be found in the following collections
- Clinical diagnostic tests (395)
- Ophthalmology (101)
- Pain (neurology) (231)
- Radiology (418)
- Radiology (diagnostics) (291)

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/