Torbay and South Devon NHS

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Rectus abdominus muscle haematoma– A rare cause for acute right iliac fossa pain.

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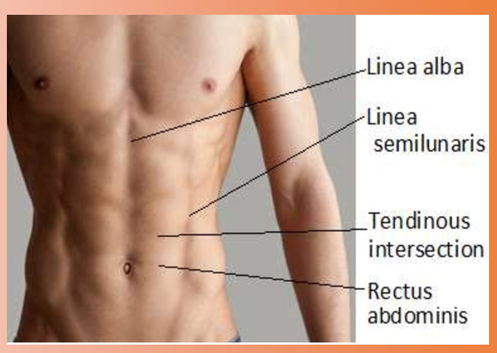
Introduction

This poster presents an unusual case of a Rectus Abdominus muscle haematoma diagnosed using ultrasound in our hospital recently. This is an uncommon cause of acute Iliac fossa or lower abdominal pain. High impact circuit training and rapid Abdominis muscle contraction are a mechanism of injury in this case. Once the muscle is traumatised this leads to an accumulation of blood in the sheath or muscle secondary to a rupture of the feeding epigastric artery vessel. This may occur in any abdominal quadrant but it is typically in the sub - umbilical region. This is where a rectus abdominis posterior wall supportive deficit occurs at the linea semilunaris and where the weak transversalis fascia and peritoneum meet. This is the essential supportive framework for the rectus abdominis but with a relative infrastructural rigidity causing a firm adherence of inferior epigastric penetration arteries to rectus abdominis it renders them fragile to sudden forces.



Case report

The objective of the investigation was to explain the cause for a 26 year old woman experiencing acute and migrant right iliac fossa pain of uncertain origin. She had a past history of a right oophorectomy in 2018 for a large dermoid cyst. Possible appendicitis or menstruation pain was suspected. Pain level was increasing and inflammatory markers were non specific. A first line investigation with ultrasound was indicated and the patient was made an ambulatory appointment with our acute scan service.

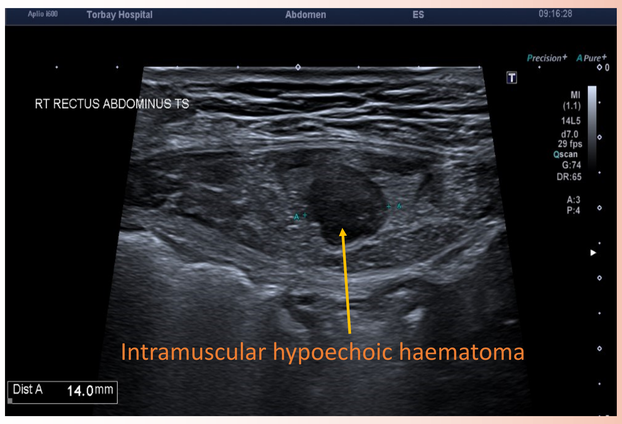
Examination of the whole pelvis was performed using a curve linear abdominal transducer and vaginal transducer for closer ovarian and deep pelvic imaging. No gynaecological or obvious right iliac fossa bowel pathology or appendicitis were evident

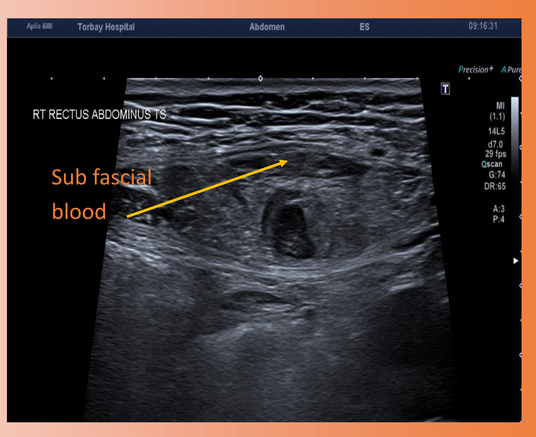
During any scan, it is helpful to apply direct questioning of the patient, this information will assist the examiner making a more critical evaluation and guide the examiner to a clinical decision. Additional information for this patient was - *'Patient gives a recent history of manual patient moving in work, gym exercising and housework, she has 3 children.'*

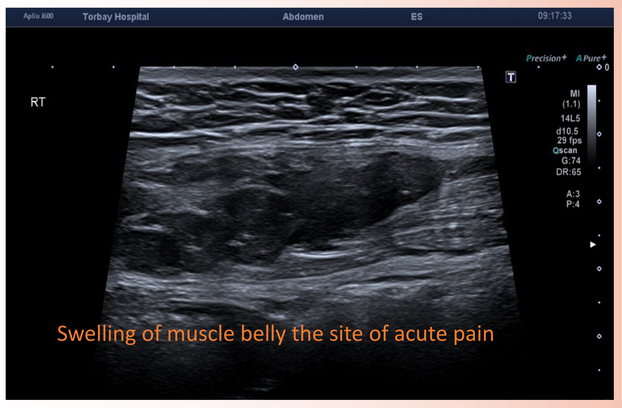
Asking the patient where the pain is sited is important and the examiner spotted the abnormal appearance of the muscle anteriorly. Examination with a linear 14Mhz transducer was undertaken to a depth of 4cm, this revealed the right rectus abdominis muscle was bulky compared to the left, also evident was a well demarcated, central, low reflective ,fluctuant area within the rectus abdominus muscle belly and importantly no vasculature was demonstrated internally. An acute intramuscular haematoma was the most likely cause for the given history. The patient stating she was one week post circuit training, since the severe pain developed.

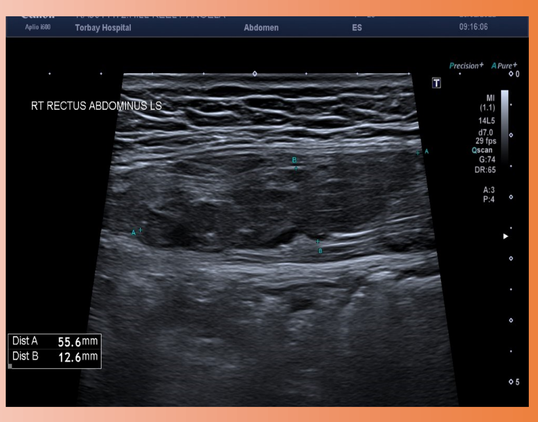
The swelling of the muscle and haematoma had a compression effect with the remaining muscle this caused exquisite pain on movement and palpation.

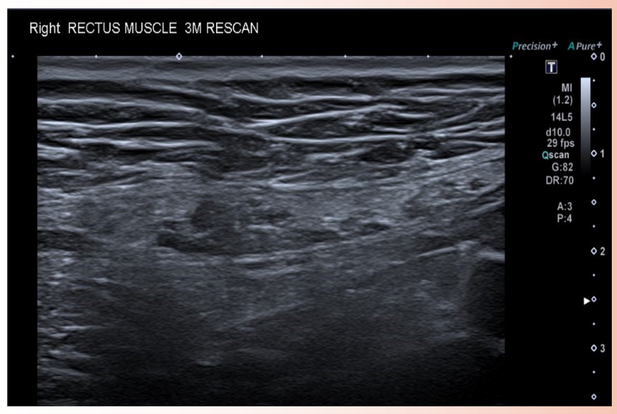
The report stated the description and size of the haematoma as a likely cause and recommendation made for a 3month follow up US scan. Her management plan was rest, ice, pain relief, physio assessment and conservative treatment with follow up.

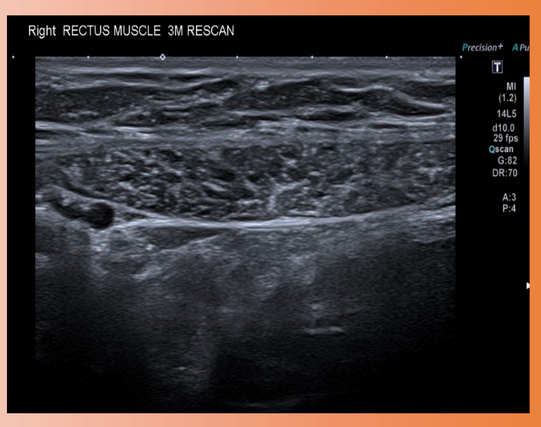












Discussion

Rectus sheath haematomas are more common in females than males with a reported ratio of 3: 1, but are still a rare clinical presentation. Some additional causes include bouts of coughing, straining, pregnancy, previous abdominal surgery, laparoscopy and self injection of intramuscular medications. An additional risk group of patients are those on anticoagulation therapy.

The common site for haematomas is in the lower abdominal wall where a shearing of the arterial supply penetrating the muscle from sudden over exertion of poor condition muscle causes spontaneous rupture of the epigastric arterial supply. These injuries can be asymptomatic if mild, however an accumulation of blood will lead to compartment pressure symptoms. Conservative treatment is favoured for a nonexpanding haematoma causing no haemodynamic compromise. When conservative treatment fails, the hematoma could be evacuated surgically with concomitant ligation of the bleeding vessels. Grade I haematomas may resolve rapidly within approximately 30 days, Grade II haematomas require 2–4 months and Grade III haematomas require more than 3 months to resolve.

Failure to recognize this condition could result in futile laparotomy since the majority of patients with rectus sheath haematoma can be managed conservatively.

Conclusion

A standard protocol defines a follow up period for haematomas to ensure the abnormality is not more sinister such as a soft tissue Sarcoma. Follow up examination showed the haematoma was fully resolved at 3months. Not all practitioners feel comfortable or would utilise the MSK transducer when investigating RIF pain but sonographers should seek to question the patient during examination to enhance their critical thinking for other pathologies in women who may present typical or complex histories.

This case shows that sonographers require enhanced skills to widen their knowledge of muskuloskeletal anatomy and common pathologies. The role of the sonographer in the walk in acute scanning rooms is leading to a requirement for higher skill at image interpretation and critical knowledge of good history taking and learning to expect the unexpected pathology.

It is essential to utilise specialist trained experienced colleagues and sonography education to widen MSK skill mix in departments. This can therefore reduce additional cross sectional imaging pressures. Ultrasound of the pelvis is the safest and most available method of imaging patients with pelvic pain, therefore I feel a good knowledge and confidence scanning the superficial soft tissues , lymph nodes and muscles will often reveal tell tale signs of other injury and pathology such as this case.

References

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