Abstract: Abdominal wall pathology is a frequently overlooked cause of acute abdomen and palpable mass. Increasing use of antiplatelet and anticoagulant therapies has led to an increase in the incidence of spontaneous rectus sheath hematoma (RSH). A high index of suspicion is needed for diagnosis as it can closely mimic other causes of acute abdomen and result in significant mortality. Herein, we report a case of RSH presenting with abdominal mass which was confused to a malignant ovarian tumour causing unnecessary concern to the patient & her attendees. We wish to highlight the need to increase awareness among primary and emergency physicians about considering RSH in the initial differential diagnoses of abdominal pain.

Key words: Abdominal mass; Hematoma; Laparotomy; Ovarian tumour; Rectus sheath

Introduction: Rectus sheath hematoma is an uncommon (1.8%), often clinically misdiagnosed cause of acute abdomen and abdominal mass. It is an ancient disorder accurately described by Hippocrates and mentioned by Galen. It is formed due to collection of blood between rectus sheath and peritoneum. Hematoma can occur in patients with certain risk factors as mentioned below or sometimes it can form spontaneously. There are a variety of clinical features ranging from acute abdominal pain [1], Shock, bladder symptoms to asymptomatic palpable mass in lower abdomen. So high degree of suspicion is required to diagnose this condition. It is a benign self-limiting condition with a mortality rate of 4% in Type III.

Case report: 65year old post menopausal, hypertensive woman with past history of cerebro-vascular
accident, went to private hospital for viral fever with thrombocytopenia 1 week back. She had accidental fall 5 days back with head injury and black eye and altered sensorium. CT brain showed normal study. She was diagnosed to have metabolic encephalopathy and severe anemia due to dehydration and electrolyte imbalance. This was managed conservatively with intravenous fluids and 3 units of fresh blood transfusion. After a week she presented to us at Mamata General Hospital, Khammam, with mass per abdomen and retention of urine. The examination was carried with the prior consent from the patient, and preliminary examination revealed that patient was stable and had moderate anemia. Per abdomen: A mass of 24 weeks size was palpated in the lower abdomen, which was firm and tender with ill defined borders and lower border was not felt and mobility restricted. Per speculum examination: Vagina was narrow & cervix was flushed with the vault. Bimanual examination, fullness was felt in the right, anterior and left fornices. Uterus was not felt separately. Per rectal examination: rectal mucosa was free. Provisional diagnosis of malignant ovarian tumour was made.

Routine investigations were normal except for anemia. USG with Doppler showed, mixed echogenic mass 14x10 cm with cystic and solid areas seen in the pelvis with no vascularity as shown in figure-1. Uterus was atrophic and ovaries not visualized separately. Contrast CT abdomen and pelvis showed 15x12x10 cm, heterogenous cystic mass in the lower abdomen with mild enhancement of septae and moderate displacement of the bladder to right with peripheral rim enhancement as in figure-2. Impression: cystic ovarian tumour with malignant features. CA 125 levels were mildly elevated (51.1 KAU/L)

Figure 1: USG showing mass lesion

She was posted for Staging laparotomy. Sub-umbilical mid-line incision was given. A large rectus sheath haematoma of 15x10 cm was noted in the lower abdomen between posterior surface of the rectus muscle and transversalis fascia extending to the space of retzius as seen in figure-3. Haematoma was bilobed and more towards right side. Evacuation of haematoma was done. There were no active bleeding points. Peritoneum was opened and uterus and ovaries were found atrophic. Abdominal wall was closed in layers with closed suction drain at haematoma site.

Figure 2: CT scan showing mass lesion

Figure 3: showing rectus sheath hematoma at laparotomy

Post operatively, 1 unit blood was transfused. Patient was stable throughout. Drain was removed on 9th post operative day. Suture removal
was done and patient was discharged, next day. During follow up visits, no recurrence was found.

Discussion

Rectus sheath haematoma is more common in females and its presentation is more likely to be atypical in elderly patients with complaints of dyspnoea, confusion or urinary retention. Risk factors include elderly age, female sex, African race, use of anticoagulation, anti-platelet agents, chronic cough, pregnancy, previous abdominal surgeries, medical problems like hypertension, arteriosclerosis, collagen vascular disorders, leukemias, blood dyscrasias, hemophilia, abdominal trauma [2]. Vigorous uncoordinated rectus muscle contraction, Endometriosis of rectus sheath, recent abdominal surgery with trauma to Superior & inferior epigastric arteries. Haematoma can also form spontaneously without any risk factors [3]. Above patient was 65 year old, female, with hypertension, old CVA, thrombocytopenia and trauma.

If present above arcuate line it presents as unilateral, spindle-shaped mass as shown in figure-4. If below arcuate line it is large, bilobed and spherical as in figure-5. Peritoneal irritation leads to abdominal rigidity and gastro-intestinal symptoms. Dissection of haematoma inferiorly into the space of retzius can masquerade as pelvic tumour causing irritation of bladder, as in above case.

Figure 4: showing haematoma above arcuate line

Figure 5: showing haematoma below arcuate line

It is classified according to its CT scan appearance (Bernat et al 1996l)

- **Type I**: intramuscular, unilateral, increase muscle size, ovoid/fusiform hyperdense foci with mild to moderate pain. Doesnot require hospitalization as it resolves within 1 month.
- **Type II**: intramuscular, with blood between the muscle and transversalis fascia. Perivesical space free, usually bilateral, presents with moderate to severe pain, may require hospitalization for observation. Resolves in 2-4 months
- **Type III**: intra or extramuscular with blood between muscle and transversalis fascia extending into prevesical space. Risk factor: Anticoagulation most frequently seen. Requires hospitalization, blood transfusion and surgical intervention. Needs more than 3 months to resolve, no recurrence and long term sequeliae.

Above case belonged to this type, but by the time she came to us she was stabilized and presented with abdomino-pelvic mass and retention of urine, that was diagnosed as malignant ovarian tumour.

**Mortality** is 4%. Extra care should be devoted to an elderly patient, who needs aggressive resuscitation, anticoagulation reversal and admission.

**Symptoms-**:

Typical cases may present with variety of symptoms like, Acute abdominal pain, Fever and chills, nausea and vomiting, Shock, bladder symptoms like retention of urine due to peritoneal irritation and Pulpable mass. Atypical cases have insidious onset and form Differential diagnosis for tumours. Signs are Low grade fever, Signs of shock like hypotension, tachycardia, tachypnoea, palpable, firm, painful non pulsatile mass (bilobed) in lower abdomen, that doesn’t move with respiration, rebound tenderness and guarding & presence of various signs like-Fothergill sign, Carnett sign [4], Cullen sign [5], Grey Turner sign. Per vaginum examination may show mass anterior to vagina and above pubic symphysis.

**Differential Diagnosis** includes abdominal wall tumor (desmoid, neurofibroma, sarcoma), causes of acute abdomen [6] like torsion ovarian cyst, ruptured aneurysm, intestinal obstruction [6], ectopic pregnancy, disrupto placenta and red degeneration of fibroid in pregnancy. Laboratory investigations show decreased hematocrit, increased WBC count. Coagulation profile is a must in oral anticoagulant therapy. USG is used for size, location, diagnosis and to monitor evolution of haematoma. Early cases, it is sonolucent and in late cases it appears heterogenous.
CT scan and MRI are more sensitive. Scintigraphy may be used to show the site of bleed with Tc 99 labeled RBC. There were no features of acute abdomen at presentation in above case. USG, CT scans, and raised CA 125 levels pointed towards malignant ovarian tumour.

Type I/II and stable cases can be managed conservatively with rest, analgesics, ice packs and treatment of predisposing factors. Fluid resuscitation, blood transfusion, reversal of anticoagulation and invasive procedures are needed for acute bleeding with enlarging hematoma or unstable patient with peritoneal signs. Therapeutic angiography with embolisation of vessel or Operative therapy with clot evacuation, ligation of bleeding vessel and closed suction drainage may be considered.

In above case, only at laparotomy, hematoma of 15x10 cms was discovered in the transversalis fascia extending into the space of retzius causing urinary retention and misdiagnosed clinically as pelvic tumour. As it was posterior rectus sheath hematoma, even abdominal signs were absent.

Conclusion

Rectus sheath hematoma is a well documented entity, but has remained elusive. It can mimic acute abdomen in typical cases and abdomino-pelvic tumour in atypical cases. So high degree of suspicion especially in elderly women with risk factors is essential. Early USG and CT scan is necessary to reduce the morbidity and mortality. Prompt history taking, with careful physical examination and appropriate imaging studies help in correct diagnosis.

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References

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