



Symptomatic Postoperative Rectus Sheath Haematomas

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Abstract

We retrospectively reviewed six cases of post-operative rectus sheath haematoma (RSH) managed at our institute during last six years. Out of 6 patients (mean age 27 years) who presented with RSH, four preceded caesarean section and two abdominal hysterectomy. They presented clinically as pain abdomen (n-6), shock (n-3), DIC (n-2) and fever (n-1). Haemoperitoneum was observed in 3 patients with shock and the diagnosis was confirmed at surgery. Three clinically stable patients with an infraumbilical abdominal mass were managed conservatively. One required US guided aspiration of the infected haematoma. Massive RSH is an unusual potentially life threatening condition. The diagnosis should be considered in all patients with acute post-operative pain and free fluid in the abdomen.

Keywords

Rectus sheath, Haematoma, Abdominal surgery.

Introduction

Rectus sheath haematoma is the most common primary nonneoplastic condition of rectus muscle and sheath. Most reported cases have been found to occur spontaneously. It may also occur as a result of trauma, surgical intervention, and other causes, including anticoagulant therapy and blood dyscrasia. Its clinical importance is related to its inclusion in the differential diagnosis of intra-abdominal tumors and acute abdominal inflammatory conditions. There have been approximately 500 case reports till 1990 quoted in literature (1).

Material and Methods

We retrospectively reviewed 6 cases of rectus sheath haematoma managed at our institute during the last six years from 1999-2005. 3 haemodynamically unstable patients (Group 1, n-3) required hospitalization and exploratory laparotomy whereas 3 clinically stable patients (Group 2, n-3) were kept on regular follow up and managed conservatively. All were referred cases,

and a diagnosis of rectus sheath haematoma was made at our institute, not suspected by the referring clinic.

Results

Mean age in group 1 and 2 was 31 and 39 years respectively. With regard to parity, one was a primipara and 5 multiparas. As far as precipitating factors were concerned, all haematomas of the rectus sheath were postsurgical, following obstetrical or gynaecological surgery. 4 were immediately following caesarean section (3 of Group 1) (1 of Group 2) and 2 following abdominal hysterectomy (2 of Group). The most common symptom was pain abdomen (n-6). All patients in Group 1 (n-3) were haemodynamically unstable and presented with hypovolumic shock (n-3), DIC (n-2), fall in haematocrit (n-3), abdominal distension (n-1) and haematuria (n-1). The clinically stable patients in Group 2 (n-3) had palpable tender infraumbilical masses (n-3), postoperative fever (n-1) and fall in haemoglobin (n-1).

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There was a past history of lower abdominal surgery in 5 patients, Group 1 (n-3) and Group 2 (n-1) had one previous caesarean and Group 2 (n-1) had previous three caesarean sections. Ultrasound findings of the abdominal wall in Group 1 were free fluid (n-3) and localized collection in the abdominal wall (n-1). Group 2 features were a hypoechoic mass (4x 3 cm) (n-1), localized cystic collection (5 x 4 cm) (n-1) and a complex mass with low level internal echoes (5 x 4 cm) (n-1). All were infraumbilical (n-3) with two on the right side. Surgery was required in all patients of Group 1 (n-3). Intraoperative findings were massive rectus sheath haematomas in all (n-3), one localized to rectus sheath 8 x 8 cm (n-1) and all ruptured into free peritoneum (n-3). There was marked disruption of muscle fibres also. Evacuation of the haematoma and drainage of

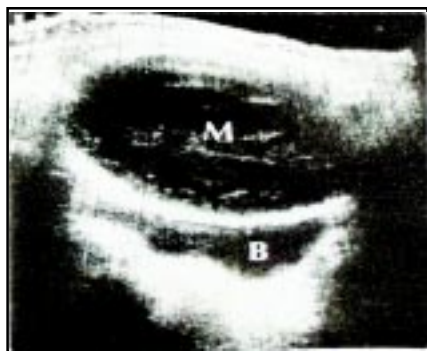
haemoperitoneum followed by peritoneal lavage was done. Bleeding vessel was identified in one patient, same ligated. Group 2 (n-3) patients were expectantly managed but one required ultrasound guided aspiration. Predisposing factors at abdominal surgery were intraoperative adhesions (n-4), inadequate haemostasis (n-1), primary vessel rupture at drain insertion (n-1) and excessive separation and undermining of muscle (n-1). Postoperative course was an uneventful recovery (n-1), ischaemic hepatitis and acute renal failure (n-1) and acute respiratory distress syndrome (n-1) in Group 1 patients followed by gradual recovery. Among Group 2 patients, one which required aspiration and the other two haematomas managed expectantly had no recurrence on follow up. For a brief summary of clinical course and management details (Group 1 and 2), refer to Table 1 and 2.

Table 1
Clinical Case Profile of Group 1 (n-3) patients

No.	Age & Sex	Parity Etiol	Clinical Features	Laboratory Inv.	Ultrasound Abdomen	Intraoperative Findings	Postoperative Course
1	35/F	P3+0 +2+3 Emer LSCS	PPH. Hypovolumic shock, DIC haematuria	Anemia Deraged coagulation profile	Free fluid in abdomen	Large haematoma in rectus sheath (8x8 cm) haemopentaneum 4 litres	Ischaemic hepatitis and acute renal failure gradual recovery
2	26/F	P3+0 +1+1 Emer LSCS	PPH. Hypovolumic DIC haematuria	Anemia Deraged coagulation profile	Free fluid in abdomen	Marked disruption of Mucle fibres, haemopentaneum 3.5-4 litres	ARDS clinical improvement
3	32/F	P2+0 +0+2 Emer LSCS	Shock Abdominal distension haematuria	Severe Anemia	Free fluid in abdomen	Primary vessel rupture haemopentaneum 1.5 litres	Uneventful recovery

Table 2
Clinical Case Profile of Group 2 (n-3) patients

No.	Age & Sex	Parity, Etiol factors	Clinical Features	Pathology	Ultrasound Abdomen	Management	Follow up
1	47/F	P3+0+2+3 Prev. 3 LSCS Post TAH D3	Pain along S/L, palpable mass 4x4 cm	Adhesion Drain insertion	Hypoechoic area	USG guided aspiration Antibiotic, Anti inflammatory	No recurrence
2	30/F	P1+0+1+1 Emer LSCS D7	Acute pain along S/L, tender infraumbilical mass 8x8 cm Fever	Inadequate haemotasis	Confirmed as RSH	Conservative	Gradual resolution of the mass
3	32/F	P2+0+0+2 Prev. 3 LSCS Post TAH D5	Infraumbilical mass 3x3 cm	Excessive separation and undermining of muscle	Localised collection in abd. wall	Expectant	Resolved in 6 weeks



Longitudinal scan with a large well defined transsonic mass with well defined internal echoes. (B) Bladder,(M) Mass.

Discussion

Rectus sheath haematoma is an uncommon and often misdiagnosed condition. It has been variously termed in literature as rupture of the inferior epigastric artery or inferior epigastric syndrome or abdominal wall haematoma. Haematoma can develop due to rupture of epigastric vessels or one of its branches or rectus abdominis muscle, extending potentially towards preperitoneal space or into free peritoneum (2). Its most common localization is infraumbilical. Standard textbooks of gynaecology or surgery make little or no mention of the subject. A diverse number of predisposing factors have been described: bout of coughing, sneezing, direct trauma, physical exertion, pregnancy, hypertension, bleeding disorders, patients on anticoagulants, previous abdominal surgery, increasing age, inflammatory and degenerative diseases of muscle, trauma to vessels during surgery, paracentesis, amniocentesis, laparoscopy and following subcutaneous injection of insulin and goserelin (3). Henzel and Stephenson listed the predisposing factors at abdominal surgery as vigorous retraction, inadequate haemostasis, needle laceration, slipped ligatures, impaired mobility of muscles, sawing effect of abdominal wall sutures, excessive separation and undermining of muscle (4).

RSH can present diagnostic dilemmas due to its presentation as an acute abdomen or a space occupying lesion. Acute abdominal inflammatory conditions include acute appendicitis, perforated ulcer, ovarian cyst torsion, intestinal obstruction, tumor and pregnancy related (degenerating leiomyoma, abruption placentae, rupture uterus). Abdominal wall tumors described are lipoma, haemangioma, neurofibroma, desmoid tumor, soft tissue sarcoma, lymphoma and metastatic lesions (5). Diagnosis can be confirmed by ultrasound (cystic or solid depending on the stage of

resolution), CT scan (hyperdense mass if acute, isodense or hypodense if chronic RSH) or MRI (high signal intensity area on both T1- and T2- weighted images). Management depends upon the haemodynamic stability of the patient. Decision for exploratory laparotomy has to be taken in case of complications, such as rupture into the free peritoneum, infection or haemodynamic repercussions. Surgery consists of making an incision on the mass, evacuation of the haematoma, local saline wash and identification and ligation of any bleeding vessel if identified (6). Expectant management is considered if the patient is clinically stable. They can be kept on a regular follow up and treatment of the identified cause is done if possible. The reported maternal mortality due to RSH has been reported as 8.7%. Treatment by microcoil and gelfoam embolisation has been reported by Lefere *et al* for expanding haematoma of the lateral abdominal wall after blunt abdominal trauma (rupture of ascending branch of deep circumflex iliac artery) (7).

Conclusion

The aim of presenting these cases is to make the gynaecologists and obstetricians think of the rare possibility of acute postoperative pain abdomen with fall in haematocrit and free fluid in abdomen as a cause of haematoma of rectus sheath when other traditional causes have been excluded by standard investigations. It is more common if there is history of multiple infraumbilical abdominal surgeries especially transverse incision, resulting in injury to inferior epigastric artery. High degree of clinical suspicion and timely diagnosis are essential prerequisites in its management.

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