ACUTE TRAUMATIC ABDOMINAL WALL HERNIA DIAGNOSED BY ULTRASONOGRAPHY: A CASE REPORT.

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ABSTRACT

A traumatic abdominal hernia is a rare clinical entity despite an overall increase in blunt abdominal trauma. Early recognition of the injury is important for this condition is often associated with other intra-abdominal organ injury. The diagnosis can be made by physical examination alone. Plain film, computed tomography and ultrasonography have also proven useful. This paper reports a case of acute traumatic abdominal wall hernia diagnosed by ultrasonographic examination following a motorcycle accident.

CASE REPORT

A 18-year-old man was brought to the emergency department after he was involved in a motor-vehicle accident. He described that his bicycle ran over a stone and he was thrown forward and was hit in the lower abdomen region by the handlebar. On initial examination, the patient was in good conscious and alert and his vital signs were normal. There was a swollen area with ecchymosis at the point of impact approximately 10 cm. in diameter. The patient complained of a marked tenderness over this area. Acute abdominal series disclosed no free air or free fluid in the abdomen. The bowel pattern was normal. The patient underwent an ultrasonographic examination in order to evaluate for solid organ injury. It showed normal appearance of the liver, gall bladder, spleen and both kidneys. There was no free fluid in the abdomen. A scan over the swollen area using a 7.5 MHz linear transducer showed discontinuation of the rectus muscle and rectus sheet just inferior to the umbilicus with bowel loops protruding through. The bowel loops lied in the subcutaneous tissue of the anterior abdominal wall. (Fig.1) Motion of the herniated bowel was clearly revealed. A diagnosis of blunt abdominal trauma with traumatic abdominal wall hernia was made. The patient was transferred to the operating room where the operation was performed through a midline incision. There was transverse and vertical tear of the peritoneum, rectus sheet and rectus muscle with herniation of the bowel loops which were parts of the jejunum through the defect. The bowel was contused and there was a small perforation. Bowel resection with end to end anastomosis was done. The post operative course was uneventful.

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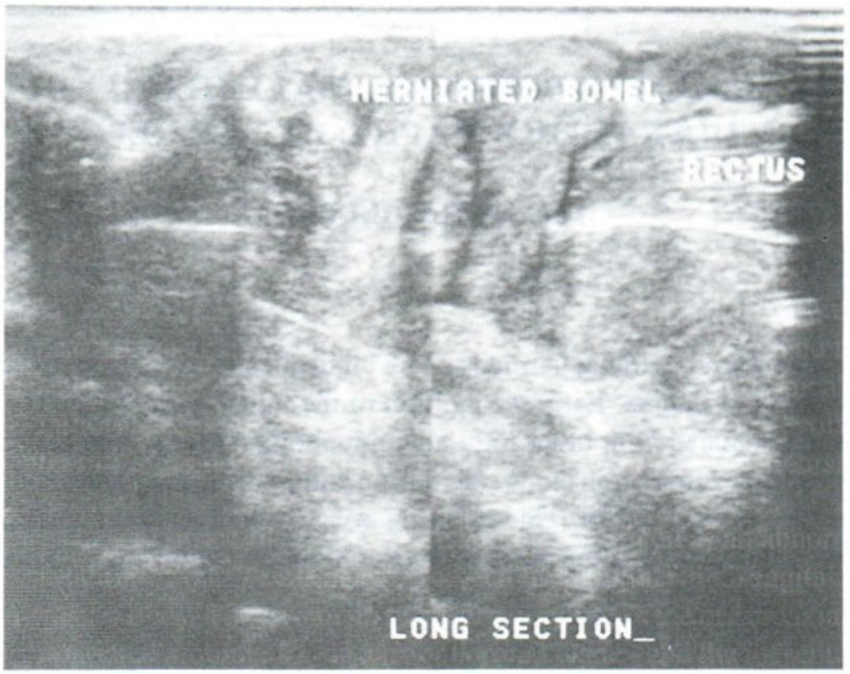

A.

B.

Fig.1 Scan over the mass in both longitudinal(A) and transverse(B) view disclosed discontinuation of the rectus sheet and rectus muscle with herniation of bowel loops through the defect.

DISCUSSION

Blunt trauma of the abdomen is increasing as a consequence of traffic accidents. However, hernia involving anterior abdominal wall following trauma is rare. Guly[1] divided traumatic abdominal wall hernia into two categories, those caused by avulsion of the muscles and tendons from the bone by a shearing force that are distributed across the bony prominence of the pelvis or lower thoracic cage and others occurring through the injuries in muscle or aponeurosis after a direct blow. Metzdorff et al.[2] in 1984 collected only 38 cases of blunt traumatic rupture of the anterior abdominal wall musculature described in literature. Reports in the literature have recorded avulsion of both recti muscles, single rectus muscle, avulsion from the left costal arch, from the ileac crest and pubic bone.[3] Associate injuries were reported in 30 percent of cases.[4] Imaging modalities are needed to evaluate the extent and detail of injury after blunt abdominal trauma. Conventional plain abdominal radiographs, contrast studies or both also are obtained in an effort to diagnose the specific problem. In a certain number of patients, more sophisticated imaging is ultimately required. The development and continued improvement of non invasive cross-sectional imaging modalities have greatly facilitated the diagnosis of many acute abdominal conditions. Ultrasonography (US) is a useful imaging modality to demonstrate free fluid and solid organ injuries. US has several advantages over other diagnostic modalities such as magnetic resonance imaging (MRI) or computed tomography (CT). Real time ultrasonography is a dynamic test that permits the visualization of the structural detail and motion. It can be performed regardless of breathing motion. With other cross-sectional imaging modalities, the patient is asked to lies motionless on an examination table and is then left alone in the scanning room while the examination is performed. The patient is rarely given the opportunity to explain his or her problems. The interactive nature of real time sonography provides advantages for obtaining clinical information important to the diagnosis of the patient's problem during the examination. Recently, high frequency linear array transducers (7.5 and 10 MHz) have become available. These permit much greater insight of the superficial structure and small parts of the body. The technique of directing "ultrasonography palpation" permits the radiologists to establish the area of concern rapidly. In this case, US can demonstrate tear of the rectus muscle and sheet as well as bowel loops that herniated through the injury. The absent of ionizing radiation, short examination time, low cost relative to other modalities, non-invasive character and patient's comfort are the other advantages. It is advisable to integrated US in the line of investigation in case of abdominal trauma.

SUMMARY

A rare case of traumatic abdominal wall hernia caused by blunt abdominal trauma was report. Diagnosis of this condition was made by ultrasonographic examination, which proved to be a convenient and useful imaging modality.

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