



ORIGINAL RESEARCH PAPER

Paediatric Surgery

POST TRAUMATIC ABDOMINAL WALL HERNIA IN A PEDIATRIC PATIENT: A CASE REPORT

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Dr. Saurin Dipak Dani*

Postgraduate Resident, Department of Pediatric Surgery, Lokmanya Tilak Municipal Medical College and General Hospital, Dr. Babasaheb Ambedkar Road, Sion(West), Mumbai-400022. *Corresponding Author

Dr. Sukanya Shashikant Vinchurkar

Postgraduate Resident, Department of Pediatric Surgery, Lokmanya Tilak Municipal Medical College and General Hospital, Dr. Babasaheb Ambedkar Road, Sion(West), Mumbai-400022

Dr. Sarojini Pramod Jadhav

Professor and Head of Department, Department of General Surgery, Government Medical College and Hospital, University Road, Jubilee Park, Chhatrapati Sambhajinagar, Maharashtra-431004

ABSTRACT

Traumatic abdominal wall hernia(TAWH) is a rare injury with a low incidence of 1-5%. Major cause in pediatric patients is bicycle accidents. TAWH following a vehicular rollover injury in a 7-year-old girl. Examination revealed a 6x3cm defect involving abdominal muscles and peritoneum. Primary repair of the hernia with muscle re-approximation showed no recurrence on follow-up. High index of suspicion is required in high-energy mechanisms like road traffic accidents. Early repair of the hernia resulted in successful outcomes.

INTRODUCTION

Definition: Traumatic injury resulting in disruption of the musculature of the abdominal wall with resulting herniation of intraabdominal contents through the defect.^[1]

Incidence is relatively low ranging from 1-5%.^[2] Most cases of Traumatic Abdominal Wall Hernia(TAWH) in the paediatric population result from bicycle accidents following handlebar injury.^[3] Here is a rare case report of an abdominal hernia following blunt trauma in the form of a vehicular accident in the form of rollover injury.

CASE REPORT

A 7-year-old girl presented after alleged history of Road Traffic Accident with blunt trauma to the abdomen in the form of rollover injury by the vehicle to the right lower quadrant of her abdomen. She developed swelling at the site of trauma along with pain (Fig 1). On examination there was a tender, reducible right lower quadrant swelling palpable just superior to the inguinal ligament and lateral to the right inguinal ring with normal overlying skin. X ray of the abdomen done erect was within normal limits. It revealed no air under diaphragm or any pelvic collection. On ultrasound abdomen pelvis there was no injury to the solid organs. We decided to repair the TAWH early. Incision over the swelling demonstrated a defect of 6x3cm approximately with disruption of external and internal oblique, transversus muscle, and peritoneum. There was no associated intraabdominal injury. Layered closure was performed.(Figure 2) Postoperative period was uneventful. The patient was discharged three days after surgery. On follow-up wound healed and there was no recurrence.

DISCUSSION

A. MECHANISM OF INJURY

Traumatic Abdominal Wall Hernia(TAWH) was first described by Selby in 1906. Exact cause is unknown but multiple hypothesis have been made.

The most commonly accepted theory is that of acceleration-deceleration. A 'shear and compressive' force in high velocity injuries as was the mechanism in our case. These forces result in disruption of the muscular wall while the skin being more elastic remains intact although it may be bruised or contused. A blunt direct force to the abdominal wall causing disruption or a sudden increase in intraabdominal pressure force

following fall from height are the other mechanisms of injury as observed by Nishimura et al [4]

B. ASSOCIATED INTRA-ABDOMINAL INJURY

Intraabdominal injury is seen more commonly with upper abdominal trauma, whereas TAWH predominantly affects the lower abdomen. In this case there was no injury to any intra-abdominal organ including mesentery.

C. DIAGNOSIS

TAWH is mostly a clinical diagnosis. Awareness of the entity and a speculation encourage examination to elicit features of a hernia, avoiding a misdiagnosis of abdominal wall hematoma [4].

TAWH is to be suspected in patients who present with blunt abdominal trauma and must be considered even if there are no external signs of injury. External signs of trauma can be unreliable, ranging from ecchymosis to palpable swelling, and without imaging it can be difficult to differentiate TAWH from a simple hematoma.^[1]

Diagnosis of TAWH would be easily missed if not actively looked for because of atypical mode of injury without any features of peritonitis/hemodynamic instability, misinterpreting it as abdominal wall hematoma and absence of any radiological proof as in this case.

Most of the cases of TAWH in the paediatric population are secondary to handlebar injuries. Gera et al reported 70 cases of pediatric bicycle handlebar injury to the abdomen; 80% (17/21) of those with handlebar imprint had associated serious abdominal injury including 3 cases of TAWH. [5]

D. MANAGEMENT

We decided to do open primary repair of TAWH immediately on admission. Early primary repair is associated with good outcome, and we believe this approach limits ongoing morbidity related to pain, limitation of function, and hospital stay. Matsuo et al advise conservative approach to managing a case of TAWH and have been successful in doing so in their study. [6]

Some surgeons also advise a laparoscopic approach for the same. A laparoscopic approach has the advantage of direct assessment for associated injury if any is present and

advantages of minimal invasive technique.

CONCLUSION

Isolated TAWHs are rare injuries especially in the pediatric age group that generally require high index of suspicion, especially when due to high-energy mechanisms of injury such as road traffic accidents. In this case, primary repair of the hernia with re-approximation of muscles has shown good results.

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