VIMS HEALTH SCIENCE JOURNAL

September – 2014 Volume -1, Issue – 3

ISSN NO – 2348 -523X www.vimshsj.edu.in

CASE REPORT -1

Traumatic abdominal wall hernia - delayed repair.

*Dr. S.B. Mutha, **Dr. S.R. Kankaria,

*Asso Professor, **Resident

Address for Correspondence :

Dept of General surgery, P.D.V.V.P.F's Medical College & Hospital, Ahmednagar.

ABSTRACT -

Traumatic abdominal wall hernia (TAWH) is a rare entity, common in children from bicycle handle bar injury. We present a case of large TAWH following Road Traffic Accident (RTA) in 58 yrs obese male patient. It was managed by mesh repair. Emergency surgical management is preferred due to high incidence of intra abdominal injuries. But if the patient presents after some days delayed repair should be undertaken. TAWH is rare but should be considered in RTA or blunt trauma to abdomen if patient presents with abdominal wall swelling.

Key words : Traumatic abdominal wall hernia (TAWH), Emergency surgery, Delayed repair, Mesh repair, Post operative bulge.

Introduction : TAWH is caused by blunt trauma to abdomen. It was first described by Selby[1] in 1906 , but fewer than 100 cases have been reported in century . It is defined as 'Herniation through disrupted abdominal wall musculature and fascia associated with adequate blunt trauma without skin penetration and no evidence of prior hernia defect at the site of injury'[2]. Most are diagnosed on presentation with contrast enhanced CT of abdomen. In view of high incidence of intra peritoneal injuries most authors advise immediate laparotomy. In chronic cases or missed cases delayed repair is done .We present such a case having TAWH for last 3 years and which was managed with mesh repair.

Case presentation : A 58 year old obese patient presented with 15 x 15 cm size swelling (Fig-1,2) over left flank with duration of 3 years. History of blunt trauma on left flank by motorcycle. There was immediate appearance of a swelling but no investigations, operation or admission was done according to patient. At present patient complaints progressive increase in size of swelling and dragging pain.

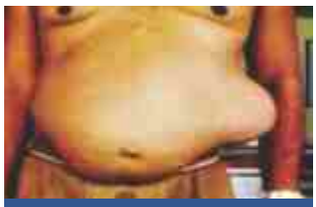


Figure-1

Figure-2

On examination--

This swelling is completely reducible and non tender. Skin is free .There is a positive cough impulse. On reduction a defect of 7x7 cm felt. Rest of the abdomen is normal. A clinical diagnosis of uncomplicated TAWH was made. Patient is normotensive but diabetic.

Laboratory investigation-

- Hemoglobin 14.2gm%. Remaining lab profile normal.
- X-ray Chest and Skeletal X-rays normal .
- USG abdomen – Hernia with 6.8cm defect. No organomegaly.
- CECT -Reducible hernia with 7x7 cm defect. It shows herniation of splenic flexure and upper part of descending colon .(Fig-3,4)

Figure - 3

(CECT showing defect)

Figure - 4

(CECT showing contents- splenic flexure & descending colon)

Operative Procedure : After control of Diabetes, we decided to operate. Transverse incision taken over the swelling effect bound medially by rectus abdominus, upper border by costal margin, lower extension for about 7cms and laterally through the remaining parts of the external and internal oblique muscles. Sac was opened and the contents were found to be very

adherent. Adhesions were slowly released and the bowel returned to the abdominal cavity. Peritoneum was sutured. Because of size of the defect and bony costal margin, primary closure of the defect was not possible. So 15x15 cm meshplasty was done. Upper part sutured to fascia over the ribs. Drain kept , incision sutured . Post-operative period was uneventful. Diabetes was kept under control. Drain removed on the 10th day. Sutures removed on 15th day. Abdominal belt was given and patient discharged on 20th day.

Figure 5- Meshplasty

Discussion : Although blunt trauma is common, TAWH remains rare. It involves application of blunt force to the abdomen over an area large enough to prevent skin penetration. This force causes pressure induced disruption of abdominal wall muscles and fascia and results in hernia[3]. As skin is more elastic than other layers it remains intact. TAWH usually occurs either lateral to rectus, in lower abdomen or inguinal region.

Wood et al. classified TAWH in 3 major types: Type 1 are sustained from high energy injuries and are commonly associated with intra abdominal injuries. Type 2 occurs due to low energy injuries example –handle bar injuries. Type 3 result from deceleration injuries and are associated with intra abdominal herniation[4].

Figure-6

Figure-7

Although TAWH usually present as a tender palpable lump with ecchymosis of overlying skin, CECT scan is the most accurate diagnostic tool[5]. It can define the anatomy of disrupted abdominal wall, differentiates hernia from hematoma and identifies intra abdominal injuries.

Surgery is primary modality of treatment which can be emergency or delayed. Probability of intra abdominal injuries plays the most important role in deciding the timing of operative intervention. Immediate exploration with hernia repair is generally accepted as favourable choice as it allows to rule out any intra abdominal injury and prevents strangulation of herniated bowel. But debridement of devitalised tissue may be required and placement of mesh is contra-indicated due to fear of infectious complication. Most authors have reported immediate exploration with layer - by- layer closure of defect with or without mesh as the preferred procedures.[6,7]

Patient with large defects(low chances of strangulation) and no intra abdominal injuries, as in this case can be managed by delayed elective repair [8,9]. Surrounding tissue will be healthy and mesh can be used. However , as in this case , the defect may enlarge with time and the muscles undergo disuse atrophy, thus primary approximation may be difficult [10]. Also large hernias if repaired under tension may cause abdominal compartment syndrome.

In emergency settings, one may prefer midline incisions as exploration of intra abdominal injuries is easier and the defect can be repaired from inside[8]. However in elective cases as in the present case, an incision overlying the defect is preferred. Most authors advocate use of non absorbable mono filament for repair of the defect. Mesh is usually preferred if defect is large or musculature is weak[11] but layer by layer closure without tension also provides acceptable results[12].

Conclusion : TAWH, although rare should be suspected in all cases high velocity injuries with abdominal wall swellings and CECT should be used for accurate diagnosis. Emergency midline exploration with examination of abdominal contents and repair of hernia with non absorbable sutures with or without mesh is favored. Delayed repair may be considered in chronic cases but the hernia may enlarge and defect may widen over time, making repair technically demanding and exhaustive. Thus, TAWH are best managed on a case by case basis.

References :

1) Selby CD. Direct abdominal hernia of traumatic origin. JAMA 1906;47:1485-6.

2) Damschen DD. Landercasper J, Cobill TH, Stolee RT. Acute traumatic abdominal hernia: case reports. Journal of trauma 1994;36:273-6

3) Ganchi PA. Origill DP. Auto penetrating hernia: a novel form of traumatic abdominal wall hernia: case report and review of literature. Journal of trauma 1996;41:1064-6.

4) Wood RJ. Ney AL, Bubrick MP. Traumatic abdominal hernia: a case report and review of literature. American Surgeon 1988;54:648-51.

5) Killen KL, Girard S, DeMeo JH, Shanmuganathan K. Mirvis SE. Using CT to diagnose traumatic lumbar hernia. American Jounal of Roentgenology 2000;174:1413-5.

6) Lane CT. Cohen AJ, Cinat ME. Management of traumatic abdominal wall hernia. American Surgeon 2003;69:73-6.

7) Tan EY, Kaushal S Sion WY, Chia KH. Traumatic abdominal wall herniation. Singapore Medical Journal 2007;48(10):e270-2.

8) Kubalak G. Handlebar hernia: case report and review of the literature. Journal of trauma 1994;36:438-9.

9) Sahdev P Garramore Jr RR, Desani B, Ferris V, Welch JP.Traumatic abdominal hermia:report of three cases and review of literature. American Journal of Emergency Medicine 1992;10:242-3.

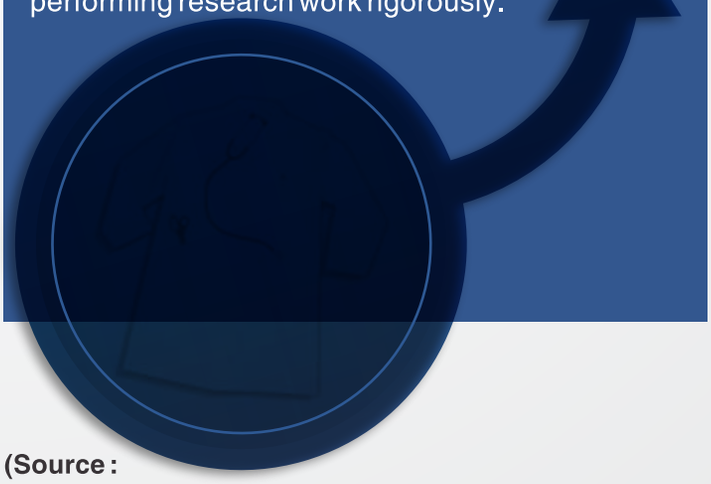
10) Martinez BD, Stubbe N, Rakower SR. Delayed appearance of traumatic ventral hernia: a case report. Journal of trauma 1976;16:242-3.

11) Drago SP Nuzzo M, Grassi GB. Traumatic ventral hernia: report of a case, with special reference to surgical treatment. Surgery today 1999;29:1111-4.

12) Mahajana A, Ofer A,Krausz MM.Traumatic abdominal hernia associated with large bowel strangulation: case report and review of literature. Hernia 2004;8:80-2.

Controversies about white coat:

White coats have not been without controversy. On June 2009, the American Medical Association (AMA) voted on a resolution recommending that the iconic white garment should be banned by hospitals, citing the probable spread of disease through frequently unsterilized coats splattered with the invisible aftermath of repeated exposure to sick patients. Despite studies (Microbial flora on doctors' white coats) supporting the notion of unsanitary coats, the AMA ultimately pointed the issue by referring it to a panel for further discussion. Many doctors have continued to ignore the potential dangers of these knee-length emblems of medical professionals, possibly out of an urge to project the same impression of scientific competence so strongly associated in popular culture with white-clad laboratory technicians performing research work rigorously.



(Source :

^ Subcommittee: F23.40. "New Specification for Healthcare Worker Protective Uniforms". ASTM International. ASTM International. Retrieved 5 December 2014.)