Unusual delayed presentation of post-traumatic intrapericardial hernia associated with intestinal occlusion

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Un usual delayed presentation of post-traumatic intrapericardial hernia associated with intestinal occlusion.

AIM: *We report a case of a 64-year-old man, admitted to our department following the onset a few months earlier of canalization disorders and a sensation of retrosternal tension.*
MATERIAL OF STUDY: *Patient's history revealed blunt thoraco-abdominal trauma with multiple costal fractures 15 years earlier as a result of a road accident and a cholecystectomy at the age of 57. A barium meal revealed an intrapericardial displacement of some intestinal loops; as the patient suffered acute intestinal occlusion with severe abdominal pain associated with nausea and vomiting, we performed an emergency median xipho-umbilical laparotomy, making it possible to identify both the site of the retrosternal diaphragmatic laceration with intrapericardial colonic herniation and the true cause of the occlusion: an adhesion, caused by the previous cholecistectomy, which was strangulating a jejunal loop. After detaching the adhesion between the colon and the pericardium, the viscera were replaced in the abdominal cavity and the diaphragmatic opening was closed.*
RESULTS: *The post-operative period was uneventful; a barium enema demonstrated the abdominal dislocation of the viscera. No recurrence was detected during the 48 months of follow-up.*
CONCLUSIONS: *A rare pathological event, such as an intrapericardial diaphragmatic hernia, was combined with intestinal occlusion, initially attributed to a further complication of the hernia itself, but in actual fact independent of the hernia and a consequence of a previous cholecystectomy.*

KEY WORDS: Bowel occlusion, Chest, Chest trauma, Intrapericardial hernia, Surgery.

Introduction

Traumatic diaphragmatic lesions are relatively rare and occur in 3-7% of all thoraco-abdominal traumas [1]. These injuries may be recognized when they occur but are often discovered months and years later during work-up for related symptoms [2]. Diaphragmatic hernias occurring as a result of blunt trauma are most common on the left side (more than 80% of cases) [3]. Herniation of abdominal viscera into the pericardial space is very rare (1-12% of cases) [4]. The diagnosis is often difficult: clinical presentation is acute when visceral perforation or occlusion occurs but it may frequently be asymptomatic or an incidental finding on a chest X-ray [2,5]. The delayed phase of a diaphragmatic hernia may occur months or many years after the initial injury; the progressive herniation of the abdominal viscera leads to respiratory compromise and abdominal complaints [3,6]. We report an uncommon herniation of the colon through a subxiphoid pericardial window into the pericardial sac.

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Case report

A 64-year-old man was admitted to our department following the onset a few months earlier of canalization disorders and a sensation of retrosternal tension. Patient's history revealed blunt thoraco-abdominal trauma with multiple costal fractures 15 years earlier as a result of a road accident, and a cholecystectomy at the age of 57. During this operation, he was diagnosed with retrochondrosternal diaphragmatic hernia which was not, however, treated.
Cardiologic examination excluded the presence of heart disease, which the patient had not in any case reported; on the other hand, a barium meal and the subsequent Thoraco-adìbdmonial CT-Scan (Figgs. 1-2) revealed an intrapericardial displacement of some intestinal loops, without, however, precisely identifying the site of the herniation.
While awaiting surgery, the patient suffered acute intestinal occlusion with severe abdominal pain associated with nausea and vomiting, requiring emergency surgery for possible strangulation of the herniated viscera.
An emergency median xipho-umbilical laparotomy was therefore performed, making it possible to identify both the site of the retrosternal diaphragmatic laceration with intrapericardial colonic herniation and the true cause of the occlusion: an adhesion, caused by the previous surgery, which was strangulating a jejunal loop.
After carefully detaching the adhesion between the colon and the pericardium, the viscera were easily replaced in the abdominal cavity and the diaphragmatic opening was closed with non-absorbable individual sutures. The postoperative period was uneventful; a barium enema demonstrated the abdominal dislocation of the viscera, so the patient was discharged 9 days after surgery. No recurrence was detected during the 48 months of follow-up.

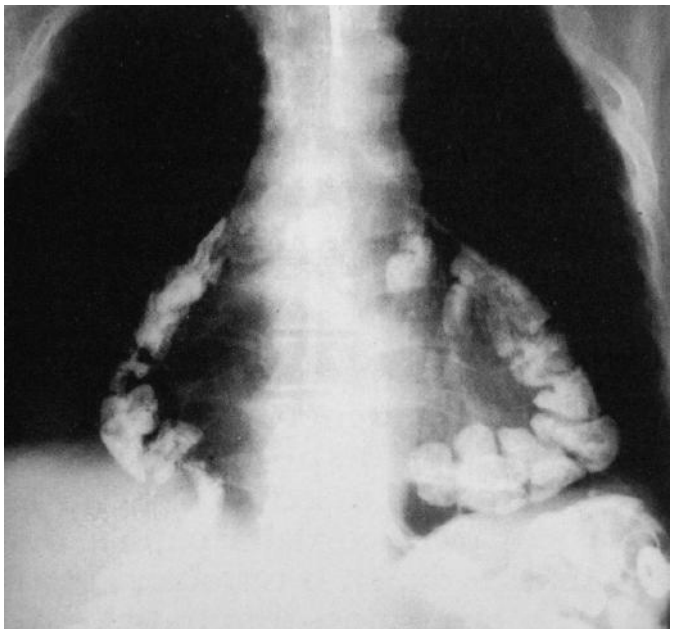

Fig. 1: Pre-operative barium meal showing an intrapericardial displacement of some intestinal loops.

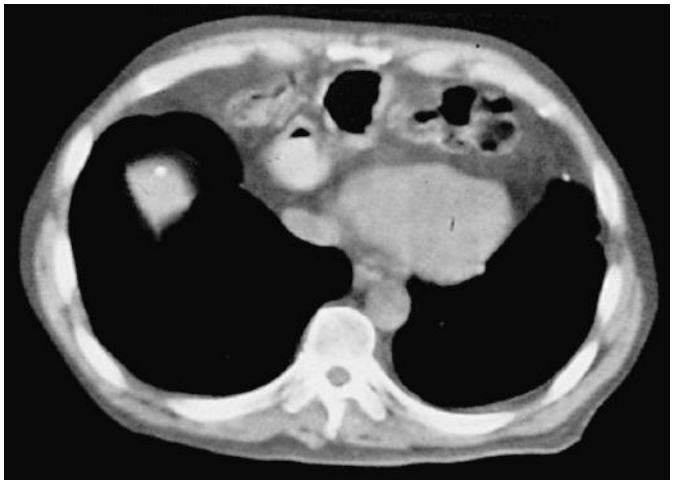

Fig. 2: Computed Tomography confirming the presence of some intestinal loops in the pericardial space.

Discussion

Traumatic rupture of the diaphragm is a rare but serious consequence of blunt or penetrating thoraco-abdominal trauma [5]. In blunt abdominal trauma the sudden rise in intra-abdominal pressure can cause the diaphragm to rupture in several places: the right side, the left side or into the pericardium. Herniation of abdominal contents causing acute symptoms has been described occurring as long as 15 years after a traumatic event and the clinical presentation varies, and can include gastrointestinal, cardiovascular and respiratory complaints [4]. It is not always possible to accurately diagnose the diaphragmatic herniation prior to surgery; delayed identification of this type of injury is relatively common, even when there is significant herniation [7]. The reason for this is that a patient may be only mildly symptomatic during the latent phase; the problem is only identified when an acute complication, such as visceral strangulation and incarceration or cardiac tamponade, develops [8].
The key to diagnosis is a high index of suspicion coupled with an appropriate investigation like Chest X-ray, CT-Scan and contrast gastrointestinal study [9].
A traumatic diaphragmatic hernia has no peritoneal sac; adhesion among the herniating viscera and pericardial and pleural structures develop rapidly, necessitating the utmost care during surgical repair [3]. There has been controversy concerning the best surgical approach to reduce and repair diaphragmatic hernias. In the case of intrapericardial diaphragmatic hernias, a transabdominal approach is the best [10].
The particularity of this case is due to the fact that a rare pathological event, such as an intrapericardial diaphragmatic hernia, was combined with occlusion, ini-

tially attributed to an additional complication of the hernia itself, but in actual fact independent of the hernia and a consequence of a previous cholecystectomy.

Conclusions

We report an unusual post-traumatic intrapericardial diaphragmatic hernia presenting with intestinal occlusion. In our opinion, the particularity of this case is due to the fact that a rare pathological event, such as an intrapericardial diaphragmatic hernia, was initially attributed to an additional complication of the hernia itself, but in fact independent of the hernia and a consequence of a previous cholecystectomy. Both barium meal than Thoraco-adìbdmonial CT-Scan didn't show the true cause: only laparotomic exploration found the key of such a strange diagnostic dylemma: an adhesion, caused by the previous surgery, which was strangulating a jejunal loop.

Riassunto

Un uomo di 64 anni giungeva alla nostra attenzione riferendo alterazioni dell'alvo da circa due mesi e dolore retrosternale. Un'accurata anamnesi rivelava all'età di 49 anni un pregresso trauma chiuso del torace con fratture costali multiple bilaterali ed una colecistectomia in elezione all'età di 57 anni, durante la quale veniva segnalata una modesta ernia diaframmatica che non fu, tuttavia, trattata.
Per tale sintomatologia si eseguivano vari accertamenti diagnostici tra i quali un pasto baritato che dimostrava il dislocamento intrapericardico di alcune anse intestinali, dato peraltro confermato dalla TAC Toraco-Addominale.
In attesa di intervento chirurgico il paziente manifestava una sindrome addominale acuta da occlusione intestinale che richiedeva una laparotomia d'urgenza nel sospetto di strangolamento di una delle anse erniate.
L'apertura della cavità addominale permetteva di identificare il sito di lacerazione diaframmatica retro sternale, sede dell'ernia, tuttavia la reale causa dell'occlusione intestinale era inattesa: trattavasi di un'aderenza, esito della pregressa colecistecomia, che strangolava un'ansa digiunale.
Dopo accurata liberazione delle aderenze intestinali tra colon e pericardio, i visceri erano agevolmente riposizionati nella cavità addominale ed il difetto diaframmatico riparato con punti staccati non riassorbibili.
Il decorso post-operatorio è stato privo di complicanze ed il paziente veniva dimesso in IX giornata post-operatoria ; il follow-up a 48 mesi non ha evidenziato segni di recidiva.
L'erniazione intrapericardica di visceri addominali come risultato di un pregresso trauma toracico è un'evenienza molto rara. La diagnosi è complessa a causa di un corteo sintomatologico misinterpretabile ed insidioso: la presentazione clinica è acuta e sintomatica quando è sostenuta da perforazione o occlusione intestinale, tuttavia il più delle volte la diagnosi avviene accidentalmente, essendo l'ernia asintomatica.
Nel nostro caso un'ernia intrapericardica diaframmatica si associa ad un quadro di occlusione intestinale, erroneamente attribuito in prima istanza ad una complicanza dell'ernia stessa, ma disconosciuto dall'esplorazione chirurgica che rivela trattarsi di una conseguenza della pregressa colecistectomia.

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