Original Article

Outcome of undiagnosed traumatic diaphragmatic injuries: A review of our management


Abstract
The authors relate on the outcomes of traumatic diaphragmatic injuries unknown early. The files of three patients have been reviewed retrospectively. All of them presented early undiagnosed injuries. The first patient had a left diaphragmatic injury consecutive to a stab wound to the left hypochondrium. The diagnosis was made 18 days later. He died 2 days after operation because of septicaemia. The second patient presented a colonic strangulation through a left diaphragmatic rupture consecutive to a stab wound three years before. A resection and anastomosis to the colon was performed. The patient left the hospital with a definitive pachypleuritis. The third patient was admitted for blunt trauma to the chest with dyspnoea. The chest X-ray showed the diaphragmatic rupture. The peri-operative exploration showed an old rupture with fibrosis banks. The lesion had been respected. The outcomes of early missed traumatic diaphragmatic rupture are various. Their treatment is sometimes difficult and dangerous.

Introduction:
Trauma involving the diaphragms is rare. The diaphragmatic injuries are qualified to be at the head of missed lesions occurring in traumas. The diagnosis of these injuries can be reached following thorough clinical examination, plain X-ray and/or the CT scan. No matter how meticulous the physician is some diaphragmatic injuries may be missed and present later with complications. Some patients have presented with gut strangulation in the chest with dyspnoea long after an initial missed injury at first assessment. This study reviews our experience in the management of the missed diaphragmatic hernia.

Case 1
In February 1997, a 19 year old teenager was admitted at the emergency unit of our hospital with a left hypochondrial penetrating stab wound. He had no known co morbidity and his hemodynamic was stable. He was dyspnoeic. On chest examination, there was a left sided chest wall sucking wound. A chest X-ray showed a moderate hemo-pneumothorax. A chest tube was urgently inserted draining some blood but there was no improvement on the respiratory difficulty. On the 7th day post insertion of chest tube he began to run a fever.

Fig 1 liver In the chest herniated through a diaphragmatic hernia
There was evidence of leucocytosis on complete blood count. On day 18th an egress of gastric contents was seen draining through the chest tube. At exploration there was a septic fluid collection in both subphrenic recesses and another large collection in the left pleural cavity. The fundus of the stomach was herniated into the left hemithorax through a large left diaphragmatic defect of about 10 cm in diameter. There was a tear on the body of the stomach. The defects were repaired and the abscesses drained. The patient continued to run a relentless fever and went into septic shock and died two days post op.

Case 2
A 24 year old student presented with acute intestinal obstruction. Plain abdominal X-rays done confirmed obstruction. He was resuscitated and operated
Diaphragmatic injury is rare and was reported to be about 1,7% and 3% of all the patients who underwent an operation for thoraco-abdominal trauma respectively in the studies by Sacco and Azorin. According to Hoang AD and colleagues, 50% and 3% of diaphragmatic injuries are undiagnosed and treated urgently if not the outcomes are various and grave. Only an early intervention will avoid the dreadful complications encountered including death.

Discussion

Diaphragmatic injury is rare and was reported to be about 1.7% and 3% of all the patients who underwent an operation for thoraco-abdominal trauma respectively in the studies by Sacco and Azorin. Konan KJ and al. reported 4 cases during an eight year period. Most patients present long after the injury with a previously undiagnosed injury. According to Hoang AD and colleagues, 50% and 33% of diaphragmatic rupture are undiagnosed.

Case 3

A 28 years old man was admitted to our emergency unit following blunt chest trauma following a road traffic accident. There was also a 21 year history of blunt trauma to the chest at age 7 years. The nature of treatment given was not available. He was restless with a Glasgow scale score of 11. He was in shock with a blood pressure of 80/50mmHg and a pulse of 124/mn. The respiratory rate was 46/mn. A chest X-ray showed a defect (rupture) at the dome of the right diaphragmatic with intestinal herniation into the right chest (picture 1). A CT scan showed the liver herniation with it’s adhesion to the parietal pleura. At surgical exploration, there was an old diaphragmatic defect on the right dome of the diaphragm with thick fibrosis of the edges. Small bowel, colon and the liver had herniated into the chest. The liver was morbidly adhered to the pleura and could not be detached. No further attempt was made at freeing the loops of gut as this was assessed to be very dangerous. The patient did well post op and was discharged and surprisingly has remained healthy on follow up.

References

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