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Oesophageal-Pleural Fistula: A Rare Complication of Blunt Thoracic Injury

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ABSTRACT

Traumatic perforation of the oesophagus secondary to blunt trauma is a very rare clinical entity and is still associated with considerable morbidity and mortality. This is due to the fact that diagnosis in most cases is delayed and symptoms and signs are often masked by or attributed to more common blunt thoracic injuries. Early clinical suspicion and imaging is important for case management to achieve a good outcome.

1. Introduction

Oesophageal perforation is a rare and potentially life-threatening condition Penetrating or iatrogenic trauma are the most common causes of rupture of the esophagus. Rupture of the esophagus due to blunt trauma is very rare. The high morbidity and mortality of this clinical entity is attributed to several factors like difficult access of the esophagus, the lack of a strong serosal layer, the meagre blood supply of the organ and the proximity of vital structures. Surgical treatment remains an important option for many patients, but a nonoperative approach, with or without use of an endoscopic stent or placement of internal or external drains, should be considered when the clinical situation allows for a less invasive approach. The diversity of clinical symptoms and signs combined with a lack of individual experience regarding this particular condition may impede rapid identification of this potentially hazardous situation., Therefore, attention should always be paid to early diagnosis and immediate treatment to save lives and to decrease morbidity and long-term sequelae. Here we present clinical course of a patient with traumatic oesophageal perforation leading to oesophago –pleural fistula with review of literature.

2. Case report

A forty five year old male patient was admitted to our surgical unit as a case of blunt trauma chest as a consequence of road traffic accident ten days back. There was history of pain on the left side of chest wall associated with shortness of breath. At the time of admission, patient was clinically stable with associated tachypnoea and tachycardia. Respiratory rate was twenty per minute but there was no cyanosis. There were no breath sounds on the left side of chest. Chest X-ray revealed the presence of pleural effusion on the left side. Intercostal chest tube drain was put on the left side and one litre of infected fluid was drained. The patient kept on conservative management with intravenous fluids, analgesics, antibiotics for 3 days and was allowed liquid diet on 4th day. The presence of oral contents was noted through the drain which led to strong suspicion of esophagopleural fistula. Subsequently, patient underwent CECT Thorax which confirmed the diagnosis of free perforation of distal third esophagus into the pleural cavity on the left side. The patient was underwent esophageal stenting and was managed conservatively with broad spectrum antibiotics, intravenous fluids and parenteral nutrtion with a close watch on vitals. Subsequently the drain output kept on decreasing and the drain was removed on tenth day following stenting. The patient was discharged in stable clinical condition after two weeks and is on regular follow up.

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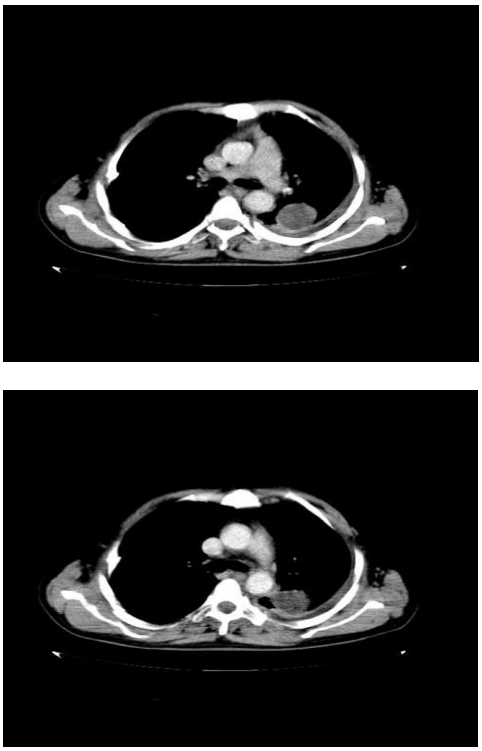

Figure 1: CECT THORAX images showing esophageal – pleural fistula involving distal 1/3rd of esophagus

3. Discussion

Esophageal perforation secondary to blunt trauma is very rare being reported in less than 1% of all patients of blunt trauma and perforation of intrathoracicesophagus secondary to trauma is even rarer with a reported incidence of less than 0.2% **[1]**. It was first reported by Vinson in 1936 and it represents 5-15% of all esophageal perforations. It is characterized by high morbidity and mortality especially in the neglected cases. Cervical esophagus is most prone to penetrating trauma and usually found in association with tracheal, vascular and spinal cord injuries. On the other hand thoracic esophagus is usually less liable to trauma because of its small size and location in the central part of thorax. Most of the reported cases are secondary to high-speed motor vehicle accidents. Possible mechanism includes sudden increase in the intraluminal pressure of esophagus because of expulsion of gas from stomach against the closed glottis or due to sudden compression between vertebrae and sternum or due to flexion-hyperextension injury secondary to fracture dislocation of cervical vertebra**[2]**. As a result the distal third of esophagus which is considered to be the weakest part of the esophagus develops a tear. Patients with this clinical entity may present with a variety of symptoms like chest pain, dyspnea, dysphagia, odynophagia, vomiting, pyrexia, which may be followed by worsening surgical emphysema and sepsis**[3]**. Since the signs and symptoms of esophageal perforation are usually non-specific, hence it becomes very difficult to make a correct diagnosis in patients presenting with multisystem involvement. When there is a high index of suspicion of esophageal injury, upper esophageal endoscopy and contrast swallow examinations are considered to be diagnostic modalities of choice**[4]**. The false-negative rates may vary from 30-40%, so a negative study does not completely exclude an esophageal injury. CECT chest is also helpful in evaluating the presence of any focal collection, hematoma and occasionally a tear, in addition to evaluation of other associated intrathoracic injuries. Esophageal perforation is usually identified as an area of esophageal wall thickening with mediastinal collection, pleural effusion and abscesses. The clinical course of these patients is influenced by a variety of factors like timing of diagnosis as well as complications and associated injuries. Surgical intervention is decided according to site and size of the defect, degree of inflammation and contamination and overall condition of patient. Conservative treatment is usually preferred for patients presenting late in the clinical course. Surgical intervention is more frequently done in the intrathoracic rupture. Most the cervical esophageal perforations can be treated conservatively. The various options of surgical treatment include surgical repair with tissue buttressing, resection, exclusion and diversion of esophagus by cervical esophagostomy, decompresive gastrostomy with or without intercostal drainage, medistinal debridement, and feeding jejunostomy. Irrespective of mode of management**[5,6]**. Patients should be managed in high dependency unit with strict intake output and vital monitoring, fluid resuscitation, broadspecyurm antibiotics and adequate jejunall or parentral nutrition**[7]**.

4. Conclusion

Early identification of an intrathoracic oesophageal perforation requires deliberate consideration and is essential to ensure a favorable outcome. Treatment should be individualized taking into account the nature of the oesophageal defect, time elapsed from injury and the patient's general condition.

Conflict of interest

All the authors declare that there is no conflict of interest

Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images

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