

A Case Report: Thoracoscopic Diagnosis of Right-Sided Traumatic Diaphragmatic Rupture

Dr. Ahmet SARAÇ , Dr. Ferit BERNAY, Dr. Salih SOMUNCU,

Dr. Rıza RIZALAR, Dr. Ender ARITÜRK, Dr. Naci GÜRSES

Ondokuz Mayıs University, Faculty of Medicine Department of Pediatric Surgery

✓ The diagnosis of traumatic diaphragmatic rupture is relatively easy on the left side, but is frequently difficult on the right, partly because the herniated organ is usually the liver. A right-sided diaphragmatic rupture due to gun shot injury in a 13 year-old boy, diagnosed by thoracoscopy, is reported.

Key words: Diaphragm-injuries

✓ Torakoabdominal travmalı hastalarda diafragma rüptürü tanısı sol tarafta daha kolaydır. Sağ diaframatik rüptür teşhisi, diafragma altındaki karaciğerin diğer organların toraks içine fırlaşmasını engellenmesi nedeniyle, zordur. Ateşli silah yaralanması ile gelen 13 yaşındaki bir erkek hastada sağ diafragma rüptürü, şüphe üzerine yapılan torakoskopi ile konulmuştur.

Anahtar Kelimeler: Diafragma,-zedelenme.

Gunshot injury is uncommon in childhood. In thoracoabdominal traumas, preoperative diagnosis of diaphragmatic injury is difficult. If there are any other organ injuries, diagnosis of the diaphragm rupture be delayed. The right-sided diaphragmatic rupture were determined by laparoscopy and thoracoscopy in a thoracoabdominal BB gun trauma patient.

CASE REPORT

A 13 years old male patients was admitted to our clinic because of a gunshot wound on his right thoracal wall. On physical examination, he was conscious, minimal dispneic ventilation and tachycardia were present. There were fractures in the right 7 th-8 th ribs. The anterior margin of the right lobe of the liver was seen through a BB's hole. There was pain and tenderness on the right upper quadrant of the abdomen. In plain X-ray of the thorax, there were haemopneumothorax and bullet pieces in the right hemithorax. A thoracal tube was inserted. In

the abdominal ultrasound (US), there was a hematoma (4x5 cm.) on the right lobe of the liver and free fluid in Morrison's pouch. The patient became haemodynamically stable and laparoscopy was performed. There were minimal lacerations and biliary leakage due to gun shot injury in the right lobe of the liver. Because of the hematoma, we could not observe clearly the diaphragm and the upper side of the liver. So, laparoscopy was terminated and thoracoscopy was performed via a thoracal tube hole. We observed minimal lacerations of middle and lower lobes of the right lung and bullet pieces of BB gun and foreign bodies in pleural space. In the right hemidiaphragm, there was 4x4 cm. rupture in the central tendon and a 6x7 cm. defect in the lateral part. After these observations, we performed anterolateral thoracotomy through the 6 th intercostal space. Both defects in the right hemidiaphragm were sutured by two layers of 00 Prolene. During the post-operative 15 th day the patients was discharged.

DISCUSSION

Laparotomy and thoracotomy were commonly used for thoracoabdominal traumas. Recently, laparoscopy and thoracoscopy became preferable for these cases. While at the beginning the usage of laparoscope was limited only to blunt injuries, it is now being performed for the penetrating abdominal traumas (stab wound and tangential gun shot injuries)⁽¹⁾.

The gun shot traumas in children effect mostly extremities (41%), head (18%), thorax (10,8%), abdomen (5%), back/flank (9,4%) and multiple organs (12,2%)⁽²⁾. In the patient with multiple traumas it may not be always possible to detect the injury to the diaphragm. Plain chest X-ray has a less value in the diagnosis⁽³⁾. Although there are important new diagnostic modalities such as US⁽⁴⁾, pleurography⁽⁵⁾, CT⁽⁶⁾, MRI and injection of radionuclide tracers into the abdomen in addition to conventional chest x-ray⁽⁷⁾, the diagnosis of the diaphragmatic rupture may be delayed. This delayed in the diagnosis is most often seen on the right diaphragm because of the close relation of the liver. When diaphragmatic rupture is suspected in patients with thoracoabdominal traumas, thoracoscopy could lead to a confident and a fast diagnosis. It could also reveal the evaluation of other intrathoracic structures beside the diaphragm. In our case the diaphragmatic injury which was missed by laparoscopy, was easily and rapidly detected by thoracoscopy.

This case showed us that, when diaphragmatic injury is suspected, immediate

diagnosis can easily and rapidly be confirmed by thoracoscopy.

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