

A Rare Complication of Endoscopic Retrograde Cholangiopancreatography; Bilateral Pneumothorax

Endoskopik Retrograd Kolanjiopankreatografinin Nadir Komplikasyonu; Bilateral Pnömotoraks

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ABSTRACT

Endoscopic retrograde cholangiopancreatography (ERCP) is widely used in the diagnosis and treatment of pancreatobiliary diseases. The most serious complication that develops post ERCP is perforation of gastrointestinal tract and it can be mortal. ERCP-related pneumothorax is a rare complication requiring urgent intervention. We present a case of 50- year-old female patient who developed bilateral pneumothorax after ERCP.

Keywords: Bilateral Pneumothorax, ERCP, duodenum perforation

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ÖZET

Endoskopik retrograd kolanjiopankreatografi (ERCP), pankreatobiliyer hastalıkların tanı ve tedavisinde yaygın olarak kullanılmaktadır. ERCP sonrası gelişen en ciddi komplikasyon gastrointestinal sistem perforasyonudur ve ölümlle sonlanabilir. ERCP ilişkili pnömotoraks, acil müdahale gerektiren nadir bir komplikasyondur. Biz de ERCP sonrası bilateral pnömotoraks gelişen 50 yaşında bir kadın hastayı sunmayı amaçladık.

Anahtar Sözcükler: Bilateral Pnömotoraks, ERCP, duodenum perforasyonu

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INTRODUCTION

Pneumothorax is an accumulation of air into the pleural space that develops with different mechanisms and requires urgent intervention. Although iatrogenic pneumothorax may develop as a complication of thoracic invasive procedures, it can also be seen in some nonthoracic invasive procedures [1]. Pneumothorax occurred by the duodenum perforation after ERCP is a rare condition. In the literature, fewer than 50 cases have been reported related this topic and only 22 of them had bilateral pneumothorax [2]. Here we have presented a case of bilateral pneumothorax occurring as a complication of ERCP.

CASE REPORT

The present study reported an uncommon case of a 50-year-old female patient who admitted to the general surgery service for acute cholecystitis, had undergone a laparoscopic cholecystectomy operation.

Postoperative 3 weeks later, she readmitted to the emergency services with widespread pain and abdominal distension complaints. In the abdominal USG, intra- free abdominal fluid was seen, and the collection was observed in the cholecystectomy area. ERCP was performed on the exclusion of the main biliary tract injury. During the procedure, she underwent emergency surgery upon the development of the duodenum perforation. By laparotomy incision the injury in the duodenum was closed primarily and a tube was placed after the injury was detected in the choledochal canal. Left sided pneumothorax was detected in the chest radiograph of the patient who was taken to intensive care unit due to follow-up with hypotension, low saturation, and subcutaneous emphysema (figure 1 a,b). The patient underwent left-sided tube thoracostomy. In the 24-hour follow-up, right sided pneumothorax was detected on chest x-ray and right tube thoracostomy was performed (figure 2 a,b). The patient's oral intake was stopped. Both lungs of the patient who was receiving oxygen therapy, antibiotherapy were observed bilaterally on the chest X-ray during 3 days of follow-up.

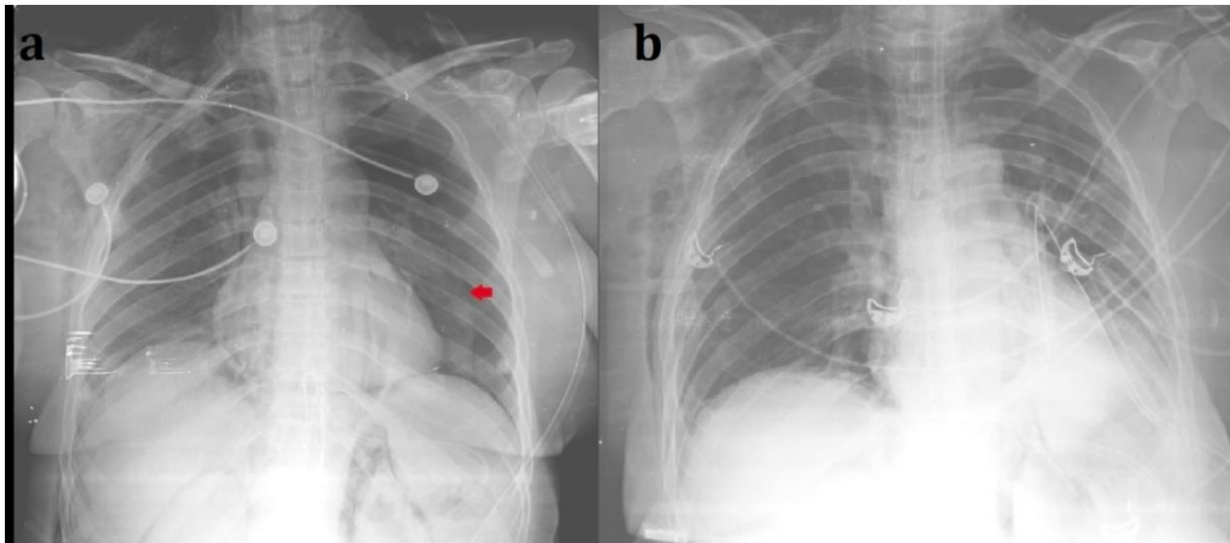


Figure 1: (a) Chest X-ray showed the large pneumothorax in the left side (arrow) **(b)** After the tube thoracostomy the pulmonary expansion and right subcutaneous emphysema were seen

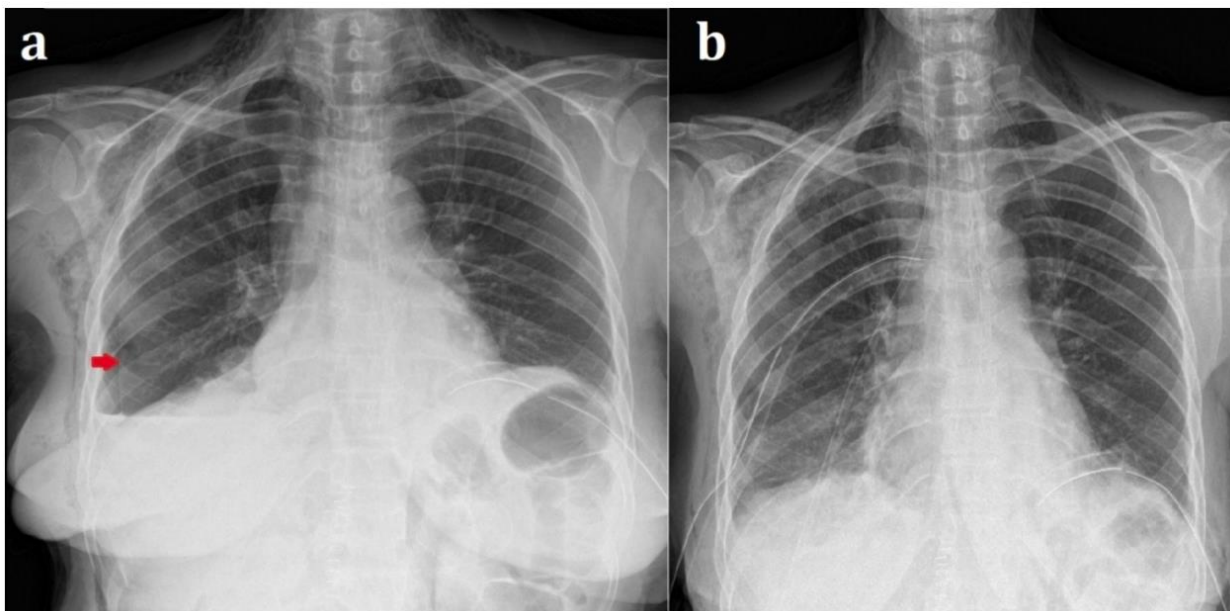


Figure 2: (a) Pneumothorax was detected in the right side (arrow) **(b)** Bilateral pulmonary expansion was achieved by tube thoracostomy.

DISCUSSION

ERCP is one of the methods commonly used in the diagnosis and treatment of biliary and pancreatic diseases. The complication rates after ERCP range from 5-6.9%, with a mortality rate of 0.33% [6,7]. The most serious complication after ERCP is perforation and it is seen in 1%. Mortality rate of gastrointestinal perforation is varies between 16% and 18% [6]. In our case, perforation was developed during ERCP and she was taken to emergency surgery. Pneumothorax developing after ERCP is one of the rare and potential fatal complication. The number of pneumothorax cases reported after ERCP in the English literature is less than 50 (2). There are 3 main reasons for the perforation mechanisms. These are guidewire-induced perforation of the duodenum, peribulbar perforation during sphincterotomy or perforations that occur far from the papilla [4,8]. Development mechanisms of pneumothorax, subcutaneous emphysema and pneumomediastinum due to perforation after ERCP are thought to occur as a result of the passage of the duodenal barrier to the posterior mediastinum, pararenal spaces, and then diaphragmatic hiatus to thorax. Pneumothorax and subcutaneous emphysema that occur without perforation are explained by the formation of alveolar rupture due to increased intrathoracic pressure in patients who cannot well tolerate during ERCP. In the literature, it has been reported that patients who develop pneumothorax after ERCP are generally bilateral, while those who are unilateral are often on the right [2]. In the case we presented, left-sided pneumothorax was detected, and tube thoracostomy was performed, and right-sided tube thoracostomy was performed on the 2nd day of follow-up. Conservative approach, such as without insertion of a chest tube, administration of antibiotics and restriction of oral intake, is generally sufficient in treatment. Complicated and mortal course is rare. In asymptomatic patients who received thorax CT in the first 24 hours after ERCP, retroperitoneal air was detected by 29%. The positive pressure air used in the ERCP can pass into the pleural space by mediastinum, subcutaneous tissue, and peritoneum [3,9]. The time of occurring pneumothorax after ERCP procedure was reported between 36%, 6% and 14% in first 1 hour, 1 to 6 hour and late period after discharging respectively in a large series (2). In the our case the pneumothorax in left side occurred in first hour after procedure and the right pneumothorax was detected after 24 hour of procedure.

CONCLUSION

Considering the risk of developing pneumothorax after ERCP, patients should be kept under observation for at least 24 hours. The pneumothorax is should be kept in mind and chest Xray should be taken when oxygen desaturation, subcutaneous emphysema were occurred after the procedure.

Conflict of interest

No conflict of interest was declared by the authors.

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