



Complete Right Main Bronchus Rupture in a Child: Report of a Case

Pediyatrik Saę Ana Bronş R pt r : Vaka Sunumu

Bronş R pt r  / Bronchus Rupture

Altuntas Bayram¹, Ceran Sami², Sunam Guven Sadi³, Cinici Ozkan¹

¹Department of Thoracic Surgery, Regional Education and Reserach Hospital, Erzurum,

²Department of Thoracic Surgery, Meram Medial Faculty, Necmettin Erbakan University, Konya,

³Department of Thoracic Surgery, Selcuk University, Medical Faculty, Konya, Turkey

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 zet

Ana bronş r pt r  ile sonulanan k nt g ę s travmaları olduka nadirdir ve muhtemelen y ksek bir hastane  ncesi mortaliteye sahiptir.. Bu yaralanmalar, solunum zorluęu ve eřlik eden yaralanmalardan dolayı y ksek oranda mortaliteye sahiptir. Altı yařında erkek ocuęu, k nt toraks travmasından dolayı klinięimize kabul edildi. Bařka bir merkezde saę pn motoraks nedeniyle t p torakostomi uygulanan hasta yetersiz akcięer ekspansiyonu nedeniyle klinięimize referesi edilmiř. Fizik muayenede orta d zeyde interkostal retraksiyon, tařipne ve siyanoz mevcuttu. Geliř anındaki direkt akcięer grafisinde saęda total pn motoraks vardı ve hilus inferiora yer deęiřtirmiřti. Hastaya rijid bronkoskopi yapıldı ve saę ana bronřta total r pt r g r ld . Hastaya sleeve  st lobektomi yapıldı. Bronş r pt rlerinde erken tanı ve tedavinin  nemini vurgulamayı amaladık.

Anahtar Kelimeler

Toraks; Travma; Bronş R pt r 

Abstract

Blunt chest trauma resulting in rupture of a main bronchus is rare and probably have a high prehospital mortality. These injuries are often fatal because of respiratory distress and the high frequency of associated multiple organ injuries. A six-year-old boy was admitted our clinic due to blunt chest trauma. The tube thoracostomy was performed for the right pneumothorax at another surgical center. He was referred to our clinic due to inadequate expansion of the lung. On the physical examination, there was middle intercostal retraction, cyanosis and tachypnoea. The initial chest x-ray showed total pneumothorax on the right side and the hilum replaced by inferiorly. The rigid bronchoscopy was performed and the the rupture of main bronchus was seen. The sleeve upper lobectomy was performed. We aimed to emphasize the important of early diagnosis and treatment in the bronchial ruptures.

Keywords

Thorax; Trauma; Bronchus Rupture

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Corresponding Author: Bayram Altuntas, Regional Education and Reserach Hospital, Department of Thoracic Surgery 25000, Erzurum, Turkey.

E-Mail: draltuntas@hotmail.com

Introduction

Blunt chest trauma resulting in rupture of a main bronchus is rare and probably have a high prehospital mortality [1,2]. These injuries are often fatal because of respiratory distress and the high frequency of associated multiple organ injuries [3]. Symptoms of bronchial rupture include dyspnea, subcutaneous emphysema, and related others injured organs. In 76% of patients, the injury occurs within 2 cm of the carina and in 43% within the first 2 cm of the right main bronchus.[4]. The pathophysiologic basis of bronchial rupture may be a sudden increase in intraluminal pressure with a closed glottis, compression of the airway between the sternum and vertebrae, or rapid deceleration [5]. The bronchoscopy is one of the best diagnostic methods. The management of bronchial rupture is surgery, like end-to-end anastomosis, rarely pulmonary resections. Herein, we describe a case of complete right main bronchus rupture in 6-year -old boy diagnosed by chest computed tomography and bronchoscopy after blunt chest trauma.

Case Report

A six-year-old boy was admitted our clinic due to blunt chest trauma. The tube thoracostomy was performed for pneumothorax at another surgical center. He was referred to our clinic due to inadequate expansion of the lung. On the physical examination, there was middle intercostal retraction, cyanosis and tachypnoea. Breath sounds were diminished on the right side. The hemoglobin, hematocrit and leucocyte values are 9.7 gm/dl, 30.2 % and 13.4x10³ cells/ml, respectively

The initial chest x-ray showed total pneumothorax on the right side and the hilum replaced by inferiorly, fallen lung sign (figure 1). Additionally, there was cut-off sign for the right main bronchus on the CT scan. The rigid bronchoscopy was performed and the the rupture of main bronchus was seen . The patient was positioned for the thoracotomy. The lateral thoracotomy was performed. The intermediar bronchus and upper lobe bronchus had ruptured, independently (figure 2). The sleeve upper lobectomy was performed due to granulation of upper lobe bronchus. Postoperative period is eventful.

Discussion

Bronchial rupture due to blunt trauma in children is more frequent in males than females, most commonly involves the adolescent age group [6]. The “fallen lung” sign on the chest roentgenogram, inadequate expansion of the lung, massive air



Figure 1. The right hilum replaced by inferiorly (black arrow).

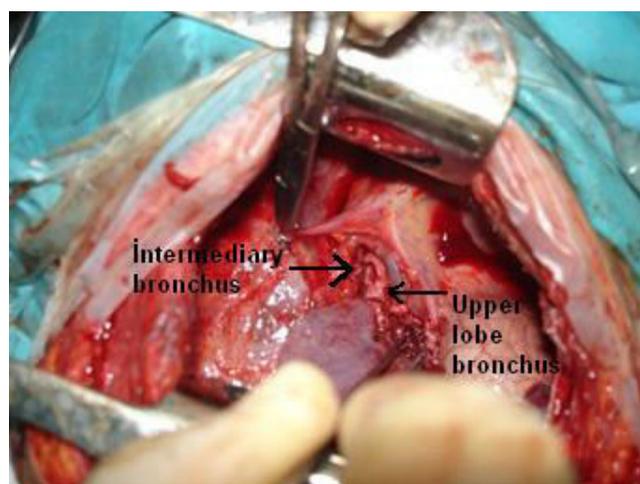


Figure 2. The intermediar bronchus and upper lobe bronchus had ruptured, independently.

leak and the atelectatic lung are high specificity for bronchial rupture [7]. Bronchial ruptures usually occur within 2.0 cm of the carina [4]. Bronchoscopy provides a definitive diagnosis but thoracotomy may necessary in some cases [8]. Chest X-ray is the basic imaging procedure, but CT scan has proven helpful in visualizing the level of the rupture [9].

In this case report, a six-year old boy presented with complete right main bronchus rupture. In keeping with the clinical scenario, radiologic findings and physical examination, the initial diagnosis was bronchial rupture. The rigid bronchoscopy was necessary to proven this diagnosis.

Although the choiced treatment is end-to-end anastomosis, we performed to sleeve upper lobectomy. Because, the patient was referred to our clinic three days after trauma, and there was granulation in the upper lobe bronchus. Postoperative period was uneventfull.

The prognosis of bronchial ruptures is often related to the severity of associated injuries. Over the long term, bronchial stenosis after primary repair of a bronchial rupture may be seen [2]. Our patient is in the seventh years, and there was no bronchial stenosis.

In conclusion, rupture of the main bronchus is uncommon. It is serious complication of blunt thorax trauma in childhood. The early diagnosis and surgical intervention can be possible with complete functional and paranchymal preservation of the lung.

Competing interests

The authors declare that they have no competing interests.

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