

## CASE REPORT

## Spontaneous Splenic Rupture in the Early Postoperative Period to After Lobectomy

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## Abstract

Spontaneous splenic rupture is a quite rare entity that may develop secondary to some special situations (lymphoma, post-abdominal surgery etc). In the literature, the case of a patient has been reported following thoracic surgery. In a patient who had undergone right upper lobectomy for pulmonary carcinoma, signs of acute abdomen and low levels in the hemogram were detected on the fifth postoperative day; therefore, the patient underwent further investigations. A radiological evaluation revealed splenic rupture, and the patient was operated on. A case is presented that may be fatal and requires emergency response and that has to be kept in mind, although it is extremely rare. A case of spontaneous splenic rupture has been presented that may be fatal and requires emergency response; this should be kept in mind, although it is extremely rare.

**KEYWORDS:** Lung cancer pulmonary mass, splenic rupture, thoracic surgery pulmonary resection**Received:** 27.09.2016**Accepted:** 06.02.2017**Available Online Date:** 01.03.2017

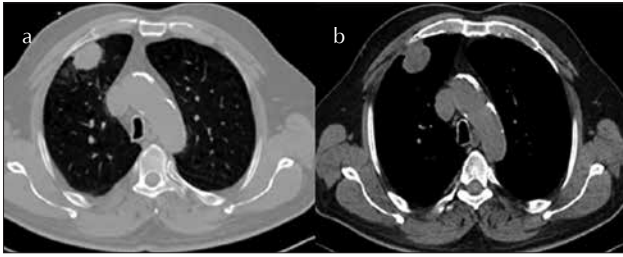
### INTRODUCTION

Splenic rupture is a fatal situation that commonly develops after trauma. A ruptured spleen in the absence of trauma is referred to as spontaneous splenic rupture [1,2]. It is quite rare, and its frequency has been reported to be 0.1% to 0.5% [3]. Spontaneous splenic rupture may be related to malignancies, endoscopic surgeries, use of anticlotting medications, or infections, and it may also exist idiopathically in the absence of any cause [4]. Hemodynamic support and emergency splenectomy are essential when it is diagnosed. We present a case with spontaneous splenic rupture that developed in the early postoperative period following right upper lobectomy and that had a fatal course. This case report serves as a discussion on and reminder of this hazardous complication.

### CASE PRESENTATION

A 69-year-old male presented with complaints of coughing and bloody sputum; his chest X-ray revealed pathological signs, and he underwent thoracic computed tomography (CT). A 4-cm diameter mass was detected adjacent to the pleura in the anterior right upper lobe and had an irregular contour (Figure 1). Pozitron emission tomography (PET) 18-FDG for staging revealed a mass with FDG trapping in the right adrenal gland, in addition to the pulmonary mass. Transthoracic needle biopsy was performed for making a diagnosis. A diagnosis could not be made with the biopsy result; therefore, the mass in the adrenal gland was removed by endoscopic surgery. The pathological diagnosis of metastasis of an epithelial tumor was made. The period between laparoscopy and pulmonary resection was three weeks and was without any complication. With these signs, the patient was hospitalized in our clinic for the resection of the pulmonary mass. The patient provided written informed consent. He underwent mediastinoscopy, and the results of frozen section biopsy of the nodal stations 4R and 4L were reported as benign. Right upper lobectomy and mediastinal lymph node sampling were performed in the same session. The postoperative period was uneventful; apical and basal drains were removed on the fourth and fifth days, respectively. The patient was going to be discharged from the hospital during the day; however, there was a sudden (in a few minutes) drop in his arterial blood pressure in the morning. Rapid investigations revealed his Hgb levels and Hct to be 7.9 g/dL and 23.8%, respectively. A chest X-ray was performed to evaluate the possibility of hemorrhage on the side of the resection; however, no signs of thoracic bleeding were observed. The patient consulted with members of the General Surgery Department because of the development of abdominal pain and distention during this time this procedure. Left bundle branch block and tachycardia developed, and he was evaluated by cardiologists. The patient's condition was partially stabilized, and he underwent abdominal CT, as recommended by general surgeon the department of general surgery. This investigation revealed free fluid in the abdomen and a hematoma around the spleen





**Figure 1. a, b.** Computed tomography image: A 4-cm lesion in the right upper lobe



**Figure 2.** Computed tomography image: Abdominal free fluid and a hematoma around the splenic area

(Figure 2). The patient was therefore referred to the General Surgery Department again, and he underwent emergent splenectomy with laparotomy. He developed cardiac arrest in the early postoperative period. His heartbeat returned with resuscitation, and he was referred to the Anesthesia Intensive Care Unit. Pneumonia, empyema, and renal failure developed during his intensive care unit stay, and he died on the 12<sup>th</sup> postoperative day.

## DISCUSSION

Spontaneous splenic rupture is quite rare; however, it must be considered in case of sudden drop in arterial blood pressure during early postoperative period due to its fatal consequences. Malignancies, infectious diseases, and systemic diseases play roles in its etiology. In particular, hematological malignancies form a wide group in this regard [1,4]. Although the available data are limited, its frequency has been reported to be 0.1% to 0.5%. Cases of spontaneous splenic rupture commonly in the literature as case reports; however, in the study by Kocael et al. [5], including a series of 12 cases, the most frequent cause of spontaneous splenic rupture has been reported to be the use of anticoagulants. Systemic diseases (amyloidosis, hepatitis, etc.) and malignancies play roles in its etiology. Further, there are idiopathic cases without any cause [5]. Hemodynamic support and emergency splenectomy are primarily recommended as soon as a diagnosis has been made, according to the clinical situation of a patient. The rate of splenectomy in these cases has been reported to be approximately 84.1% [1]. Nevertheless, in a ruptured

spleen, particularly in cases related to infectious conditions and those that are not life threatening, clinical conservative approaches may also be performed. However, a patient must be closely followed up. Studies have reported a mortality rate of approximately 12.2% <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4254229/> however, in patients with a malignancy, splenomegaly, advanced age, and delayed diagnosis, the risk of mortality further increases [1,5].

In the literature, there is a single case with spontaneous splenic rupture in the early postoperative period following thoracotomy, and a malignancy was also present in this case [6]. The current patient with a malignant disease underwent laparoscopic right surrenalectomy for the metastatic lesion three weeks before pulmonary resection. Anticoagulant agents were administered for prophylaxis in the pre- and postoperative periods. All these conditions are risk factors for spontaneous splenic rupture in our patient, but we considered that the splenic rupture was not associated with these risk factors because the time interval between the two procedures (laparoscopic right surrenalectomy and pulmonary resection) was three weeks. The patient died due to additional complications that had developed during his intensive care unit stay despite urgent and successful splenectomy in the early postoperative period. This study aimed to serve as a reminder of this rare complication. The emergent evaluation and surgical approach may be lifesaving if splenic rupture is considered, when symptoms such as hypotension, tachycardia, and abdominal pain develop in the post-operative period, particularly in patients with a malignancy.

**Informed Consent:** Written informed consent was obtained from patient who participated in this case.

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