A Case Report of Subclavian Aneurysm-Tracheal Fistula Presenting with Massive Hemoptysis; a Diagnostic Dilemma to the Emergency Room Personnel

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Abstract

Introduction: Subclavian aneurysm presenting as massive hemoptysis has never before been reported in the literature. The aim of the current study is therefore to report for the first time subclavian aneurysm-tracheal fistula presenting with massive hemoptysis.

Case presentation: A 56-year-old female presented with massive hemoptysis which was aggravated in the last two days. The patient, having a known case of tuberculosis (TB), received anti-TB treatment and was cured. General examination showed pallor. Chest x-ray, computed tomography scan, and bronchoscopy were normal. Subclavian conventional angiography showed a fistula between left proximal subclavian artery aneurysm and upper part of the trachea. After stabilization, the patient underwent operation, ligation of the right proximal subclavian artery, division, and transposition of the subclavian artery to the left brachiocephalic trunk.

Conclusion: Subclavian aneurysm-tracheal fistula presenting with massive hemoptysis has been reported for the first time in the literature. It was presented as a diagnostic dilemma to the emergency room personnel.

Key words: Aneurysm; Case reports; Fistula; Hemoptysis; Subclavian Artery

INTRODUCTION

Hemoptysis is not infrequent presentation to the medical department and the surgical emergency department (ED). It accounts for about 2% of admitted cases in acute settings (1). Although there is no international consensus regarding categorization, hemoptysis can be classified into mild, moderate, and massive, according to frequency of the symptoms and amount of blood expectorated each time (2). The causes are numerous including malignancy, infection, and inflammatory diseases like Wegner granulomatosis, Goodpasture syndrome and other connective tissue diseases. The diagnosis is not always straightforward (3). The managing physicians may not be able to differentiate hemoptysis from hematemesis, especially when the amount of blood is too great. Investigations include sputum examination, computed tomography (CT) scan, and flexible and sometimes rigid bronchoscopy. The patient may die from suffocation if not treated timeously and correctly. Intubation and general anesthesia may be indicated in specific situations in which the patient complains of suffocation and asphyxia (4). Spontaneous fistula between the aneurismal part of the great vessels and the tracheobronchial trees is extremely rare. To the best of our knowledge, fistula between subclavian aneurysm and the trachea as a cause of massive hemoptysis has never previously been reported in the literature (5). The aim of this report is to record the first case of massive hemoptysis caused by spontaneous fistula between subclavian aneurysm and the trachea presenting to the ED.

CASE PRESENTATION

A 56-year-old female presented to the medical ED for management of massive hemoptysis which was present for one month and became worse in the last two days of this period. The patient was a known case of tuberculosis (TB) from 18 months previously, for which she received anti-tuberculosis treatment and was cured. The color of the expectoration was bright red and come in gush. The patient complained of three attacks per day. General examination showed pallor, normal chest and included abdominal examination. Blood pressure on presentation was 110/80 mmHg, pulse rate was 75 beats per min, respiratory rate was 18 beats per min, oxygen saturation (SpO2) was 96% in room air.

Chest x-ray, chest CT scan, and bronchoscopy...
were normal (figures 1, 2). The patient remained in the medical department for five days without proper diagnosis; she was referred to the surgical emergency room for the possibility of operation if she had continuous massive hemoptysis, remained for 3 days in surgical ward and later deteriorated, was intubated and was admitted to intensive care unit for five days. Patient was later discharged to the ward. Subclavian conventional angiography was performed and showed a fistula between left proximal subclavian artery aneurysm and lower part of the trachea (figure 3). After stabilization and remaining in the ward for three days, the patient underwent left posterolateral thoracotomy, ligation of the proximal subclavian artery, and division and transposition of the subclavian artery to the left brachiocephalic trunk was performed (figure 4). The patient was discharged on the fourth postoperative day.

**DISCUSSION**

Hemoptysis has been defined as the coughing up of pure blood or blood mixed with mucus from the trachea, larynx, bronchi, or lungs. In the current case, the source of bleeding was from lower trachea (6). The condition may be the only presentation or complication of different respiratory diseases including pulmonary carcinoma, infections such as bronchitis, TB or pneumonia, and some cardiovascular diseases. In this case, there was not any underlying pulmonary disease (7). In massive hemoptysis (hemoptysis more than 300 cc of blood expectoration) physicians should think of severe underlying causes. In this situation, the most striking danger does not come from exsanguinations, but from choking (8). On presentation, our case was about to suffocate; SPO2 was 69%.

Valentine Mott has been credited with the first tried surgical management of subclavian artery aneurysm in 1918, almost one century ago. However, the patient did not make it and died from sepsis and hemorrhage (9). About 12
decades later, A.W. Smyth did the first proximal tie successfully for an aneurysm of the subclavian artery (10). Aneurysm of subclavian artery is extremely rare with only a few small case series and reports that could be found in the current literature. This ensures that the managing physician hardly thinks of the disease and the patients become tired from visiting different hospitals and being admitted to them as well as the frequent tests (5). Our case was diagnosed as a case of subclavian aneurysm after 20 days of hospitalization and the patient remained in hospital for about 25 days in total. Aneurysm of the subclavian artery may remain asymptomatic for several years, especially when the intrathoracic part is affected (10). The most frequently reported signs and symptoms are shoulder or chest. It could present as a supraclavicular pulsatile swelling. In rare instances neurological symptoms may also occur for long periods of time. The current case was completely normal before two days and presented with massive hemoptysis, which was reported for the first time in the literature. History of tuberculosis before one year was not found to be related to the current situation in our case.

CONCLUSIONS
Massive hemoptysis is a life-threatening condition and subclavian aneurysm-tracheal fistula presenting with massive hemoptysis has been reported here for the first time in the literature, presenting as a diagnostic dilemma to the emergency room personnel.

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AUTHORS’ CONTRIBUTION
LF was sharing in concept and design, drafting, final approval of the manuscript; EAF was sharing to the concept and design, acquisition of data, final approval of the manuscript; RS was sharing to the concept and design, revising the manuscript critically and final approval of the manuscript

CONFLICTS OF INTEREST
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REFERENCES