

See Article: Cerillo AG, Barberi E, Amoretti F, Berti S. Massive Hemoptysis from a Pulmonary Artery Pseudoaneurysm during Cardiac Surgery. Turk Thorac J 2017

Massive Hemoptysis: Danger is Real, Promptness is Essential

Ufuk Çağırıcı¹ , Oğuz Kılınç² 

¹Department of Chest Surgery Ege University School of Medicine, İzmir, Turkey

²Department of Chest Diseases, Dokuz Eylül University School of Medicine, İzmir, Turkey

Cite this article as: Çağırıcı U, Kılınç O. Massive Hemoptysis: Danger is Real, Promptness is Essential. Turk Thorac J 2018; 19; 54-5.

The term hemoptysis is defined as expectoration of blood that arises from the tracheobronchial tree or lung parenchyma. Loss of excessive blood from the lower respiratory tract is named as massive hemoptysis; however, till date, no consensus has been reached for the definition of massive hemoptysis. Some cut-off values, such as 200, 500, 600, and 1000 in a 24-hour period, had been proposed for the amount of expectorated blood, but none of them has been agreed upon [1-4]. On the other hand, some authors have suggested that any hemoptysis causing cardiopulmonary hemodynamic instability should be considered as massive, regardless of the amount of the expectorated blood. As the term massive indicates a specific amount of volume, İbrahim recommended using the term life-threatening hemoptysis instead of massive hemoptysis. This definition seems to be highly acceptable, especially in patients requiring urgent intervention [5].

The etiology of hemoptysis including massive or life-threatening hemoptysis varies, and there are many diseases responsible for this catastrophic clinical condition. Common causes are as follows: bronchiectasis, bronchogenic carcinoma, tuberculosis, fungal infections, lung abscess, polyangiitis (previously named as Wegener's granulomatosis), right heart catheterization, and pulmonary arteriovenous malformation. Massive hemoptysis has also been reported after and during cardiac surgery due to pulmonary artery pseudoaneurysm [6,7].

Initial management of massive hemoptysis consists of positioning the patient such that the diseased lung is in the dependent position to protect the non-bleeding lung. Subsequently, maintaining a patent airway, providing adequate gas exchange, restoring cardiovascular hemodynamics, and controlling the hemorrhage are crucial.

There are two main strategies for controlling the bleeding: non-surgical and surgical approaches. Non-surgical options include blood transfusion, bronchoscopy, arteriographic embolization, and correcting coagulopathy, with the administration of appropriate medication, if present.

The patient should promptly consult a thoracic surgeon when there is an uncontrollable and unilateral bleeding. Since the preoperative evaluation (i.e., pulmonary function test, cardiovascular assessment, any underlying disease, if present) of the patient cannot be adequately performed before surgical intervention, the emergency thoracotomy is at high risk. Jougon et al. [8] pointed out that in case of bleeding from the arterial bronchial vessels, surgery should be postponed after arterial embolization and clinical stabilization. In contrast, they recommended prompt surgical treatment when bleeding originates from the pulmonary vessels. In addition, Metin et al. [9] proposed emergency surgical intervention following rigid bronchoscopy and intubation, with a mortality rate of 11.5% in 27 patients. They believed that this fast-prompt approach is a life-saving procedure with acceptable mortality in all patients suffering from massive hemoptysis.

In conclusion, massive hemoptysis requires quick assessment of the individual characteristics of the patient, rapid decision-making for the appropriate treatment method, and prompt intervention. Surgery is indicated if non-surgical procedures fail.

Address for Correspondence: Department of Chest Surgery Ege University School of Medicine, İzmir, Turkey

E-mail: ufuk.cagirci@ege.edu.tr

©Copyright 2018 by Turkish Thoracic Society - Available online at www.turkthoracj.org

REFERENCES

1. Knott-Craig CJ, Oostuizen JG, Rossouw G, et al. Management and prognosis of massive hemoptysis. Recent experience with 120 patients. *J Thorac Cardiovasc Surg* 1993;105:394-7.
2. Hirshberg B, Biran I, Glazer M, et al. Hemoptysis: etiology, evaluation, and outcome in a tertiary referral hospital. *Chest* 1997;112:440-4. [\[CrossRef\]](#)
3. Crocco JA, Rooney JJ, Fankushen DS, et al. Massive hemoptysis. *Arch Intern Med* 1968;121:495-8. [\[CrossRef\]](#)
4. Corey R, Hilla KM. Major and massive hemoptysis: reassessment of conservative management. *Am J Med Sci* 1987;294:301-9. [\[CrossRef\]](#)
5. Ibrahim WH. Massive haemoptysis: the definition should be revised. *Eur Respir J* 2008;32:1131-2. [\[CrossRef\]](#)
6. Makita S, Maruyama T. Catheter-induced pulmonary artery injury and pseudoaneurysm after cardiac surgery. *Kyobu Geka* 2015;68:752-5.
7. Cerillo AG, Barberi E, Amoretti F, et al. Massive hemoptysis from a pulmonary artery pseudoaneurysm during cardiac surgery. *Turk Thorac J* 2018;XX-XX.
8. Jougon J, Ballester M, Delcambre F, et al. Massive hemoptysis: what place for medical and surgical treatment. *Eur J Cardiothorac Surg* 2002;22:345-51. [\[CrossRef\]](#)
9. Metin M, Turna A, Sayar A, et al. Prompt surgery for massive hemoptysis: more acceptable than it was reported. *Eur J Cardiothorac Surg* 2003;23:647;author reply 648. [\[CrossRef\]](#)