

PREOPERATIVE AND PERIOPERATIVE MANAGEMENT OF PATIENTS WITH SUSPECTED LUNG CANCER

I have read the manuscript “Aortic arch aneurysm rupture into the lung misdiagnosed as lung carcinoma” by Che and colleagues,¹ and I congratulate the authors. Yet, I want to remark on some aspects of the manuscript.

On a computed tomography scan of the chest, the authors identified a well-defined mass in the left upper lobe of the lung invading the side wall of the aortic arch and diagnosed lung cancer. There was no preoperative histopathological diagnosis of the suspicious lung mass and, therefore, staging was not performed. Moreover, during the exploratory thoracotomy, a left upper lobectomy was performed without perioperative frozen section examination.

Once the radiographic or clinical presentation raises the possibility of lung cancer, the physician must proceed in an expeditious manner to confirm a diagnosis. The evaluation should establish the histopathological tissue diagnosis and determine the stage of the lung cancer. This information is critical for treatment decisions and discussion of prognosis with the patients.² Clinically noninvasive or minimally invasive techniques such as sputum cytology, fibre-optic bronchoscopy, endobronchial forceps biopsy, bronchoalveolar lavage, transbronchial needle aspiration, thoracentesis and percutaneous pleural biopsy as well as invasive techniques such as transthoracic fine-needle aspiration guided by computed tomography or ultrasonography, video-assisted thoracoscopic surgery and open thoracotomy can be used to diagnose lung cancer. After tissue type is established, the patient must be accurately staged. Staging is the measurement of the extent of lung cancer. The only rationale for staging is to select patients who will benefit from surgical resection. In this context, expanded clinical evaluation is performed, and tumour status, nodal status and evidence

of metastatic disease are determined by a variety of procedures such as computed tomography of the chest extended through the liver and adrenal glands, positron-emission tomography, scalene lymph node biopsy, mediastinoscopy, anterior mediastinotomy, video-assisted thoracoscopic surgery, and fine-needle aspiration biopsy of mediastinal lymph nodes guided by esophageal endoscopic ultrasonography.^{2,3} With correct staging, it is possible to detect mediastinal invasion or distant metastasis, achieve high rates of complete resection, identify patients who would benefit from induction therapy and avoid unnecessary surgical procedures such as thoracotomy in inoperable patients, which may cause treatment failure and death.⁴

Despite the use of all these techniques, thoracotomy can be performed in cases where limited lung cancer is suspected without preoperative histopathological proof of malignancy. In such cases, the surgeon should assess the nature of the lesion macroscopically and perform a biopsy for frozen section examination. If there are signs of malignancy, mediastinal lymph nodes have to be examined histopathologically; the type of surgery has to be determined with intraoperative staging. Nashef and colleagues⁵ argued that lung resection should not be performed without examination of perioperative frozen sections when thoracotomy is performed for suspected but unproven lung cancer.

In conclusion, in suspected lung cancer cases, malignancy must be routinely confirmed histopathologically before lung resection to avoid serious functional and medico-legal sequelae in benign diseases.

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DRS. CHE AND LIU REPLY

We appreciate Dr. Karapolat's constructive suggestions about our article.¹ These suggestions were reasonable for the diagnosis and treatment of a pulmonary mass. However, the case described in our manuscript was rare.

Our patient had obvious symptoms of hemoptysis and hoarseness that had lasted for 8 months. Contrasted computed tomography revealed a growing pulmonary mass in the left upper lung. Anti-infection therapy was inefficient. The preoperative diagnosis was the pulmonary tumour invading the aortic arch. The systemic image examination did not reveal any other mass, and we found no intumescent lymph node in the mediastinum or hilum of the lungs. The bronchofibroscope examination revealed only paralysis of the left vocal cord, and no valuable cytology findings. Our primary diagnosis was lung cancer staged cT4N0M0. We had experience in resection of T4 lung cancer with cardiopulmonary bypass.² Previous

reports suggested that such T4-IIIb cases could benefit from surgery.^{3,4} Our patient had obvious symptoms, and it was possible that the mass could be completely excised. Meanwhile, there were no definite contraindications for surgery in our patient. Based on these reasons, we performed the surgery. We did not perform invasive diagnostic techniques such as pulmonary paracentesis to obtain further pathological evidence. In such a case, pathological examination is unnecessary because the surgery is indicated regardless of the pathological result.⁴ Furthermore, it would have been very dangerous to perform pulmonary paracentesis for the mass invading the aortic arch.

Aortic arch replacement with an artificial blood vessel is efficient to treat an aortic arch aneurysm in which the lung adhered to the aortic arch with inflammatory response. However, excision of the left upper lobe of the lung is recommended when pulmonary hematoma is caused by an aortic arch aneurysm that has ruptured into the lung.⁵⁻⁷ Since in our patient the left upper lobe of the lung was consolidated and contained a

large pulmonary hematoma, it would have been very difficult to detach the aortic aneurysm from the lung. Excision of the lung was the only option.

In our patient, a 1.5-cm crevasse was found on the aortic aneurysm during the surgery. The aortic aneurysm ruptured into the left upper lobe of the lung and formed a large aneurysm. Nontumour-like tissue was found during surgery. Because pulmonary hematoma and pseudoaneurysm had been diagnosed, it was not necessary to perform intraoperative frozen section examination. However, intraoperative frozen section examination would confirm the diagnosis.

In conclusion, the main purpose of our case report was to remind doctors that an aortic aneurysm invading or rupturing into the lung should be considered when a mass in the mediastinum or in the lungs adheres to the aorta, and treatment should be performed promptly.

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