CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 29 (2016) 59–62

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Minimally invasive resection of synchronous triple primary tumors of the esophagus, lung, and thymus: A case report

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ARTICLE INFO

Article history:
Received 16 August 2016
Received in revised form 20 October 2016
Accepted 21 October 2016
Available online 23 October 2016

Keywords:
Multiple primary neoplasms
Esophageal cancer
Lung cancer
Thymoma
Minimally invasive thoracoscopic surgery

ABSTRACT

INTRODUCTION: Reports of synchronous multiple primary tumors are very rare. We report a case of synchronous esophagus and lung cancer combined with thymoma treated with a minimally invasive approach.

PRESENTATION OF CASE: In a 63-year-old patient, cT2 esophageal squamous cell carcinoma was found. Chest computed tomography revealed a lesion in the right upper lobe combined with an antero-superior mediastinal mass. She was treated with one-stage bilateral video-assisted thoracoscopic + laparoscopic esophagectomy with lymph node dissection and lobectomy with complete lymphadenectomy followed by thymomectomy and demonstrated a favorable response at early follow-up, without severe adverse surgical complications and evidence of local recurrence or distant metastasis. But the long-term follow-up is still needed for the evaluation of therapeutic effects of surgery.

DISCUSSION: In the diagnostic procedure we excluded the probability of esophageal carcinoma metastasizing to the lung. Considering the patient's physical condition permit, we performed a minimally invasive surgery for three tumors. Besides, suitable operative incisions are important for the success of surgery.

CONCLUSION: To our knowledge, this is the first case report in which simultaneous minimally invasive resection of esophagus and lung cancer combined with thymoma.

1. Introduction

Reports of synchronous multiple primary neoplasms have been increasing due to advances in diagnostic techniques and multimodality therapies [1]. But the synchronous triple primary tumors are very rare. We report here a case of a patient with esophagus and lung cancer combined with thymoma successfully treated by simultaneous minimally invasive resection of triple tumors.

2. Case report

A 63-year-old woman, not an alcohol and tobacco user, was admitted to our hospital with progressive dysphagia for two months. An endoscopy was performed which found an ulcerated circumferential mass extending from 30 to 35 cm in the thoracic esophagus and histopathological examination of the biopsy showed a poorly differentiated squamous cell carcinoma (cT2). An upper gastrointestinal series revealed irregular filling defect and niche in the thoracic esophagus, the length 4.5 cm (Fig. 1). Further computed tomography (CT) of the thorax displayed the esophageal tumor with no signs of mediastinal infiltration and a 20 mm lesion in the right upper lobe, as well as an antero-superior mediastinal mass (Fig. 2). However, lymphadenopathy or distant metastasis was not observed. Endobronchial tumor growth and tumorous infiltration could be excluded bronchoscopically. Endoscopic esophageal ultrasound was not performed due to little effect on the next remedy. The patient had a 5 year history of hypertension. She had no family history of cancer and liked to eat hot food. There was no obvious abnormality in the laboratory data.

Considering the patient's physical condition and lung function permit, after deliberate discussion of an operational manner we performed the minimally invasive esophagectomy with two-field lymphadenectomy, the VATS right upper lobectomy associated with complete lymph node dissection and radical thymomectomy in a simultaneous surgery.

We performed the VATS thymectomy and thymomectomy first. The patient was rotated 45° to the right in a supine position following the double-lumen endotracheal intubation under general anaesthesia. The positions of trocars were shown in Fig. 3A. A mass about 4.5 × 4.5 × 3 cm was found beside the pulmonary artery in the antero-superior mediastinal space. The mediastinal pleura was incised superiorly and dissection started on the left side with careful identification of the left phrenic nerve. When the surgery was completed, the specimen was removed using an endoscopic bag.

The second step was the VATS lobectomy with complete lymph node dissection. The positions of trocars were shown in Fig. 3B. The

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http://dx.doi.org/10.1016/j.ijscr.2016.10.048

Fig. 1. Upper gastrointestinal series revealed the tumor was in the thoracic esophagus.

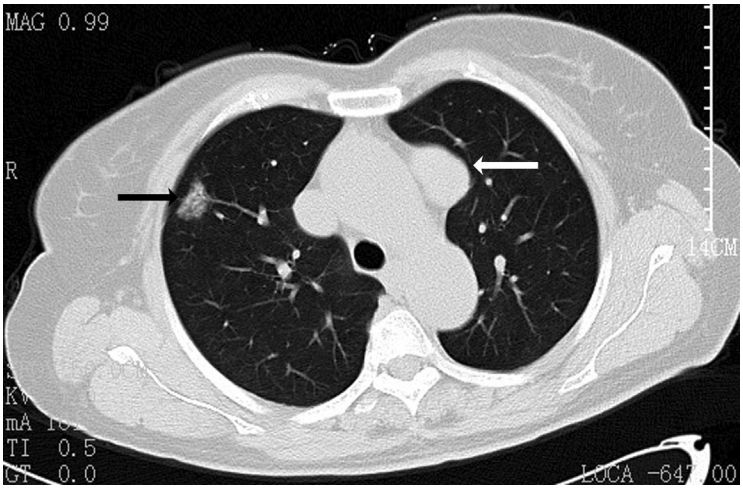

Fig. 2. CT-scan of the chest showing a ground-glass opacity in the right superior lobe (black arrow) associated with an anterior mediastinal solid lesion (white arrow).

patient was placed in the left-lateral decubitus. The right upper lobectomy was carried by cutting the superior vein first, followed by the superior artery and fissures, the bronchus last. Complete lymphadenectomy was then performed.

Then the video-assisted thoraco-laparoscopic esophagectomy and two-field lymphadenectomy were performed. The esophagus which was ready to remove was separated in the same position. After above procedures the patient was turned to the supine position. After five abdominal trocars (Fig. 3C) were introduced and CO_2 was insufflated at a pressure of 10 mmHg to expand the abdomen, stomach mobilization and paracardial lymph node dissection were performed by an ultrasonic scalpel with the right gastroepiploic artery reserved. Intraoperative frozen section found no residual tumor at the proximal margins. Then the 4-cm wide gastric conduit was pulled up through a mediastinal route, and intrathoracic esophagogastric anastomosis was carried.

The surgical duration was 412 min and blood loss was 200 mL, without serious complications in the operation. The patient began to have liquid diet on the eighth post-operative day and no anastomotic leakage or severe infection found. The final histopathology confirmed the diagnosis of stage IIA poorly differentiated squamous cell carcinoma *p*-G3, *p*-T2, *p*-N0, *p*-R0. The histopathological result of the lung tumor showed stage IA invasive adenocarcinoma *p*-T1a, *p*-N0, *p*-R0. The antero-superior mediastinal mass was confirmed to be a type AB, stage I thymoma. The post-operative course was uneventful and the patient was discharged to rehabilitation after