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## Video-assisted thoracic surgery mediastinal germ cell metastasis resection

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### Abstract

Thoracoscopy can be safely used for dissection of masses in the visceral mediastinum. We report the case of a 31-year-old man affected by metastatic germ cell tumour and successfully treated with a 3-port posterior approach video-assisted thoracic surgery.

**Keywords:** VATS • Mediastinal germ cell tumour • Non-seminomatous germ cell

### INTRODUCTION

Video assisted thoracic surgery (VATS) can be safely used for mediastinal dissection [1, 2]. It has already an established role in thymectomy [3], diagnostic procedure for mediastinal mass and mediastinal lymph node biopsies as an alternative to Chamberlain operation. The most difficult region to approach by VATS is probably the paravertebral and visceral mediastinum posteriorly to the hilum, for example for subcarinal region lymphadenectomy.

Non-seminomatous testicular germ cell tumour is a heterogeneous group of histologic taxonomy associated with different biological behaviours which affect young males. The histology can be mixed within the same tumour and also transform into more aggressive subtypes. Early diagnosis and a combination of chemotherapy and surgery can usually achieve a high rate of disease free survivors. Some tumours tend to spread to retroperitoneal and mediastinal lymphnodes. Radical surgical excision is the most important step of the management of these patients.

### CASE

We report the case of a 31-year-old man who underwent neoadjuvant chemotherapy and orchiectomy 10 years ago. Subsequently, 1 year later, he underwent laparotomy for retroperitoneal lymphnodes metastasis. Two years afterwards, he underwent sternotomy extended to the left neck for further lymphnodes metastasis. He was followed up for further 8 years when a repeated CT scan showed a 3 cm mass in the posterior aspect of the visceral mediastinum (Fig. 1) sitting in front of T5 and posterior to the left atrium, between the azygos vein and the

descending thoracic aorta on the left. He was offered surgical resection by a right 3-port CO<sub>2</sub> posterior approach VATS. This seemed to be the best alternative to a right thoracotomy. The first port was placed with closed technique under the inferior angle of the scapula, with the camera inside a 5-mm disposable transparent port, and further two 5-mm ports were placed, under direct vision, anteriorly and inferiorly to the first one. They were on a line of a possible postero-lateral thoracotomy. We think this is the best port placement for exposure and dissection on the posterior mediastinum and dissection of the subcarinal region lymph nodes (as shown in the Video 1 and Fig. 2). The camera was used in the posterior port. Suction, diathermy, clips applicator and scissors were used often in the middle port, while the anterior port was used mainly for retraction. The specimen is finally delivered in a bag and after little enlargement of the anterior port. The postoperative course was uneventful, no chylothorax or

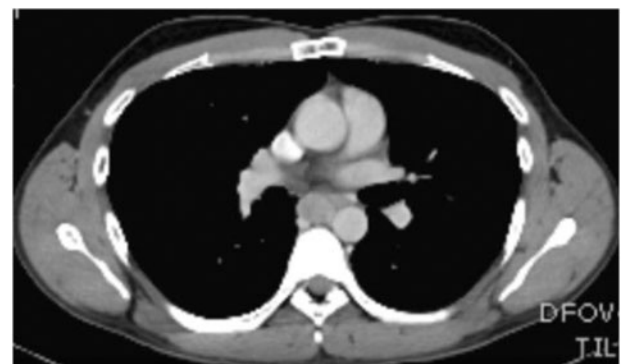
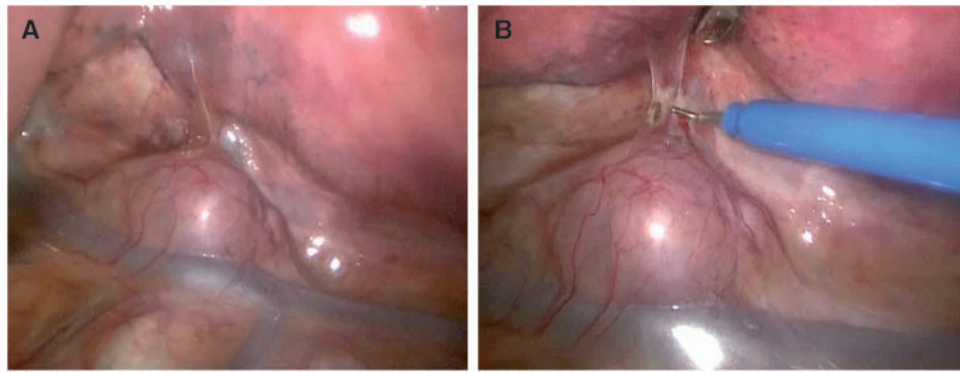
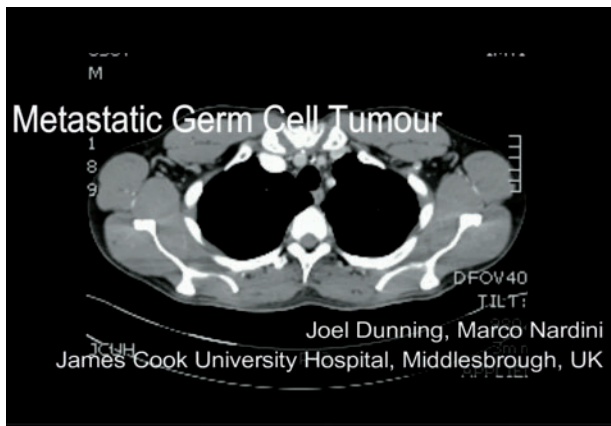


Figure 1: Abnormal CT scan, suspicious for metastatic germ cell tumour.



**Figure 2:** (A) Intraoperative view of the mediastinal mass. (B) Hook diathermy dissecting the parietal pleura medial to it while a lymph node holding forceps retracts the lung anteriorly.



**Video 1:** The video shows the case of a 31-year-old man with mediastinal lymph node mass. The patient is successfully treated with a 3-port posterior VATS. Reproduced with permission from CTSNet. Copyright: CTSNet 2016.

air leak were noted so that the chest drain was removed on day one. The patient went home on Day 2 with no significant discomfort. The histology confirmed metastatic teratoma with 2 components and different from the previous metastasis.

## CONCLUSION

The posterior aspect of the hilum can be treated by minimally invasive techniques, especially by posterior approach VATS. Although the primacy of the anterior approach is well established for lung lobectomy, a well-trained VATS surgeon should be familiar also with the posterior technique, in order to select the best approach in every circumstance and for every patient.

**Conflict of interest:** none declared.

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