Robotic-assisted resection of an intrathoracal parathyroid adenoma

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Background
In patients with primary hyperparathyroidism, up to 1-2% show a functional ectopic mediastinal parathyroid gland¹. Although a majority of them can be treated with a cervical approach, a few cases require a sternotomy or thoracotomy due to their challenging location. After the thorascopic approach proved to be a feasible option, the da Vinci robotic systems seems to offer a new approach to this pathology². We present a case of a patient with a primary hyperparathyroidism due to an ectopic mediastinal parathyroid adenoma who underwent a Robotic-assisted thoracoscopic surgery.

Materials and Methods
A 75-year-old man, 18 years after a median sternotomy with coronary artery bypass graft (right internal mammary artery) due to a cardiovascular disease, was referred to our department for treatment of primary symptomatic hyperparathyroidism. The patient described bone and muscle pain associated with a beginning osteoporosis. Biochemistry showed elevated parathyroid hormone (192pg/mL) with a hypercalcemia (2.7mmol/L). Diagnostic was performed with an ultrasound scan and a $^{99m}$Tc mibi scintigraph and showed a 2.7x1.8x1.2 cm mediastinal parathyroid adenoma, located in the posterior mediastinum between the esophagus’ wall and the second thoracic’s vertebra.

Results
Robotic surgery was performed with the da Vinci Xi. In the theatre, the patient was positioned in the right lateral side, with a double lung ventilation, allowing a left-side robotic approach. After the identification of the aortic arch and the brachiocephalicus trunk, the parietal pleura was opened and the adenoma was identified posterior to the esophagus at the level of the second thoracic’s vertebra. Careful dissection of the adenoma was performed preserving the capsule at any time. After removing the gland, a chest tube was put into the thoracic cavity. Intraoperative PTH showed a decrease from 192pg/ml preoperativ to 80pg/ml 15 minutes after removal of the gland. Histology analysis confirmed a parathyroid adenoma (weight 1.6 g, size 2.6x1.0x0.6cm).

Conclusion
Robotic (da Vinci)-assisted thoracoscopic parathyroidectomy is a safe and feasible option to treat an ectopic mediastinal parathyroid gland, offering an optimal view overall into the posterior mediastinum. In case of a previous sternotomy as in our case, the robotic or thoracoscopic technique is an ideal approach for intrathoracal parathyroid adenomas.

References: