
Robotic assisted resection of ectopic mediastinal parathyroid adenoma – Standardising the minimally invasive approach

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Introduction

Ectopic parathyroid adenomas located in the mediastinum represent a rare clinical entity and should be considered in the differential diagnosis for mediastinal tumours. Median sternotomy or lateral thoracotomy used to be the standard approach for these lesions especially if located in the lower anterior mediastinum. A cervical approach can be useful if the adenoma is located in the superior mediastinum. In most cases the lesion is identified in the thymic tissue as a round mass.

Da Vinci Xi System

The introduction of the Da Vinci Robotic System has revolutionised minimally invasive surgery and is associated with better visualisation by magnification, instrumentation and better outcomes by minimising hospital stay, enhancing recovery and a better cosmetic result. In this presentation we discuss the surgical approach for ectopic mediastinal parathyroid adenomas with the utilisation of the Da Vinci Xi Robotic System.

Approach

The surgical technique is similar for all anterior mediastinal masses and we recommend approach from the right side/ pleural cavity. A left sided approach is suggested in the lesion is leaning towards the left edge of thymic tissue. The patient is positioned supine and slightly tilted to the left side. Three small incisions of 8mm each are performed for the insertion of the robotic arms. The 30-degree camera is inserted through the anterior axillary line incision - 8th space. The monopolar scissors in the same space anteriorly and parasternally. Bipolar forceps instrument is inserted at 4th space mid axillary line. A 12mm assistant port can be useful for insertion of swabs, suction irrigation and endoscope bag for the removal of the specimen. With the right lung isolation and CO2 insufflation the mediastinum is exposed, and all sensitive structures are easily visualised. In our experience the ectopic parathyroid can be easily visualised dissecting into the thymic tissue (guided by the CT scan) and can be resected with the capsule intact and surrounded by normal thymic tissue. Intraoperative measurement of PTH and calcium confirms complete resection. A 24F chest drain is inserted for 1 day into the pleural cavity and patient can be discharged home within 24 to 48hours.

Conclusions

Ectopic parathyroid adenomas could represent a differential diagnostic challenge but a surgical resection is similar to the robotic approach for any anterior mediastinal masses. With this in mind it is a modern and safe technique associated with excellent outcome, recovery and cosmetic result.