

# Surgical management of a rare case of mediastinal thyroid metastasis from cervical cancer

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## Abstract

Metastasis to the thyroid gland is a rare clinical presentation in surgical practice. Owing to the lack of data and to the heterogeneity of clinical cases, the percentage of patients affected by thyroid metastases eligible to undergo surgery is not easily predictable.

Because of the aggressive nature of malignancies, many of the patients presenting with thyroid metastases are often treated with palliative intent from an early stage. In contrast, lobectomy or total thyroidectomy may be performed in selected patients with the aim of long-term cure or achieving local control.

This report is of one of the few cases in literature of cervical cancer metastasizing to the thyroid gland. A woman was referred to the ENT Department with dyspnea and in rapidly worsening condition, needing for an emergency surgery. The thyroid metastasis caused marked contralateral dislocation of the trachea with a fairly reduced lumen at the cervico-mediastinal passage. Right thyroid lobectomy combined with sternotomy was performed.

Given the complexity of the case, communication between specialists involved in the management by modern multidisciplinary team is essential.

## Introduction

Metastasis to the thyroid gland is a rare clinical presentation in surgical practice. In fact, the incidence of primary non-thyroidal tumors that metastasize to the thyroid accounts for 1.4% to 3% [1].

Thyroid metastasis from cervical carcinomas is extremely rare, therefore few cases have so far been reported in literature [2-4]. The percentage of patients presenting with thyroid metastasis and who need tracheotomy due to dyspnea accounts for 3.6%, on the other hand, according to literature, as many as 10% of patients die from disorders related to tracheal compression [5].

Because of the aggressive nature of malignancies, many of the patients presenting with thyroid metastases are often treated with palliative intent. In contrast, lobectomy or total thyroidectomy may be performed in selected patients with the aim of long-term cure or achieving local control. Some authors suggest that thyroid lobectomy can be favored over total thyroidectomy, since it represents the least intrusive procedure able to minimize risk to laryngeal nerve and parathyroid glands.

This report is of one of the rare cases in literature of endometrioid adenocarcinoma metastasizing to the thyroid gland. A woman was referred to the ENT Department of our hospital (Ospedale Degli Infermi di Biella, Italy) presenting with dyspnea and in rapidly worsening condition, needing for an emergency surgery. The peculiarity of this case lies in the metastasis isotype rarity, its voluminous dimension, and its mediastinal localization, that required the intervention of a multidisciplinary team.

## Case report

A 72-year-old woman who had previously been diagnosed with endometrial adenocarcinoma in relation to which she had undergone

hysteroannessiectomy and subsequent RT, was admitted to the ENT Department presenting with a several week history of dyspnea and respiratory fatigue, rapidly worsening in the last 3 days. Laryngeal fibroscopy revealed the paralysis of the right hemilarynx with sufficient respiratory space at the glottic level, and a CT scan of the neck urgently performed identified a mass in the right thyroid lobe, with a maximum axial diameter of 69 mm, a cranio-caudal extension of 65 mm and a maximum anteroposterior diameter of 50 mm.

This lesion caused marked contralateral dislocation of the trachea with a fairly reduced lumen at the cervico-mediastinal passage. The patient was then hospitalized at the semi-intensive care ward and her vital signs constantly monitored. Afterwards, ultrasound guided fine-needle aspiration reported endometrial adenocarcinoma metastases. The case was subject to a multidisciplinary team analysis, then the indication of a right thyroid lobectomy combined with sternotomy was identified as the optimal approach. No intraoperative or postoperative complications arose, and a significant improvement in patient's dyspnea condition was identified. Therefore, the patient was discharged five days after the surgery.

During the initial 6 months of follow-up, the patient regularly reported good breathing, at the same time fibroscopy and bronchoscopy routinely performed revealed adequate respiratory space.

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## Discussion and conclusion

No international guideline specifies universal strategies to be adopted in case of thyroid metastases, for this reason surgical planning (thyroidectomy or tracheotomy) must be tailored differently from patient to patient. Decision-making must consider all possibilities including the chance of achieving long-term survival, and it must be based on the patient's best interest [2].

Tracheotomy may be the best choice for patients presenting with thyroid metastases, as it could prevent primary tumor from spreading in case of solitary metastasis, anyway it does not contribute to prolonging patient's life.

In contrast, thyroidectomy should be considered and suggested in case of compression caused by the metastases, in order to relieve symptoms and to improve the quality of life.

In this case, the patient had the metastases surgically resected, since dyspnea was rapidly worsening and the trachea alarmingly being obstructed by the mass. Since the metastasis had already reached the mediastinum, neither a tracheotomy nor a tracheal stenting would have resolved the dyspnea, therefore a sternotomy was practiced.

In accordance with literature, a thyroid lobectomy was performed rather than a total thyroidectomy since it represents the least intrusive procedure able to minimize risk to laryngeal nerve and parathyroid glands.

Given the complexity of the case, communication between specialists involved in the management of such cases is essential. The decisions must be made considering the risks and benefits of the surgical procedure, in order to reach the best shared conclusion as quickly as possible.

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