

CASE REPORT

Thyroid cells seeding along the transaxillary approach after robot-assisted transaxillary surgery (RATS) for a benign node

Rémy Louvel¹, Nathalie Badois¹, Jerzy Klijanienko², Ségolène Hescot^{1,3} and Caroline Hoffmann¹

¹Head and Neck Surgical Oncology Department, Institut Curie, PSL University, Paris, France

²Pathology Department, Institut Curie, PSL University, Paris, France

³Medical Oncology Department, Institut Curie, PSL University, Paris, France

Correspondence should be addressed to C Hoffmann Email caroline.hoffmann@curie.fr

A 46-year-old female presented with a 4-month history of 5–30 mm subcutaneous nodules in the right supraclavicular, axillary, and pectoral areas (Fig. 1). She had undergone a lobo-isthmectomy for a 20 mm right follicular adenoma performed 8 years earlier by robot-assisted transaxillary surgery (RATS). Benign colloid and thyroid cells were found in two successive fine needle aspirations. The CT scan revealed an ill-defined infiltrative lesion in the right central compartment with muscle and internal jugular vein invasion demonstrating a locally aggressive behavior. We suspected that malignant thyroid cells were seeding the tract of the transaxillary approach.

We performed a surgical resection of all the nodules and a total thyroidectomy extended to the surrounding infiltrated tissues (Supplementary Fig. 1, see section on [supplementary materials](#) given at the end of this article). Histologically, benign thyroid tissue displacement within muscular and connective tissues was identified in all masses, with no invaded lymph node (Fig. 1B and Supplementary Fig. 2). Despite the absence of observation of malignant thyroid cells, the tumor board recommended an adjuvant treatment with radioactive iodine (RAI) ablation given the wide and disseminated benign thyroid tissue displacements in surrounding tissues and the high risk of local recurrence.

Although controversial in the West, RATS is the most frequent minimally invasive technique for thyroidectomy used worldwide, especially in East Asia (1). The only

advantage of RATS is the absence of cervical scar. The rates of the common complications, such as recurrent laryngeal nerve injury, hypocalcemia, hematoma, seroma, and chyle leak, are similar for RATS and the open cervical approach (1, 2). However, RATS implies longer operating times and has specific complications such as injury to the brachial plexus (2.2%), the trachea (0.1%), and the great vessels (0.04%) (2).

Four cases of malignant thyroid cells seeding have been described, two after endoscopic transaxillary thyroidectomy and two after RATS (3, 4), whereas only one case was reported with benign cells (5). In the latter, seeded cells became symptomatic 3 years after RATS and the patient was treated with hormone-suppressive therapy only (5). Our case is the second with non-tumoral thyroid tissue seeding and the first mimicking malignant spreading on imaging. In the four cases with thyroid cancer, all patients were treated by RAI ablation (3, 4).

Thyroid cell seeding along the transaxillary approach may occur even with benign nodes, which may lead to the need of a secondary open surgery with scars; patients should be informed accordingly. The use of endobag may prevent such outcomes, although it has not yet been evaluated.

Supplementary materials

This is linked to the online version of the paper at <https://doi.org/10.1530/ETJ-22-0115>.

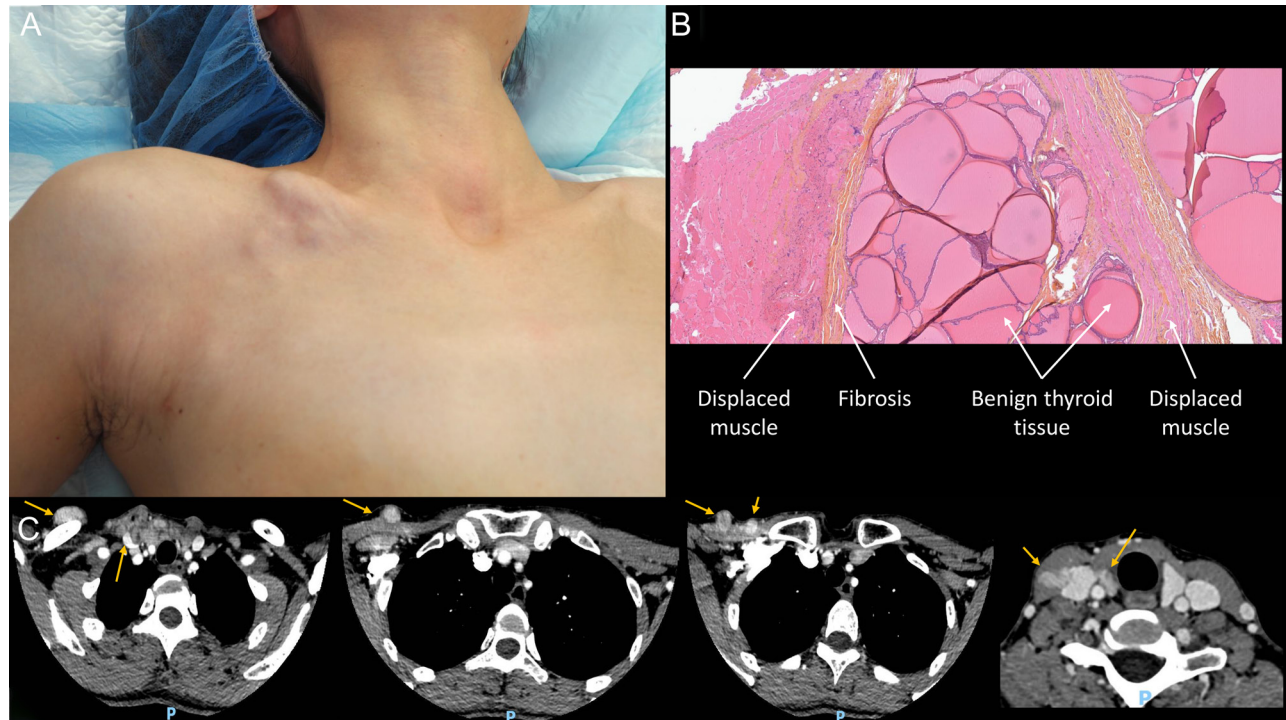


Figure 1

(A) Preoperative view. (B) Histological images of the cervical mass showing displaced benign thyroid tissue within the muscular fibers. Hematoxylin–eosin–safran, 100×. (C) CT scan, arrows show the subcutaneous nodules, the invasion of the sternocleidomastoid muscle, and the right thyroid compartment.

Declaration of interest

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of this case report.

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Patient consent

This study involves a single patient who has signed an informed consent.

Author contribution statement

R L, J K, C H wrote the manuscript and designed the figures. N B initiated this work and collected the clinical images. N B, J K, and H S managed the patient. All authors critically revised the manuscript.

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