Complete resection of ulcerating, infiltrative, voluminous differentiated thyroid carcinoma

Lucie Allard, Jérôme Alexandre Denis, Gaëlle Godiris-Petit, Gabrielle Deniziaut, Cécile Ghander, Elise Mathy, Erell Guillerm, Charlotte Lussey-Lepoutre, Laurence Leenhardt, Camille Buffet

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Case Report

Unexpected Complete Resection of a Historically Voluminous Differentiated Thyroid Carcinoma

Lucie Allard[a], Jérôme Alexandre Denis [b], Gaëlle Godiris Petit[c], Gabrielle Deniziaut[d], Cécile Ghander[a], Elise Mathy[a], Erell Guillerm [e], Charlotte Lussey-Lepoutre[f] Laurence Leenhardt[a], Camille Buffet[a]

[a] Sorbonne Université, GRC n°16, GRC Tumeurs Thyroïdiennes, Unité Thyroïde-Tumeurs Endocrines, AP-HP, Hôpital Pitié-Salpêtrière, Paris, France

[b] Sorbonne Université, GRC n°16, GRC Tumeurs Thyroïdiennes, Service de Biochimie Endocrinienne et Oncologique, UF Oncobiologie Cellulaire et Moléculaire, Pitié Salpêtrière, AP-HP, Hôpital Pitié-Salpêtrière, Paris, France

[c] Sorbonne Université, GRC n°16, GRC Tumeurs Thyroïdiennes, Service de chirurgie digestive et générale, AP-HP, Hôpital Pitié-Salpêtrière, Paris, France

[d] Sorbonne Université, GRC n°16, GRC Tumeurs Thyroïdiennes, Service d'anatomo-pathologie, AP-HP, Hôpital Pitié-Salpêtrière, Paris, France

[e] Sorbonne Université, GRC n°16, GRC Tumeurs Thyroïdiennes, UF d'Onco-angiogénétique et génomique des tumeurs solides, AP-HP, Hôpital Pitié-Salpêtrière, Paris, France

[f] Sorbonne Université, GRC n°16, GRC Tumeurs Thyroïdiennes, Service de médecine nucléaire, AP-HP, Hôpital Pitié-Salpêtrière, Paris, France

Short Title: Historically Voluminous Papillary Thyroid Carcinoma

*Corresponding Author

Full name: Dr Camille BUFFET

Department: Thyroid and Endocrine Tumors

Institute/University/Hospital: Sorbonne University / Pitié Salpêtrière Hospital

Street Name & Number: 47-83 boulevard de l'hôpital

City, State, Postal code, Country: 75013 Paris, France

Tel: 01 84 82 77 99

E-mail: camille.buffet@aphp.fr

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Text

An 87-year-old woman was referred to our department, for a 15cm right-sided cervical tumor with bleeding skin ulceration, signs of local infection (Panel A and B), and limited cervical mobility. Surprisingly, there were no other compressive symptoms. The patient had refused surgery on a 6 cm-papillary thyroid carcinoma (PTC) diagnosed three years earlier. Initially, considering the size of the tumor, anaplastic or at least poorly differentiated carcinoma was suspected. Unexpectedly, but successfully, total thyroidectomy and central and right lymph node dissection was performed. During surgery, the subhyoid muscles and right internal jugular vein had to be excised due to cancer invasion but the tumor was easily removed from the pharyngeal, esophageal or tracheal structures. The patient suffered from initial dysphonia and moderate dysphagia, resulting from right recurrent paralysis. The right parathyroids could not be preserved but hypocalcemia was easily controlled. The right facial nerve was damaged resulting in permanent right facial paralysis. As the skin suture was under great tension, a 6-cm dehiscence occurred eight days after surgery (Panel C) and was treated with a skin flap (Panel E). Patient neck mobility rapidly recovered. The skin flap was not planned at the time of definitive excision as the tumor was infected and complete resection seemed an unlikely possibility. The histological analysis revealed a 16 cm PTC (Panel D) with polymorphic well-differentiated subtypes (classic variants, tall cells, Warthin-like variant, columnar cells) extending to the skin, with cervical lymphadenopathies of up to 2.9 cm in diameter, in the right lateral areas, pT4a(m)N1b (20/28). Despite the impressive clinical presentation there were no poorly nor undifferentiated components. *B- Raf* c.1799T>A (p.Val600Glu) ($BRAF^{V600E}$) and *Telomerase Reverse Transcriptase* C228T ($TERT^{C228T}$) promoter mutations, identified on fine needle aspiration (washed-out solution), are known for being predictive of radioiodine resistance [1]. Considering both mutations and the patient's advanced age and low autonomy, the multidisciplinary panel agreed to avoid iodine treatment. Post-operative 3-month evaluation showed an empty thyroid bed (Panel F) with unthreatening lymphadenopathies and stable subcentimetric pulmonary nodes with thyroglobulin concentration at 0.4 µg/L and positive anti-thyroglobulin antibodies at 3451 UI/ml (N <40UI/mL) under Levothyroxin treatment.

Our case highlights the benefit of considering surgery in the context of a tertiary care center even for an apparent massive aggressive cervical mass and despite old age. At 7 months from initial surgery, the patient was free of any symptoms related to the remaining metastatic disease and her vital functions were preserved.

Consent:

Consent was obtained from each patient or subject after full explanation of the purpose and nature of all procedures used.

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The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

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Authors' contribution:

Lucie Allard and Camille Buffet designed the work, interpreted the data and drafted the work. All authors made substantial contributions to the conception of the work, revised it critically, gave the final approval for the version to be published and agreed to be accountable for all aspects of the work.

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Reference:

[1] Liu J, Liu R, Shen X, Zhu G, Li B, Xing M. The Genetic Duet of BRAF V600E and TERT Promoter Mutations Robustly Predicts Loss of Radioiodine Avidity in Recurrent Papillary Thyroid Cancer. J Nucl Med 2020;61:177–82.

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Figure

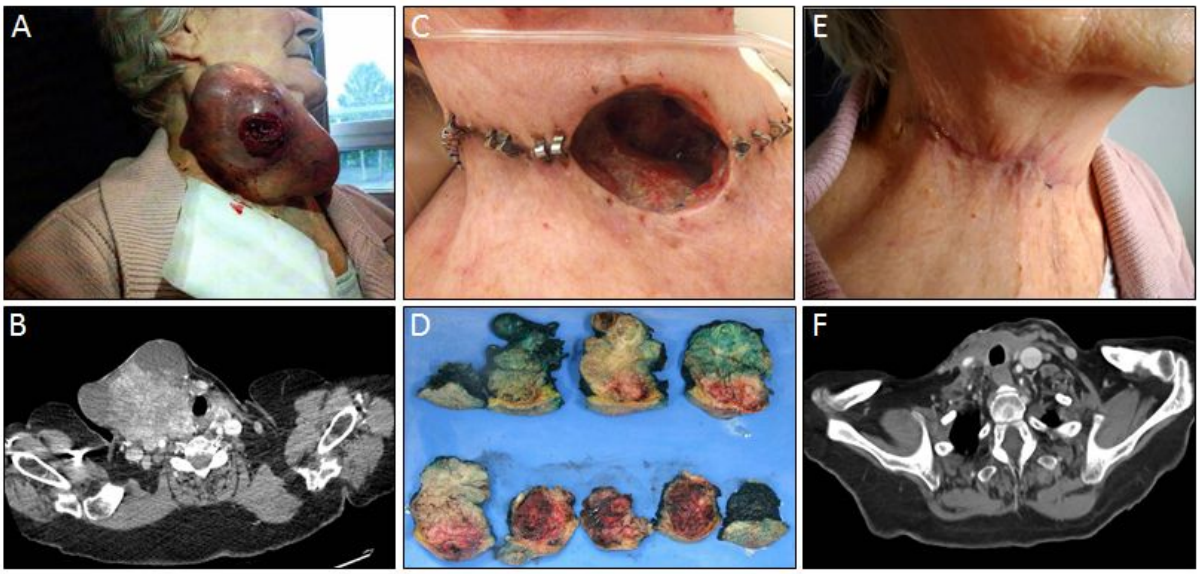

Figure 1. Evolution of a voluminous thyroid tumor from pre-operative (Panels A and B) to immediate (Panels C and D) and 3-month post-operative assessment (Panels E and F)