Complete resection of ulcerating, infiltrative, voluminous differentiated thyroid carcinoma

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Case Report

Unexpected Complete Resection of a Historically Voluminous Differentiated Thyroid Carcinoma

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Short Title: Historically Voluminous Papillary Thyroid Carcinoma

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Keywords: **Differentiated Thyroid Carcinoma; Total thyroidectomy; surgical resection; multiple histological subtypes**

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1 **Text**

2 An 87-year-old woman was referred to our department, for a 15cm right-sided cervical tumor
3 with bleeding skin ulceration, signs of local infection (Panel A and B), and limited cervical
4 mobility. Surprisingly, there were no other compressive symptoms. The patient had refused
5 surgery on a 6 cm-papillary thyroid carcinoma (PTC) diagnosed three years earlier. Initially,
6 considering the size of the tumor, anaplastic or at least poorly differentiated carcinoma was
7 suspected. Unexpectedly, but successfully, total thyroidectomy and central and right lymph
8 node dissection was performed. During surgery, the subhyoid muscles and right internal
9 jugular vein had to be excised due to cancer invasion but the tumor was easily removed from
10 the pharyngeal, esophageal or tracheal structures. The patient suffered from initial dysphonia
11 and moderate dysphagia, resulting from right recurrent paralysis. The right parathyroids could
12 not be preserved but hypocalcemia was easily controlled. The right facial nerve was damaged
13 resulting in permanent right facial paralysis. As the skin suture was under great tension, a 6-
14 cm dehiscence occurred eight days after surgery (Panel C) and was treated with a skin flap
15 (Panel E). Patient neck mobility rapidly recovered. The skin flap was not planned at the time
16 of definitive excision as the tumor was infected and complete resection seemed an unlikely
17 possibility. The histological analysis revealed a 16 cm PTC (Panel D) with polymorphic well-
18 differentiated subtypes (classic variants, tall cells, Warthin-like variant, columnar cells)
19 extending to the skin, with cervical lymphadenopathies of up to 2.9 cm in diameter, in the
20 right lateral areas, pT4a(m)N1b (20/28). Despite the impressive clinical presentation there
21 were no poorly nor undifferentiated components. *B- Raf* c.1799T>A (p.Val600Glu)
22 (BRAF^{V600E}) and *Telomerase Reverse Transcriptase* C228T (*TERT*^{C228T}) promoter mutations,
23 identified on fine needle aspiration (washed-out solution), are known for being predictive of
24 radioiodine resistance [1]. Considering both mutations and the patient's advanced age and low
25 autonomy, the multidisciplinary panel agreed to avoid iodine treatment. Post-operative 3-
26 month evaluation showed an empty thyroid bed (Panel F) with unthreatening
27 lymphadenopathies and stable subcentimetric pulmonary nodes with thyroglobulin
28 concentration at 0.4 µg/L and positive anti-thyroglobulin antibodies at 3451 UI/ml (N
29 <40UI/mL) under Levothyroxin treatment.

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

34

35 <u>Consent:</u>
36 Consent was obtained from each patient or subject after full explanation of the purpose and
37 nature of all procedures used.

38

39 <u>Funding/Disclosure of interest</u>

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40 The authors declare that there is no conflict of interest that could be perceived as prejudicing
41 the impartiality of the research reported.
42 This research did not receive any specific grant from any funding agency in the public,
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44 Authors' contribution:

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

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51

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Figure

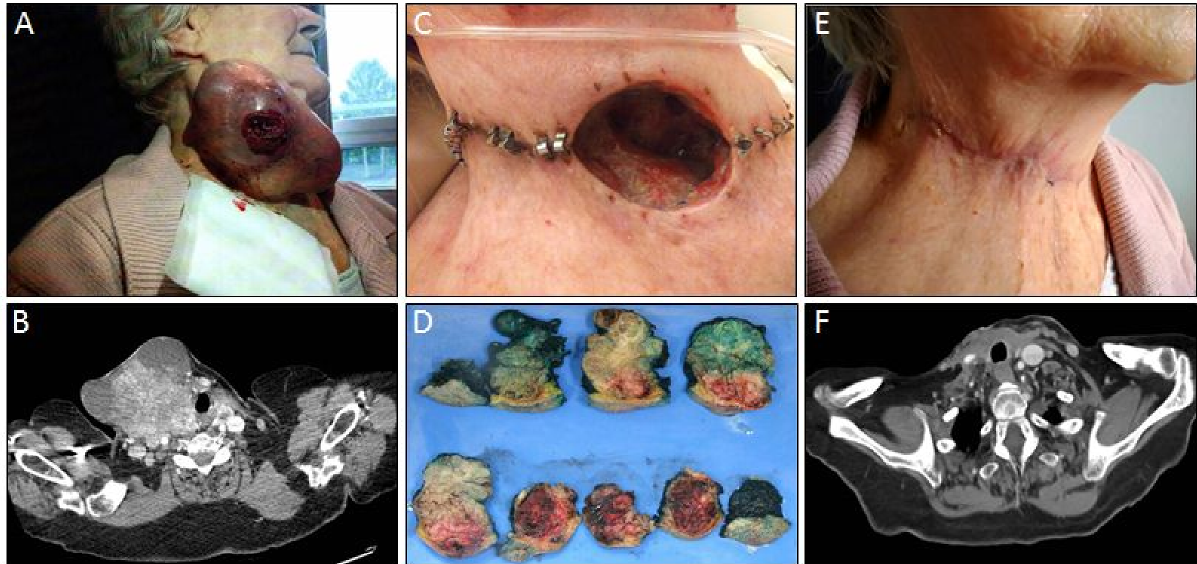

Figure 1. Evolution of a voluminous thyroid tumor from pre-operative (Panels A and B) to immediate (Panels C and D) and 3-month post-operative assessment (Panels E and F)

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