Case report

Subcutaneous implantation of oncocyctic thyroid cell aggregates nine years later from thyroidectomy. A case report

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1. Introduction

Subcutaneous implantation of thyroid tissue, also called cutaneous thyromatosis or thyroidosis, is a rare occurrence, developing when the thyrocytes pass through the thyroid capsule to spread locally during thyroid surgery and diagnostic procedures. These lesions are usually localized in the head and neck region and described early following to a fine-needle aspiration biopsy throughout the length of the needle tract (thus causing the dissemination of cells during the needle withdrawal) or after thyroidectomy [1-3]. Recently, cases of subcutaneous implantation of thyroid tissue were observed even after endoscopic or robot-assisted procedures [4,5].

2. Case presentation

A 90-year-old woman presenting two round cutaneous suspicious nodules was admitted to the Endocrine Surgery Unit. On examination she showed two palpable yellowish painless non-tender masses (33 mm and 10 mm in diameter, respectively) on the post-thyroidectomy cervical scar, which developed approximately one year earlier and were rapidly growing (Fig. 1). Nine years earlier, she underwent total thyroidectomy for a multinodular goiter that caused compressive symptoms, and an incidentally discovered subcapsular well-encapsulated oncocyctic adenoma 25-mm in the left lobe. Her history included more-over mild hypertension, atrial fibrillation, and depressive syndrome; she was taking levothyroxine, olmesartan, bisoprolol, rivaroxaban, and fluoxetine. The hormonal panel showed a marked increase in thyrotropin as well as in thyroglobulin, while thyroxine, calcitonin, and...
parathormone were within the limits. Routine laboratory investigations and chest radiography were normal. Soft tissue sonography showed two heterogeneously hypoechoic nodules at the cervical scar. The patient underwent a double excision and histology was consistent with two dermal oncocytic thyroid (or Hurthle) cell aggregates (Fig. 2). The hospital stay was uneventful and she was discharged on the same day of the surgical procedure. At the 12 months follow-up check, the patient is showed well and her wounds healed.

3. Discussion

Subcutaneous colonization of thyroid tissue was described for the first time in 1976 [6]; later there have been reports concerning the implantation of both benign and malignant pathologies, histotypes either papillary or follicular [2,3,7,8]. In particular, the review by Koller et al., which considered less than 50 cases of collected skin lesions (i.e. follicular, papillary, or mixed follicular-papillary carcinomas), showed that follicular carcinoma was the prevalent histotype where the head and the neck region was involved most frequently [7]. Among the possible mechanisms of skin involvement by thyroid tissue, in particular with regards to scar localizations, the most accredited pathogenetic hypothesis is the one in which the implantation of thyroid cells was brought about during surgical manipulation or was as a consequence of blunt cervical trauma [8].

Moreover, to our knowledge, the seeding of cells originating from oncocytic thyroid cell neoplasms has been reported in the world literature only in another article published in 2004 [8].

4. Conclusions

We report, according to SCAR guidelines [9], an unusual case of a double subcutaneous implant of oncocytic thyroid (or Hurthle) cells on the cervical scar, as a result of an intraoperative colonization of cells from a well-encapsulated subcapsular oncocytic adenoma in an elderly woman, nine years after total thyroidectomy. In our case, an important etiological aspect was the multiple interruptions of the thyroid capsule described in the histological examination that occurred during the first surgical procedure.

This represents an extremely rare pathological condition, the second one reported in the worldwide literature, suggesting that clinicians should be well aware of to ensure proper patient management.

Provenance and peer review

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Ethical approval

Ethical approval has been given.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

- Conceptualization: G.D.

Fig. 1. Clinical appearance of yellowish nodules at the post-thyroidectomy scar.
Data curation: G.D., F.F., A.P. and V.C.
Patient management: G.D., F.F., A.P. and V.C.
Writing - original draft: F.F., A.P. and A.I.
Writing - review & editing: G.D., F.F. and G.F.
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Declaration of competing interest
All authors declare no conflicts of interest.

Appendix A. Supplementary data
Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijscr.2022.106935.

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