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## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/16648  
DOI URL: <http://dx.doi.org/10.21474/IJAR01/16648>



### RESEARCH ARTICLE

#### SINGLE RIB METASTASIS OF THYROID FOLLICULAR CARCINOMA: ABOUT 02 CASES

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#### Manuscript Info

##### Manuscript History

Received: 10 February 2023  
Final Accepted: 14 March 2023  
Published: April 2023

##### Key words:-

Ribs Metastasis, Follicular Thyroid Carcinoma, Surgery

#### Abstract

Follicular carcinoma is the second most common histological type of thyroid carcinoma and has a particular tropism for the bone. However, costal metastases remain rare events. We report two cases of unique costal metastases, the first of which is indicative and the second a late recurrence of thyroid follicular carcinoma. We performed in both cases a complete removal with parietal reconstruction followed by radioiodine therapy. No recurrences were recorded after 06 months of follow-up. This demonstrates the importance of surgery in the management of oligometastases during follicular thyroid carcinomas for better long-term results.

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#### Introduction:-

Chest wall tumours represent a heterogeneous group of lesions whose diagnosis and treatment are a real challenge. They represent less than 5% of thoracic malignancies and can be of primary or secondary origin. In the latter case, they follow a haematogenic, lymphatic or trans diaphragmatic release (1). Thyroid cancers (TCs) are osteophilic cancers, particularly thyroid follicular carcinoma (FTC), which is described as the histological type with the most bones metastases (BM), approximately 7-28% (2). In 50 -80% of cases the BM are multiple during the FTC (3). The coast represents the 6th site of occurrence of BM which makes it a rare location (4). The presence of bone meta and a large tumour volume are factors limiting the effectiveness of Iodine 131 radiation therapy (5). Thus, the proper management of patients with BM consists of surgical excision, Iodine 131 radiation therapy, external radiation therapy and see therapeutic trials. For isolated bone metastases it is recommended to perform complete surgical removal for long-term overall survival benefit in patients (6). Here we report two cases of patients >65 years of age with isolated costal metastases of FTC in their oncocyctic form who received complete surgical excision followed by adjuvant treatment.

#### Cases Series

##### Case 1

In our unit, we received patient E. F, 68 years old, with no contributory medical history, who had a left lower retro breast swelling accidentally discovered during a health campaign. At her initial clinical examination, she also had a thyroid-like anterior cervical swelling developing for about 06 months, without cervical lymphadenopathy, described in the cervical ultrasound as a multi-heteronodular goitre with nodules (02 rights measuring 2.45x2.21 and 2.94x1.91cm respectively and 01 left measuring 1x0.67cm) classified EUTIRADS 5 on the right and 3 on the left. His thyroid status was 0.87mUI/L and his Thyroglobulin was >500 ng/ml. She received a primary lobo isthmectomy whose extemporaneous examination revealed a suspicious vesicular lesion. As a result, a total thyroidectomy with bilateral central curagewas performed. The anatomopathological examination and immunohistochemistry of the

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operating room were in favour of follicular carcinoma in its oncocytic variant with capsular invasion without vascular invasion whose tumour focus measured 2cm long axis and classified pT1b according to the 2017 pTNM classification. In a second time the patient was referred to thoracic surgery for management of the left retro-breast mass which was hard, fixed in the deep plane, about 6cm long axis next to the inferior-external quadrant and not painful at the clinical examination. At the chest-abdominal-pelvic CT scan, it was a large posterior parietal tissue tumour mass left breast measuring 63x73mm centred by a lytic lesion blowing from the anterior arch of the 6th left rib with anarchic bone tissue without lesion of the pulmonary parenchyma, pleura, mediastinum, or abdominal pelvic stage (Figure 1). A trucut biopsy of this mass revealed fibrofatty and muscular tissue containing pseudo-thyroid vesicles without mammary parenchyma requiring an immunohistochemical complement. The immunohistochemistry carried out at the time confirmed the thyroid origin of the tumour proliferation with a positive immunolabeling for the Antibodies anti- Pan-cytokeratin, anti-TTF1, anti-PAX8 and negative for the Antibodies anti-GATA-3. In front of these data a complete excision of the mass in monobloc taking away the coast with reconstruction of the defect by a polypropylene plate surmounted by a metal bar with 12 holes is made. The surgical follow-up was simple. Subsequently, the patient was referred to radiotherapy where she started Iodine 131 radiation. At 6 months post-operative and management, the patient shows no recurrence or complication as evidenced by the control imaging.

### Case 2

We report the case of a 70-year-old woman, hypertensive under treatment, who had received a total thyroidectomy 25 years ago and was put on Levothyroxine 75 mg. She had left parietal swelling that had been developing for about 04 years, initially presenting with basithoracic pain associated with a dry cough without haemoptysis and a progressive alteration of the general condition with unencrypted weight loss. The thoracic CT showed a left intra-thoracic mass of tissue density, containing small calcifications, well limited oval, peripheral, measuring 65x45mm, causing a lysis of the 7th rib and extending outside the chest wall, without parenchymal abnormality, pleural or mediastinal (Figure 2). A CT-guided biopsy revealed thyroid vesicular structures with no obvious cytological abnormalities. An excision of the mass in monobloc with reconstruction of the defective by a polypropylene plate surmounted by a metal bar with 12 holes is made (Figure 3). The surgery was simple. Pathological examination of the operating room confirmed metastasis of infiltrating thyroid follicular carcinoma. The patient was referred for radiotherapy for additional management. She is now at 6 months of post-operative management and does not report any abnormalities or recurrence to the control scanner.

### Discussion:-

Bones metastases (BM) are found in all histological types of thyroid carcinoma (CTs) with a prevalence around 2-15% according to published case series(7,8). Thyroid follicular carcinoma (FTC) shares with medullar carcinoma (MCC) the highest prevalence of bone metastases, respectively (7-28%) and (16-19%); compared to papillary carcinoma (CTP) around (1.4-7%) (2). The costal location of TC BM appears to be the 6th location (after the limbs, spine, skull, pelvis and sternum) described in the Kallel et al series in patients with multiple metastases during differentiated thyroid carcinomas (5). Very few cases of single costal metastasis have been described (1,9-11). The hematogenic nature of FTCs and its preference for areas with high blood flow such as bone marrow would explain these remote locations (1,9). In 52.2% of cases bone metastasis presents as the first manifestation of FTC (8) as was the case in the first patient we described. Rare are the cases where this metastasis develops years after thyroidectomy. Kara et al nonetheless reported in 2021 a case of costal metastasis of FTC 10 years after thyroidectomy (1). Our second case occurred about 25 years after our patient received a thyroidectomy.

Bone metastases during CTs are discovered on average around the age of 60 with a female prevalence which was the case for our patients (3). The female sex is also reported to be a factor of good long-term overall survival for bone metastasis(1,9,10). They are rarely symptomatic. However the manifestations when present, are marked by pain, a pathological fracture(4) as was the case in our patients.

Initial management of bone metastases consists of iodine-131 radiation therapy and/or external radiation. However, this modality showed limitations in the reduction of metastases due to a lack of absorption by these tumours(12-14). For this purpose, surgical excision appears as an adequate initial modality before any other adjuvant treatment as regards the improvement of the quality of life, the long-term prognosis of the patient and especially the response to these adjuvant treatments. This method is all the more beneficial when pathological fractures exist and must be considered when the metastasis is unique and operable. Thus, we performed a complete removal of these bone metastases in our patients with parietal reconstruction by a polypropylene plate surmounted by a metal bar to fill the

parietal defect. This process has the advantage of improving the quality of life of patients, the response to the adjuvant treatment but also of promoting a better long-term overall survival with less recurrences.

In these reported cases, we described two patients >60 years of age with a rare costal location of an FTC in its oncocytic variant who benefited from complete removal of the metastases as well as adjuvant treatment by iodine 131 radiation therapy. At 6 months post management, patients are well without local or remote recurrence or complication.



Figure 1:- Axial slice CAT scan showing the left retro mammary mass with lysis of the 6th rib.

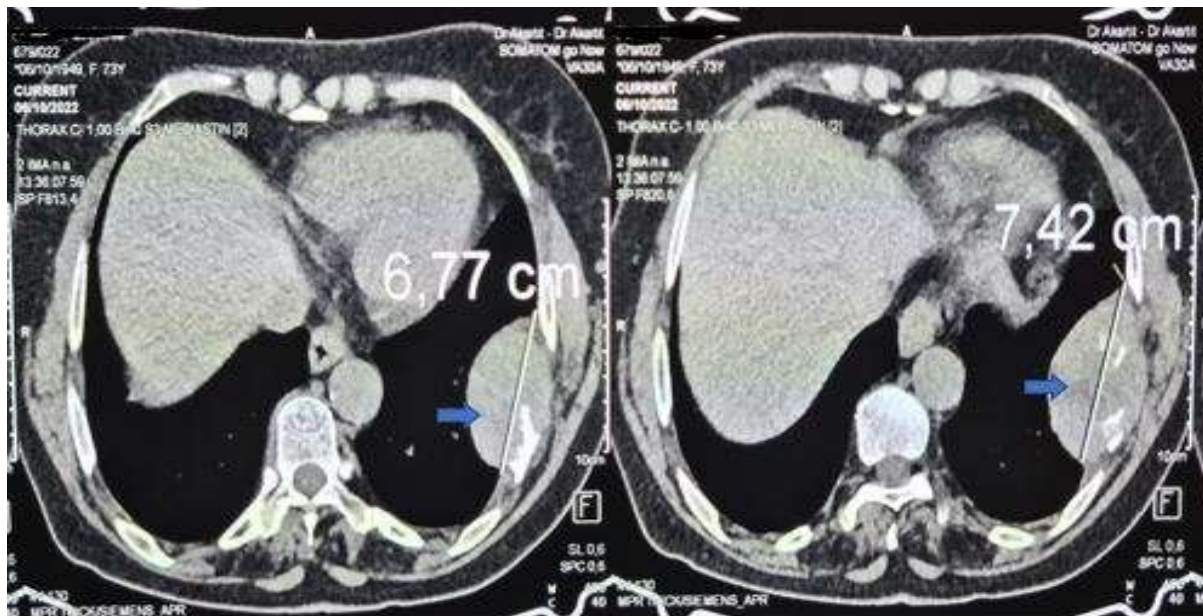
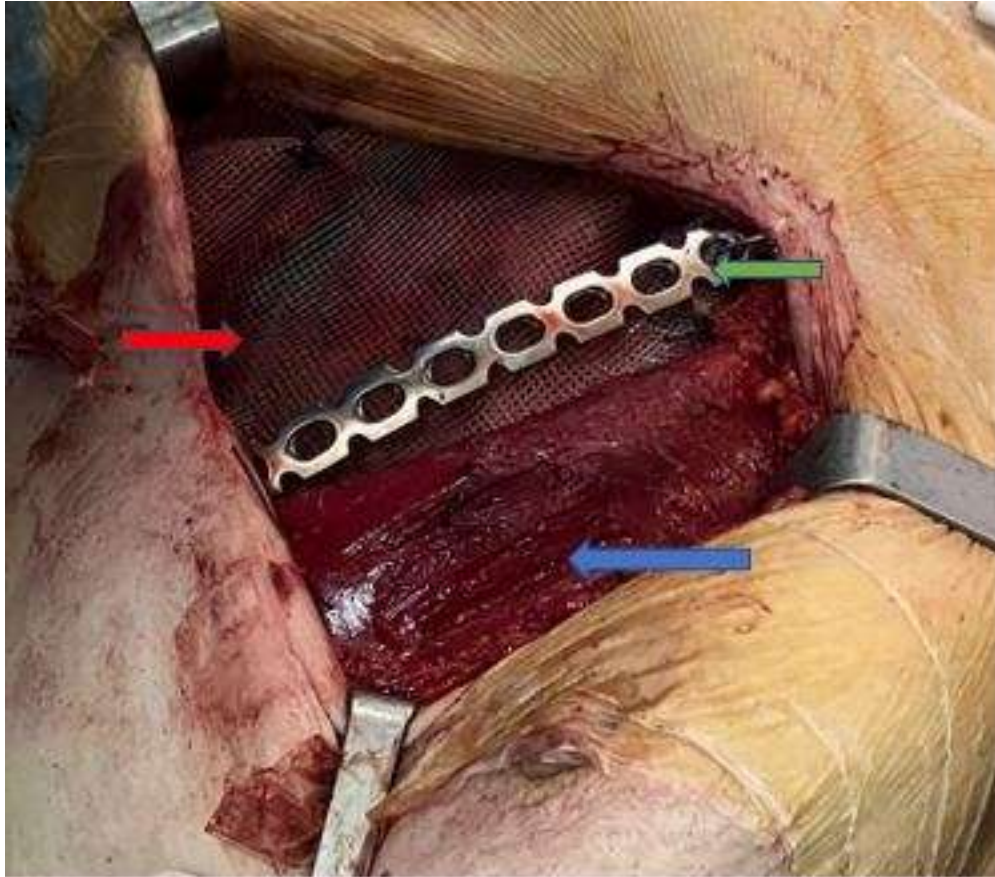


Figure 2:- Thoracic CT in axial section, mediastinal window showing the costal mass with lysis of the 7th left rib.



**Figure 3:-** Intraoperative view of the parietal reconstruction of the defect after removal of the mass.

**Acknowledgments:-**

Not applicable.

**Conflicts of interest:**

The authors declare that they have no conflict of interest.

**Funding:**

This study did not receive any specific funding

**Ethical approval:**

No ethical approval was required for these reports

**Consent:**

Written consent was obtained from the patient for publication

**Guarantor:**

Walid EL HARICH.

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