

# Follicular carcinoma thyroid metastasis

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ABSTRACT

Thyroid cancer is much more common than it was a few decades ago, with an estimated incidence of 20.0 occurrences per 100,000 women and 6.3 cases per 100,000 males in 2012. In Portugal and South Korea, thyroid cancer is already the third most prevalent cancer in women. In South Korea, thyroid cancer is currently the most common kind of cancer diagnosed. The likelihood of surviving for five years is high—more than 85%. But when differentiated thyroid carcinoma (DTC) is diagnosed, 1-4% of patients have distant disease, and 7-23% go on to develop metastatic illness. The patient's chance of life for 10 years is reduced by 50% by these metastases, which mostly affect the lungs and bones. Overall, 2-13% of individuals with DTC develop bone metastases (BM). The development of skeletal-related events (SRE), such as pathologic fractures, spinal cord compression, or the requirement for surgery or radiation, is another possibility for individuals with BM. This might worsen the prognosis and lower the patient's quality of life. Due to a number of characteristics, such as increased blood flow in regions with red marrow, the bone is a tissue that has a high propensity for metastases. The histological type most often linked to BM in the literature is follicular thyroid cancer (FTC). Radioiodine therapy (RAIT), surgery, radiation, and bisphosphonates are all possible treatments for BM.

**Keywords:** Distant metastasis;Follicular carcinoma; Pelvic Muscle; Thyroid; Follicular; Thyroid carcinoma; Metastasis; Iliac wing

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## INTRODUCTION

Rarely are distant thyroid neoplasm metastases the first manifestation. In the current case report, a 75-year-old woman who had symptoms of a pelvic tumour was accidentally diagnosed with follicular carcinoma thyroid (FCT) metastases. Only three instances have been documented at the first diagnosis, making this an unusual place for reporting. As the most significant prognostic indication (associated with a 50% death rate), the existence of distant metastases must be determined. This is important because it directly affects how the patient is treated and managed. Therefore, both diagnosticians and physicians need to be more aware of this.

In our geographical location, thyroid cancer is rare. When it does, papillary thyroid carcinoma, a differentiated thyroid carcinoma, is the most common histological form, followed by follicular thyroid cancer. Compared to undifferentiated thyroid carcinomas, differentiated thyroid carcinomas often have an excellent prognosis. A single thyroid nodule, either with or without cervical lymphadenopathy, is how follicular thyroid cancer often manifests. A 57-year-old woman who has experienced anterior neck swelling for five years and been unable to walk using her left lower leg for two years is presented. A modified neck dissection and total thyroidectomy were performed. The findings of the histopathology test showed follicular thyroid cancer. After surgery, the patient got radio-chemotherapy treatment. A symptomatic distant metastatic bone lesion may be present with follicular thyroid cancer in the form described. Clinicians should be aware of this and do confirmatory related examinations [1-5].

With only 1% of all malignant neoplasms being thyroid cancer, it is a very uncommon condition that affects around 0.5% of men and 1.5% of women. Differentiated thyroid cancers (DTC), hürthle-cell carcinomas, undifferentiated carcinomas, and medullary carcinomas are only a few of the thyroid cancers that have been classified according to their histological types. Papillary (70–75%) and follicular (15–20%) thyroid tumours are both differentiated, accounting for around 90% of thyroid cancer cases. Papillary DTC can metastasis to the lungs and bones but is characterised by indolence and localised spread. Hematogenous spread is known to favourably cause follicular DTC to metastasis to the lungs and bones. 2.3–12.7% of DTC patients have been found to develop bone metastases. The red marrow regions of the axial skeleton, which include the vertebrae (42-52%), femur (9-20%), head (2-16%), and pelvis (5-13%), are where most bone metastases happen. Although thyroid carcinomas are the most prevalent malignant endocrine neoplasm, they only make up 1% of all thyroid

cancer cases overall, with 10–20% of them being follicular carcinoma. In 1-3% of patients, distant metastases are the first presentation. These cases have a dismal prognosis (10 year survival rate of 50%). Despite receiving therapy, many individuals (7–23%) also experience the development of distant metastases. The follicular type of thyroid cancer is known to often metastasize not just to the lung and bone but also to uncommon locations such as the suprarenal and pelvic soft tissue. Other uncommon sites include the brain, breast, liver, kidney, muscle, and skin. The existence of distant metastases must be determined since it is the most crucial prognostic factor for 10-year survival (related with 50% mortality). No distinctive complaint is often elicited in cases with soft tissue and muscle metastases, except from the symptoms brought on by the pressure the expanding neoplastic mass puts on the surrounding tissues. Despite the fact that muscles can make up much to 40% of a person's total body weight, distant metastases in the skeletal muscle are incredibly uncommon in hemogenous dissemination. Only a few numbers of occurrences, particularly in the erector spinae and biceps muscle, have been documented. According to some theories, the environment for cancer metastases in muscles is rather unfavourable due to a variety of characteristics including fluctuating muscle pH, muscular mobility, and the body's capacity to eliminate lactic acid from tumours [6-10].

Following the spine, the pelvis is the area of the body where metastatic bone lesions occur most frequently. Pelvic metastatic tumours can be painful and significantly reduce function and weight-bearing ability. Tumours at that location typically grow to a size that is noticeable before symptoms appear because of the pelvic cavity's size relative to other body cavities, the elasticity of the organs it contains, and the muscles that surround it. While some metastases within the pelvis (such as the ilium and pubis) have no effect on pelvic stability and function, lesions of the posterior ilium may endanger lumbosacral integrity, and lesions affecting the acetabulum may severely impair hip function and the ability of the lower extremity to bear weight. One of the most treatable cancers is DTC.

DTCs are distinguished by a gradually progressing course and have an 80–95% 10-year survival rate. However, the total 10-year survival rate drops to 40% in the presence of distant metastases. According to earlier research, 25% of metastases occurred in the bone, 49% in the lung, and 15% in both. Bone metastases have been documented in 2-13% of DTC patients, with follicular cancer patients reporting them more frequently (7-28%) than papillary cancer patients (1.4-7%). Ten-year survival rates for patients with thyroid cancer with bone metastases range from 0% to 34%. Complete excision of DTC bone metastases has been linked to a notable increase in survival.

## CONCLUSION

After the spine, the pelvis is where metastatic bone involvement occurs most frequently. Pelvic metastases may be painful and significantly reduce function and weight-bearing ability. Tumours at that location typically grow to a size that is noticeable before symptoms appear because of the pelvic cavity's size relative to other body cavities, the elasticity of the organs it contains, and the muscles that surround it. While some locations of metastases within the pelvis (such as the ilium and pubis) have no effect on pelvic stability and function, tumours of the posterior ilium may threaten the integrity of the lumbar-sacral system, and tumours of the acetabulum may significantly impair hip function and the ability of the lower extremity to bear weight. Therefore, it is advised that DTC patients' uncommon metastases be given attention. When metastases are discovered in unexpected locations, the probability of DTC should be kept in mind because there are currently therapy options that might improve the prognosis. This is significant since it directly affects the diagnosis of the illness, its treatment, and the patient's care. Therefore, both diagnosticians and physicians need to be more aware of this. The case described here is noteworthy for publication because it describes a rare manifestation of thyroid cancer metastases and emphasises the significance of understanding the pattern of thyroid cancer spread in all such uncommon places.

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