

Follicular Carcinoma of the Thyroid Presenting as Back Pain and Paravertebral Mass

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Follicular carcinoma comprises 15% of all thyroid cancers. It often presents as a thyroid mass, which appears as a "cold" nodule on a thyroid scan. Rarely, the presentation is distant metastases to the lungs or bones. We report two patients with an even rarer presentation – low back pain and a paravertebral mass. Computed tomography-guided biopsy in the first patient, and orthopedic surgery in the second, established the diagnosis of follicular cell carcinoma of the thyroid.

Case Descriptions

Patient 1

A 71-year-old man was admitted to the Department of Internal Medicine B, Hasharon Hospital, in 1996 for evaluation of low back pain, paresthesias and neurological deficits. The pain had started 4 years prior to admission and had been treated conservatively by an orthopedic surgeon.

A few weeks prior to admission, the patient complained of paresthesias in both legs, and later could not move his left leg to walk. An urgent CT scan revealed a paravertebral mass at the level of L1-3 (7x14 cm), involving the psoas and the paraspinal muscles. The mass displaced the kidneys laterally and caused destruction of the L1-3 vertebral bodies. Another mass was found at the level of L4 and L5-S1 (7.5x9 cm), destroying the vertebral bodies and the left aspects of the sacrum and ilium. Both masses penetrated into the spinal canal. At this point his orthopedic surgeon referred the patient to our service with a tentative diagnosis of multiple myeloma.

The patient's past medical history as well as his family history were unremarkable. Physical examination revealed a mild slightly enlarged thyroid, and tenderness over the region of the second to fourth lumbar vertebrae, bilateral atrophy of the quadriceps muscle, increased patellar reflexes and a restriction of straight leg raising (Lasegue's sign). The erythrocyte sedimentation rate was 80 mm Westergren, but a complete blood count and routine serum chemistry were normal. Serum free thyroxine was 5.1 ng/dl (normal range 0.9-2.2), thyroid-stimulating hormone 0.02 mIU/L (0.17-2.9) and total triiodothyronine 2.3 ng/ml (0.7-1.7). An immediate CT-guided biopsy established the diagnosis of metastatic follicular carcinoma of the thyroid. Chest X-ray and CT scan showed a right retrosternal goiter and two nodules in the right lung base suspected to be metastases. Emergent paravertebral irradiation therapy was followed by a dramatic improvement. The patient was scheduled for total thyroidectomy and radio-iodine treatment and was prescribed preparatory potassium iodine treatment. Two days before surgery a resistant paroxysmal atrial fibrillation developed, which progressed to congestive heart failure and led to the patient's death.

Patient 2

A 74-year-old woman was admitted to our department in 1996 for moderate back pain, radiating anteriorly as a belt, but no limb weakness. Her past medical history revealed acute myeloid leukemia (M1-2) 3 years before which was treated with Ara-C and daunor-

ubicin followed by complete remission. Routine follow-up and bone marrow biopsy had been normal shortly before the present admission.

On physical examination there was tenderness over the ribs, thoracic and lumbar spine and no neurological deficits. Gynecological examination was normal. ESR was 12 mm Westergren, routine complete blood count and serum chemistry were normal, as were thyroid function tests. CT scan and magnetic resonance imaging demonstrated a mass (4.5x4.5 cm) occupying the bodies of T7, T8 and T9 and compressing the spinal cord on both sides. Bone scan detected abnormal uptake in T7-8 and in the first left rib. Ultrasonography of the thyroid gland showed two solid calcified masses (2x2 cm) and a rich vascular supply to both masses, interpreted as multinodular goiter.

An extensive orthopedic procedure was performed, from an anterior approach and involving corporectomy of T9-10, excision of the mass, and fusion of T7-10. Histologic evaluation confirmed the diagnosis of follicular carcinoma that involved the left lobe and the isthmus. A total thyroidectomy was performed, followed by radio-iodine treatment. After 6 months of rehabilitation the patient regained her walking ability, and is free of disease.

Comment

Thyroid carcinoma is the most commonly diagnosed endocrine malignancy, although it accounts for less than 1% of all human cancers [1]. The

ESR = erythrocyte sedimentation rate

follicular type, comprising about 15% of thyroid carcinoma, tends to occur in older patients. The mean age at presentation is 47 in females and 51 in males. Histologically it resembles normal thyroid epithelium, it is encapsulated and differs from benign adenomas by capsular or vascular invasion. An aggressive subtype, Hurthle cell tumor, tends to be more invasive, metastasizes often to bone, and has a poor prognosis [2].

Poor prognostic factors are considered to be age over 40 at presentation, tumor size above 1.5 cm, extrathyroidal tumor invasion, and distant metastases [1–3]. Some authors refer to the degree of vascular invasion as a prognostic factor [4]. Treatment includes total thyroidectomy, followed by radioiodine treatment [1]. Some authors advocate the use of large radioiodine doses and external beam radiotherapy for patients over 45 years old or tumors above 2.5 cm in size [3]. The expected survival rate is 90% at 5 years and 85% at 10 years [1]. Interestingly, patients with follicular carcinoma of the thyroid had recurrences and even died after 13

years follow-up. If they survived this period, they were apparently disease free [3]. Distant metastases are present at diagnosis in 5–8% of patients with follicular carcinoma of the thyroid; however, the presentation of paravertebral masses is rare, with only a few cases reported [5].

The patients described here presented with back pain (lasting 4 years in the first case and 6 weeks in the second) and a paravertebral mass. Neither patient had symptoms or signs typical of thyroid disease prior to diagnosis, and in the second patient the thyroid function tests were normal. These cases indicate the importance of a high degree of suspicion regarding another cause of prolonged back pain – follicular carcinoma of the thyroid, presenting as a paravertebral mass, although it is a rare disease. It is likely that the shorter course in the second patient led to the better outcome; however, an earlier diagnosis could have prevented the neurological outcome. In summary, back pain in rare instances may be caused by metastatic

disease of the thyroid. Early diagnosis is mandatory in this potentially curable disease.

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The biggest mistake in politics is to take your friends for granted and try to buy your enemies.

Harry Truman, 33rd American President (1884–1972)

Capsule



Stress as a predictor of genital herpes recurrence

Results of several studies suggest that psychological stress and negative mood can trigger genital herpes recurrences, but results are inconsistent. To determine whether short-term or persistent psychological stress or specific negative moods are predictive of genital herpes recurrences in women, a prospective cohort study followed participants for 6 months using weekly assessments of stress and mood, monthly assessments of life change events, and diary reports of genital herpes recurrences confirmed by medical examination when feasible. The community sample consisted of 58 women, aged 20–44 years, with a 1 to 10 year history of visible genital herpes recurrence and at least one recurrence in the previous 6 months.

The results showed that persistent stress predicted recurrence in the subsequent week. After adjusting for recurrence in the previous week, the more weekly persistent stress reported the greater the likelihood of recurrence the following week. Also, an increased recurrence rate occurred after the month during which participants experienced their highest levels of anxiety ($P=0.03$). There were no significant associations between recurrence and short-term stress, life events, depressive mood, anger, or phase of menstrual cycle.

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