

# Unusual Clinical Course of Papillary Thyroid Microcarcinoma: Metastases of Bone and Lung

## *Papiller Tiroid Mikrokarsinomunun Nadir Görülen Klinik Seyri; Akciğer ve Kemik Metastazı*

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### Abstract

Papillary thyroid microcarcinomas are slow-growing tumours; distant metastases causing mortality is very rare. Case presentation We report the case of a 35-year-old woman with lung and bone metastases of a multifocal papillary thyroid microcarcinoma (PTMC). She had undergone a subtotal thyroidectomy due to euthyroid multinodular goitre without fine needle aspiration biopsy. Iodine-131-whole body scan showed markedly iodine retention in the neck, lung and pelvis. Chest computed tomography (CT) and Pelvic magnetic resonance imaging (MRI) confirmed metastases in the lung and ischium pubis. She underwent completion thyroidectomy and bilateral neck dissection. She is going to have high dose radioactive iodine ablation therapy after resection of bone metastases. Conclusion: It should be considered that patients with papillary microcancer can rarely show aggressive clinic. *Türk Jem 2011; 15: 20-2*

**Key words:** Papillary thyroid microcarcinoma, metastases

### Özet

Papiller tiroid mikrokarsinomu yavaş büyüyen bir tümör olup; uzak metastaza bağlı ölüm çok nadirdir. Vaka sunumu 35 yaşında papiller tiroid mikrokarsinomu olan, akciğer ve kemik metastazlı bayan hastayı sunduk. Hastaya tiroid ince iğne aspirasyon biyopsisi yapılmaksızın ötiroid multinodüler guatr nedeni ile subtotal tiroidektomi uygulanmıştı. İyot -131 ile yapılan tüm vücut iyot taramada pelvis, akciğer ve boyunda belirgin olarak iyot tutulumu izlendi. Akciğer bilgisayarlı tomografisi ve pelvis manyetik rezonans görüntüleme ile akciğer ve ishium pubisdeki metastazlar doğrulandı. Hastaya tamamlayıcı tiroidektomi ve bilateral boyun disseksiyonu uygulandı. Kemik metastazının çıkarılmasından sonra yüksek doz iyot 131 tedavisi verilmesi planlandı. Sonuç Papiller mikrokanserli hastaların nadirde olsa agresif klinik seyir gösterebileceği göz önünde bulundurulmalıdır. *Türk Jem 2011; 15: 20-2*

**Anahtar kelimeler:** Papiller tiroid mikrokarsinomu, metastaz

### Introduction

Thyroid cancer is among the most common of endocrine malignancies. Despite the incidence of differentiated thyroid carcinoma has increased over the past 3 decades, the outcome remains excellent with cancer specific survivals of 98.6%, 94.7% and 87.4% at 5, 10 and 15 years respectively (1). The papillary histotype, being the most frequent (nearly 80%). Papillary thyroid microcarcinoma

(PTM) is defined by the WHO as a PTC 1.0 cm in diameter or smaller (2). Although most PTM are good clinical course, distant metastases and mortality can be occasionally seen (3). At the time of diagnosis, PTM is more often intrathyroid or spread only to cervical lymph nodes because of its typical slow-growing pattern. Metastases are mainly to regional lymph nodes and, less frequently, to the lung and bone [4]. We report the case of a 35-year-old woman with lung and bone metastases of a multifocal PTM, detected with

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a whole body iodine scan (WBS), computed tomography (CT) and magnetic resonance imaging (MRI).

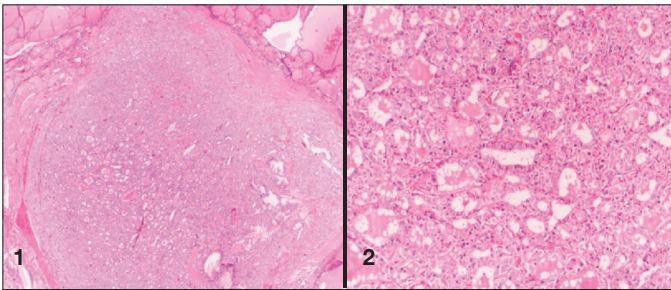
### Case Presentation

A 35-year-old woman consulted our outpatient clinic of endocrinology. She was clinically asymptomatic. She had undergone a sub-total thyroidectomy due to euthyroid multinodular goitre without fine needle aspiration biopsy. The histological examination demonstrated multifocal PTM (follicular variant, maximum diameter 0.7 cm). There was no vascular or capsule invasion, or extrathyroidal extension. (Figure 1-2) Her serum thyroglobulin level (Tg) was 1000 ng/ml (0.2-70) when thyroid-stimulating hormone (TSH) level was 38 uIU/ml (0.34-5.6). Thyroglobulin antibodies were negative (0.8 IU/ml, normal range: 0-4). Thyroid and neck ultrasonography showed residual thyroid tissue and lymphadenopathy. Iodine-131-whole body scan showed markedly iodine retention in the neck,

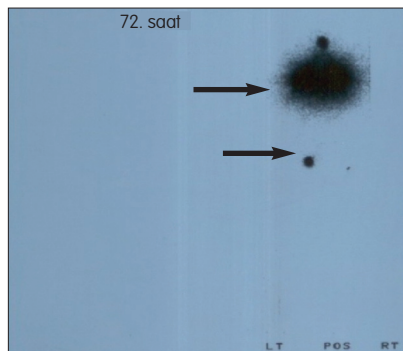
lung and pelvis (Figure 3). Chest CT showed multiple metastases in the lung (Figure 4). Pelvic MRI demonstrated a 5 cm mass in the ischium pubis (Figure 5). Ischium pubis metastases confirmed with bone scintigraphy (Figure 6). She underwent completion thyroidectomy and bilateral neck dissection. Lymph node (LN) metastases were determined only at santral lenph node compartment. She is going to have high dose radioactive iodine ablation therapy after resection of bone metastases.

### Discussion

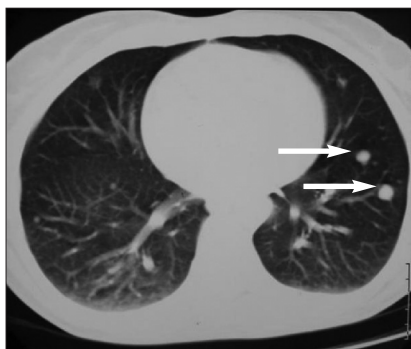
Papillary thyroid microcarcinoma is defined as papillary carcinoma measuring 1 cm in greatest dimension according to the World Health Organization classification system for thyroid tumors (2). Papillary thyroid microcarcinomas are slow-growing tumours; distant metastasis are very rare, mainly because of the predominantly lymphogenic metastasizing pattern observed in this tumor type. Papillary thyroid carcinoma have a good overall prognosis after total thyroidectomy, radioiodine ablation and levothyroxine suppression therapy. Several studies revealed zero mortality (5-6). In a meta analysis published in 2008 mortality rate associated with cancer was only 0.34% (7). But, PTM can be lethal, because small numbers of patients develop locoregional recurrences and distant metastases (3,7,8). In a meta analysis with 9379 patients local/lenf node recurrens rate was 2.4% and distant metastasis rate was 0.27% (7). We reported an unusual case of PTM associated with metastases to the lung and ischium pubis at the time of the diagnosis.



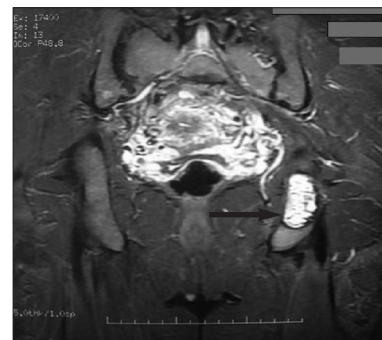
**Figure 1-2.** Histopathologic examination demonstrated papillary thyroid microcarcinoma with follicular variant



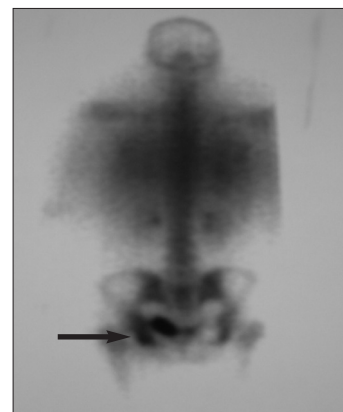
**Figure 3.** Iodine-131-whole body scan showed markedly iodine retention in the neck, lung and pelvis (Postero-anterior)



**Figure 4.** Chest CT showed multiple metastases in the lung



**Figure 5.** Pelvic MRI demonstrated a 5 cm mass in the left ischium pubis. (T2A, hiperintens lesion)



**Figure 6.** Whole body bone scintigraphy demonstrated a metastases in the left ischium pubis (postero-anterior)

Poor prognostic factors of PTM include that LN involvement at presentation, large tumor size, older age, male sex, multifocality and the presence of extrathyroidal extension (7-9). However, these factors are not entirely reliable in predicting the tumor recurrence, metastasis, or cancer-related death. Our patient have distant metastases and multifocality she have PTM, female sex, and younger age. Presence of metastases in distant sites other than lungs, such as bones, brain or liver, is an important unfavorable prognostic factor (9-10). Distant metastases of a PTM is very rare (3). For metastatic diseases from differentiated thyroid cancer (DTC), a 10-year survival was reported as 13%-61% (9,10) whereas DTC shows a 10-year overall survival rate %74-93 (11). Distant metastases usually involves the lung or the bones. Patients with lung metastasis have three major prognostic factors: the size of lung metastases, lung capability of uptaking radioiodine and the presence of metastatic foci in distant sites other than lungs (12). The increase in size of lung metastatic foci and their loss of capability in uptaking radioiodine were responsible for an evident worsening in prognosis (12). Bone is the second most common site of metastasis resulting from thyroid cancer after lung. Multisite metastasis is generally considered to be associated with decreased survival (13,14). Our patient have single bone lesion and multiple nodular lung metastases. But, the markedly iodine retention in the lung of WBS. This is a positive prognostic condition in our patient.

## Conclusions

Papillary thyroid microcarcinoma can rarely show aggressive clinic. Therefore all patients who will undergo surgery for nodular guatr should be evaluated by US and FNAB preoperatively to detect the optimal surgical procedure.

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