



Intrathyroidal Parathyroid Adenoma

İntratiroidal Paratiroid Adenomü

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Abstract

Intrathyroidal parathyroid adenoma is a rare anomaly with an incidence of 1.4-6%. A cause of failure in the therapeutic management of hyperparathyroidism is the ectopic localization of the adenoma, particularly intrathyroidal. This is the case of a 51-year-old patient with no particular pathological history who presented with neck pain and whose clinical examination revealed a goiter. Parathyroid myocardial perfusion imaging (MIBI) scintigraphy revealed an elective MIBI-fixing focus with an upper left polar projection compatible with a parathyroid origin. A left lobectomy was performed. Anatomopathological study showed a parathyroid adenoma associated with dystrophic thyroid parenchyma, with no obvious histological signs of malignancy. Post-therapeutic laboratory work-up was normalized. Parathyroid adenoma, intrathyroidal, is an uncommon lesion but may be responsible for therapeutic failure in hyperparathyroidism. MIBI parathyroid gland scintigraphy is the gold standard for the diagnosis of parathyroid ectopy.

Keywords: Intrathyroidal parathyroid adenoma, parathyroid ectopy, MIBI scintigraphy

Öz

İntratiroidal paratiroid adenomu nadir görülen bir anomali olup görülme sıklığı %1,4-6'dır. Hiperparatiroidizmin terapötik tedavisindeki başarısızlığın bir nedeni, adenomun ektopik lokalizasyonu, özellikle intratiroidal olmasıdır. Burada, özel bir patolojik geçmişi olmayan, boyun ağrısı şikayetiyle başvuran ve klinik muayenesinde guatr tespit edilen 51 yaşında bir hasta sunulmaktadır. Paratiroid miyokardiyal perfüzyon görüntüleme (MIBI) sintigrafisi, paratiroid kökeniyle uyumlu projeksiyonlu MIBI tutulum odağını ortaya çıkardı. Sol lobektomi yapıldı. Anatomopatolojik çalışma, belirgin bir histolojik malignite belirtisi olmayan, distrofik tiroid parankimi ile ilişkili bir paratiroid adenomunu gösterdi. Tedavi sonrası laboratuvar çalışmaları tamamlandı. İntratiroidal paratiroid adenomu nadir görülen bir lezyondur ancak hiperparatiroidizmde tedavi başarısızlığından sorumlu olabilir. MIBI paratiroid bezi sintigrafisi paratiroid ektopisinin tanısında altın standarttır.

Anahtar kelimeler: İntratiroidal paratiroid adenomu, paratiroid ektopisi, MIBI sintigrafisi

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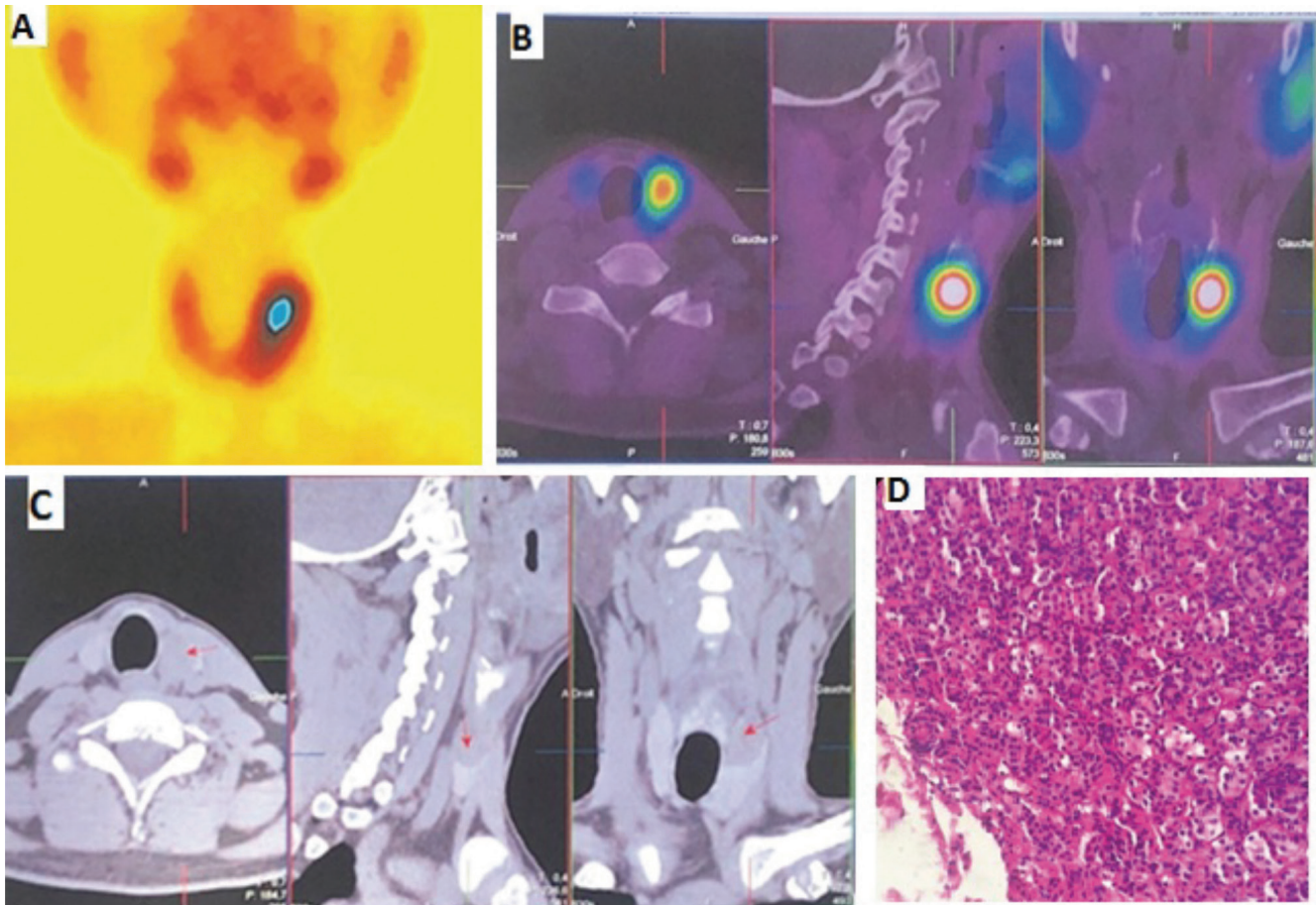


Figure 1. This is the case of a 51-year-old patient, with no particular pathological history, who was consulted for cervical pain and swelling. Clinical examination revealed cervical goiter. Biological workup showed a profile characteristic of hyperparathyroidism, with parathyroid hormone (PTH) elevated to 922.3 pg/mL, hypercalcemia to 152 mg/L, and hypophosphatemia to 10 mg/L. Cervical ultrasound revealed a normal-sized thyroid gland with a left upper lobar thyroid nodule classified as EU-TIRADS 5 and measuring 1.4x2 cm. Myocardial perfusion imaging (MIBI) scintigraphy revealed an elective MIBI-fixing focus with an upper left polar projection (A) compatible with parathyroid origin. In addition, single-photon emission computed tomography/computed tomography (SPECT/CT) images (B) and CT images (C) confirmed the intra-thyroidal location of the parathyroid nodule. A left lobectomy was performed, and the anatomopathological study showed a parathyroid adenoma associated with dystrophic thyroid parenchyma, with no obvious histological signs of malignancy. (D) Biological tests performed 1 week after surgery showed normal levels, with calcemia =83 mg/L and PTH =61.2 pg/mL.

Hyperparathyroidism is the third most common endocrinopathy, with parathyroid adenoma being the most common etiology. The latter may be located ectopically in 11-25% of cases, secondary to embryonic migration anomalies (1). Intrathyroidal parathyroid adenoma is a rare anomaly with an incidence of 1.4-6%. One of the causes of failure in the therapeutic management of hyperparathyroidism is the ectopic localization of the adenoma, particularly intrathyroidal (2). The diagnosis of the location of the ectopic gland depends mainly on imaging studies, such as ultrasound, CT, magnetic resonance imaging (MRI), Tc-99m-MIBI SPECT/CT, or ^{18}F -fluorocholine positron emission tomography (PET)/CT (3). Tc-99m-MIBI SPECT/CT represents additional advantages in the evaluation of parathyroid adenoma. It can be used to estimate the function of the parathyroid gland and the extent of its hyperplasia is the simplest and most widely used noninvasive method for preoperative determination of the location and position of the gland (4). Numerous studies have confirmed the usefulness of MIBI scintigraphy in the exploration of the parathyroid gland in the management of hyperparathyroidism. In a group of over 1,500 cases, Roy et al. (5) observed a parathyroidectomy success rate of over 95% and the presence of an ectopic parathyroid gland in 6-16% of cases (38% located in the thymus, 31% in the retropharynx and 18% intra-thyroid). In such cases, these authors found MIBI scintigraphy was diagnostically superior, with a sensitivity of 89% compared with ultrasound (sensitivity 59%) (5). Ishibashi et al. (6) recommended that MIBI scintigraphy be performed before any other diagnostic means of localization, such as CT or MRI. This author observed a sensitivity of 70% and a specificity of 88% for scintigraphy, which is superior to CT (40% and 88% respectively) and MRI (60% and 88%) (6). Other studies also point to MIBI scintigraphy as the best performing diagnostic technique, with sensitivity approaching 90% (7). However, MIBI scintigraphy has certain limitations. For example, when parathyroid hyperplasia is not evident, or the focus is too small to be covered by thyroid tissue, or when associated with a multinodular goiter, false-negative results can occur; hence, it is also of interest in the differential diagnosis of benign thyroid disease. Furthermore, when ultrasound and Tc-99m-MIBI SPECT/CT cannot determine intrathyroid nodules, PET/CT may be a better alternative (8).

Ethics

Informed Consent: The patient consent was obtained.

Authorship Contributions

Surgical and Medical Practices: S.Z., M.A.B., A.M., A.Mar., I.Z.T., Concept: S.Z., Design: S.Z., Data Collection or Processing: S.Z., Analysis or Interpretation: S.Z., M.A.B., A.M., A.Mar., I.Z.T., Literature Search: S.Z., Writing: S.Z.

Conflict of Interest: No conflicts of interest were declared by the authors.

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