

Primary hyperparathyroidism presenting as major depression with psychotic features

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Received: 3/5/2019 – Accepted: 5/21/2019

DOI: 10.1590/0101-60830000000219

Kuo J et al. / Arch Clin Psychiatry. 2019;46(6):169-70

Dear Editor,

Primary hyperparathyroidism (PHPT) might associate with multiple neuropsychiatric symptoms, but it is often overlooked by physicians when making differential diagnosis for patients with psychiatric disorders. We report a case of PHPT presenting as major depression with psychotic features.

A 47-year-old previously healthy woman presented with a 2-weeks history of depressed mood, loss of interest, insomnia, poor concentration, fatigue and poor appetite with prominent body weight loss. Besides, blunted affect, prominent psychomotor retardation, occasional irrelevant speech, the delusion of guilt, persecution, and negation were also noted. Under the impression of major depressive disorder, she was treated with escitalopram

20 mg and aripiprazole 10 mg per day. After drug treatment for four weeks, the score of the 17-item Hamilton Depression Rating Scale (HAM-D-17) was decreased from the initial 46 to 35, which didn't reach obvious response (defined by a decrease of scores for 50% or more). The following laboratory tests revealed severe hypercalcaemia of 16.8 (reference, 8.6-10.0) mg/dl, hypokalemia of 2.4 (3.5-5.1) mg/dl, borderline thyroid function with free-T4 of 1.74 (0.93-1.7) ng/dl and thyroid-stimulating hormone of 1.18 (0.27-4.2) μ IU/ml, along with blood urea nitrogen of 26.2 (6-20) mg/dl and creatinine of 1.4 (0.5-0.9) mg/dl.

The diagnosis of PHPT was established by the extraordinarily high level of PTH [911.8 (17-65) pg/ml], and one huge mass at left lower parathyroid gland was subsequently found by echography and Tc-99m scan (Figure 1). The parathyroidectomy was undergone soon,

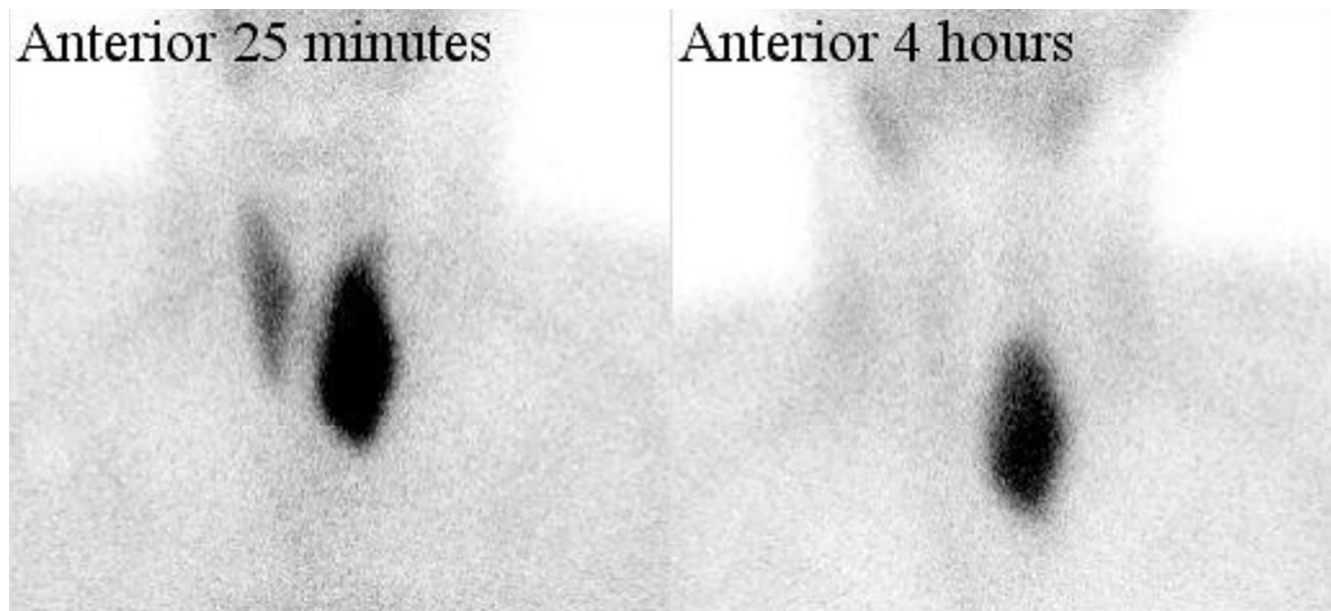


Figure 1. Parathyroid scan with intravenous Technetium-99m methoxyisobutylisonitrile injection revealed a huge parathyroid adenoma in the left lower thyroid region.

and the pathological report disclosed one 5 x 3 x 1.5 cm parathyroid gland with oncocytic and chief cell hyperplasia. Both serum calcium (9.9 mg/dl) and PTH levels (52.57 pg/ml) dramatically decreased to the normal range in one day following the parathyroidectomy. The score of HAMD-17 decreased to 23 in seven days and to 4 in 14 days after the surgery, indicative of complete remission of the depression. Her somatic symptom remitted and her body weight returned back to the same before this episode.

Psychiatric symptoms were reported in 4.2%-10% patients with PHPT^{1,2}, whereas higher prevalence rates of neuropsychiatric disturbances were observed in patients with more severe PHPT necessitating parathyroidectomy³. These prevalence rates include 43.1%-53% for anxiety, 33.0%-62.1% for depression, 22% for thoughts of death or suicide, 51.9% for anger and irritability, 5-20% for hallucination and delusions, and 37.3%-46.6% for impaired cognition³. The occurrence and severity of psychiatric symptoms are associated with increased levels of serum calcium and PTH⁴. The mechanism is presumably related to the low levels of monoamine metabolites and increased calcium levels found in the cerebrospinal fluid¹.

A primary psychiatric disorder is a diagnosis of exclusion. PHPT should be considered as a differential diagnosis for a patient with a psychiatric disorder. To establish the diagnosis of PHPT, some biochemical tests including serum total calcium, PTH, creatinine, 25-hydroxy vitamin D and 24-hour urinary calcium and creatinine are recommended, and certain disorders causing secondary

hyperparathyroidism must be excluded⁴. Parathyroidectomy is the only curative therapy for PHPT, which significantly leads to a reduction of depressive symptoms and an improvement of patients' quality of lives².

Acknowledgment

The authors declare no potential conflicts of interest in writing this report.

Funding

None declared.

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