

# Hypertension, sweating and palpitation in a psychotic patient – don't miss the somatic cause

**Bidisha Chatterjee<sup>1</sup>, Cedric Hirzel<sup>2</sup> and Rahel Gerda Sahli<sup>2</sup>**

<sup>1</sup>Office of Imprisonment of the Canton Berne, Schermenweg 5, Postfach 5059, Bern 3001, Switzerland

<sup>2</sup>Inselspital University Hospital, Inselspital Bern, 3010 Bern, Switzerland

**Corresponding author:** Bidisha Chatterjee. Email: bidisha.chatterjee@pom.be.ch

With the presentation of this case we want to highlight that even in psychotic patients where elevated blood pressure and palpitations are frequent symptoms, excluding underlying somatic conditions is crucial.

## Case report

A 27-year-old man was admitted from prison because of acute psychosis. He was convinced of being part of a conspiracy system, he was not adequate in time and place, but there were no optical or auditory hallucinations.

In his medical history there was a fracture of the right fourth finger, there was no positive family history for hypertension or cancer, he was not under any medical treatment, he was jobless and smoked a lot of cannabis.

On admission the patient was hypertensive (164/95 mmHg) and had a systolic murmur. Physical examination was otherwise unremarkable. Routine laboratory test was normal.

Paliperidone treatment was successfully administered to treat psychosis.

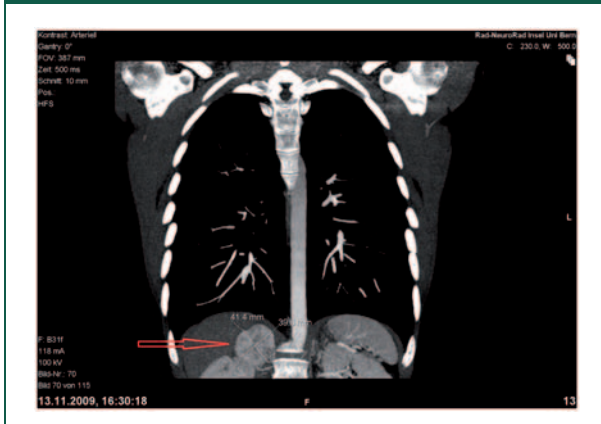
He complained about intermittent palpitations and increased sweating during the night. Because of the sinustachycardia and right-sided thoracic pain in combination with elevated d-dimers a pulmonary CT angiogram was performed. No pulmonary embolism was found but a truncated bilateral hypervascular lesion in both adrenal glands. MRI of adrenal glands showed a tumour measuring 3.4 × 3.7 cm on the right side and another one, measuring 1.1 × 1.3 cm on the left side (Figure 1). Further laboratory tests showed no hypercortisolism or hyperaldosteronism, but catecholamine and vanillin mandelic acid (VMA) levels in the 24-h urine sample (noradrenaline 1438 nmol/mmol Cr (reference <75), normetanephrine 3.48 nmol/mmol Cr (reference <0.18), VMA 17.9 μmol/mmolCr (reference <3.0)) were elevated. Chromogranin A was

considerably elevated (475 μg/l, reference 19–98 μg/l). Metaiodobenzylguanidine (MIBG) scintigraphy showed an intense tracer uptake in projection to both adrenal glands. No extraadrenal paragangliomas were detected. The genetic testing neither showed mutations in the SDHB or SDHD (succinate dehydrogenase B and D subunits) gene nor the typical mutations for MEN2 (multiple endocrine neoplasia) or von Hippel–Lindau syndrome (VHLS). After medical pretreatment with phenoxybenzamine the patient had total adrenalectomy on the right side and partial adrenalectomy on the left side without pre-, intra- or post-operative hypertensive crisis. He required glucocorticoid substitution, initially administered IV, later on a maintenance dose of fludrocortisones 0.1 mg/day. The diagnosis of a bilateral pheochromocytoma was histologically confirmed. The increased sweating and the palpitations disappeared after the surgery. The psychiatric treatment continued, the patient had regular sessions and continued the neuroleptic and antidepressant drug therapy as well. According to his psychiatrist, one and a half years later his condition is stable. He does not smoke cannabis and is starting a job. To keep his status he does not want to stop the medication at the moment.

## Discussion

The common symptoms of catecholamine producing tumours are hypertension, episodic headache, sweating and tachycardia.<sup>1</sup> Other symptoms are pallor and less frequently flushing. Psychiatric symptoms such as anxiety, nervousness or panic are also well known,<sup>2</sup> whereas psychosis is not considered as a typical symptom of catecholamine producing tumours. According to our knowledge, there are only three cases in the literature with psychosis as the first manifestation of a pheochromocytoma: in all cases psychotic symptoms disappeared after resection of the

**Figure 1.** CT scan showing the adrenal tumour on the right side.



tumour without further antipsychotic treatment and did not recur during the follow-up period.<sup>3–5</sup> Although the hormonal link between psychosis and pheochromocytoma remains unclear, there are two well-defined published cases in which the psychosis was healed with resection of the pheochromocytoma. In the present case, the cannabis use in combination with the increased catecholamine levels precipitated psychosis in a vulnerable individual.

A review of the literature on pheochromocytomas, published in 2010, reported on 13 cases in the urology department in Spain. In the vast majority of cases (30%) the pheochromocytoma was a so-called incidentaloma.<sup>6</sup> Another review, which was published in 2013, collected data from the Medline database over the last 22 years, and revealed that with a prevalence of 0.1–0.5% of pheochromocytoma in the whole population only half of the cases are diagnosed ante mortem.<sup>7</sup> The diagnosis of pheochromocytoma is difficult to make, first because it is rare and second because the symptoms are not obvious. To diagnose a pheochromocytoma in a patient with atypical symptoms is even more difficult. The review by Koran et al.<sup>8</sup> proved that generally somatic diseases are underdiagnosed in psychiatric patients. The conclusion is that every psychiatric patient needs a somatic work up done.

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**Guarantor:** BC

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