Psychiatria Danubina, 2024; Vol. 36, No. 1, pp 139-141 https://doi.org/10.24869/psyd.2024.139 *Case Report*
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A CASE OF ABRUPT ONSET PSYCHOTIC DISORDER AFTER CHANGES IN STABLE PINEAL CYST

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INTRODUCTION

The pineal gland is a neuroendocrine organ whose function is to regulate the circadian rhythm by synthesizing and secreting melatonin (Borjigin et al. 2012). It has been shown that sleep and circadian rhythm problems are more common in patients with schizophrenia due to abnormalities in melatonin secretion, thus supporting its role in the pathophysiology of mental disorders such as schizophrenia (Bastos et al. 2019). Pineal cysts have a female predominance (Pu et al. 2007) and may be identified at any stage in Schizophrenia patients (Fındıklı et al. 2015). Pineal cysts, particularly large cysts (≥2 mm), were associated with more severe positive and mild negative symptoms in schizophrenia patients (Takahashi et al. 2021). Since the rate of pineal cysts >2 mm is higher in schizophrenia, pineal cysts may be an early neurodevelopmental marker of schizophrenia and may also be associated with its pathophysiology. It has also been reported in previous studies that pineal cysts may be associated with both the etiology of psychotic disorder and the symptomatology of the disease (Takahashi et al. 2021). We present a patient who was diagnosed with psychotic disorder, but whose symptoms also suggest an organic pathology, and a pineal cyst was found on brain imaging. Through the case we presented, we aimed to review similar case reports and current literature.

CASE PRESENTATION

A woman in her late 30s, without any history of mental disorder, was brought to the emergency by family members. She had a diagnosis of a 6 mm stable pineal cyst with headache symptoms since 2016 (Figure 1), which had been followed with yearly cranial magnetic resonance imaging (MRI), and the last checkup was done in 2019. The patient did not go for check-ups after 2019 due to the pandemic and a follow-up MRI could not be performed. A newly dated MRI was performed by our treatment team during hospitalization in 2022.

The patient started to have visual and auditory hallucinations such as seeing dragons and religious figures in the clouds and talking to herself suddenly about nine months ago. She had delusions where she claimed plots in TV programmes were stolen from her mobile phone which she had taken notes on. She started to remove light bulbs while taking showers, thinking that someone was watching her or shredding paintings in the house in case there were bugs planted inside of them. There were also somatic delusions where the patient thought that gold fishes were swimming in her abdomen, a swordfish inhabiting her esophagus, her cysts bursting, vessels decaying, ants walking in her brain. She also suspected that her husband was causing all these ailments and

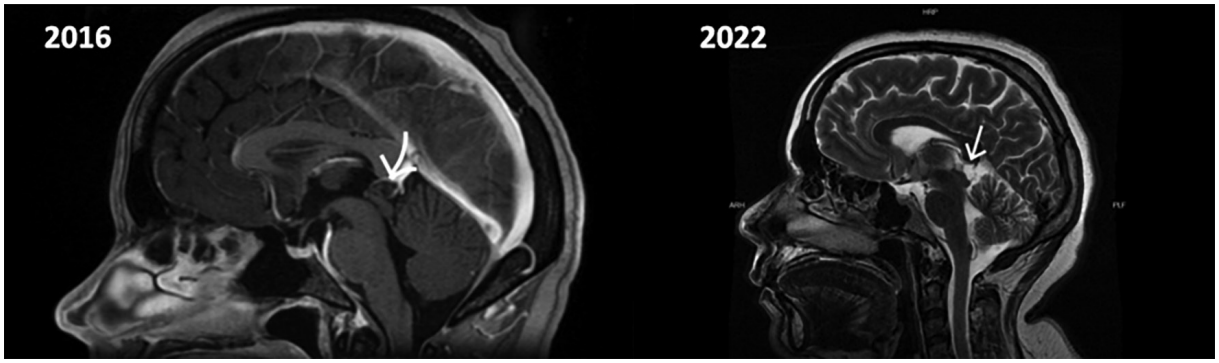


Figure 1: (From left to right) 11x9 mm pineal gland with 6 mm pineal cyst and 14x11 mm pineal gland with millimetric cystic degeneration

accused him of placing animals inside her after he had knocked her unconscious. There were many hospital admissions associated with her somatic symptoms before she applied to our emergency service. She was admitted to the psychiatry inpatient unit with the diagnosis of psychotic disorder after psychiatric evaluation in the emergency.

Routine blood tests and EEG did not reveal any abnormalities. A cranial MRI revealed a 14 × 11 mm pineal gland with millimetric cystic degeneration.

The patient was consulted by neurology and neurosurgery because of the pineal cyst. On their recommendation, it was decided that the pineal cyst did not require surgical intervention and follow-up was planned with close radiological imaging. Oral Risperidone treatment started at 1 mg/day and the dose was gradually increased to 6 mg/day. Her persecution and somatic delusions regressed and discharged on the 24th day of her hospitalization. PANSS (Kay et al. 1987), SANS (Andreasen 1989) and SAPS (Andreasen 1984) were applied to evaluate the severity of disease symptoms. Weekly PANSS (Positive and Negative Syndrom Scale) scores were 89, 82, 74 and 49 at discharge. Her SAPS (Scale for the Assesment of Positive Symptoms) score was 60 and SANS (Scale for the Assesment of Negative Symptoms) score was 34 at admission and they decreased to 16 for SAPS and 15 for SANS at discharge.

DISCUSSION

For a clinician, secondary conditions that may constitute nonpsychiatric causes of psychosis should be carefully considered in the differential diagnosis, since there are no psychotic symptoms specific to any primary psychotic disorder. In psychotic disorders secondary to a medical condition, especially brain lesions, it is difficult to establish a causal relationship between psychotic symptoms and these brain changes, as many of them may be incidental or may create a predisposition in an individual who is already susceptible to psychosis (Iftimovici et al. 2022). Brain lesions may also occur as a result of a pre-existing primary psychotic disorder. In the literature, some cases who presented with typical prodromal or active psychotic symptoms and reported that pineal gland cysts and pineal gland tumors were detected in the examinations (Mittal et al. 2010). When considered as a secondary cause, psychotic symptoms also regressed after treatment options for the lesion such as surgery, chemotherapy, and radiotherapy (Jiang et al. 2018).

Pineal cysts are typically benign, well-circumscribed lesions that are ellipsoid in shape and located adjacent to or within the pineal gland (Pu et al. 2007). Such cysts are identified in healthy populations approximately 1.1 to 4.3% of magnetic resonance images (MRI) (Al-Holou et al. 2011). Many studies show an association between pineal gland abnormalities and symptoms of psychosis (Mittal et al. 2010, Takahashi et al. 2021, Takahashi et al. 2022). Midnight melatonin levels were lower in schizophrenia patients and enlarged pineal cyst calcifications were more prevalent (Bastos et al. 2019). Although the prevalence of pineal cysts did not differ between patients with schizophrenia and healthy individuals, it was found that patients with pineal cysts larger than 2 mm showed more severe positive symptoms and milder negative symptoms (Takahashi et al. 2021).

We believe that the underlying pineal cyst may be the most likely reason for these quite diverse and sudden onset of severe positive symptoms. Especially pineal cysts larger than 2 mm are associated with more severe positive symptoms which is consistent with our case (Takahashi et al. 2021).

The pineal gland size increased by 14x11 mm in the MRI taken during the hospitalization of the patient, who was followed up with annual controls since 2016 due to a pineal gland size of 11x9 mm and a stable pineal cyst of 6 mm but could not go to regular follow-ups after 2019 due to the COVID-19 pandemic until her hospitalization to our clinic. Enlargement of the pineal gland and the degeneration of the cyst may be a condition that causes this sudden onset and colorful clinical picture.

It also might be just a coincidence the early neurodevelopmental pathology theory of schizophrenia can explain these and pineal cysts may be more common in schizophrenic patients than in the general population (Rund 2018).

CONCLUSION

In conclusion, it should be kept in mind that the underlying organic conditions should also be investigated in a patient with sudden onset, intense visual, somatic delusions and a history of accompanying pineal cysts.

Ethical Considerations: Does this study include human subjects? YES
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