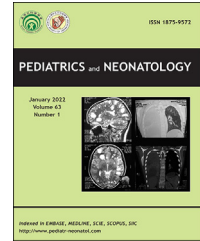


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Letter to the Editor

Adenocarcinoma with multiple metastases imitating neurocysticercosis and pulmonary tuberculosis

Dear Editor:

Adenocarcinoma is the most common type of bronchogenic carcinoma in pediatric patients. It often has a poor prognosis, and stage 4 of the disease is observed in approximately 50% of the diagnosed cases.¹

We present the case of a 17-year-old female patient with a complaint of unproductive cough for 4 months, which intensified during exercises and air temperature changes. Intrusive cough, increased fatigue, and appetite and weight loss were observed. Chest X-ray revealed a right-sided pleural effusion. Drainage of the right pleural cavity was performed and *Mycobacterium tuberculosis* (Mbt) was detected in the exudate using polymerase chain reaction (PCR).

Complete blood count (CBC): hemoglobin = 133 g/L, red blood cells = $4.0 \times 10^{12}/L$, white blood cells = $6.9 \times 10^9/L$, eosinophils = 2%, neutrophils = 72%, lymphocytes = 15%, and erythrocyte sedimentation rate = 58 mm/h.

Due to an Mbt-positive PCR, the patient received tuberculosis treatment according to the protocol: isoniazid, rifampicin, streptomycin, B vitamins, and glucocorticoids. Nausea and vomiting appeared a month and a half after treatment initiation. These complaints were treated as pharmacological side effects and basic therapy was discontinued. Two weeks later, signs of central nervous system (CNS) damage developed (headache, insomnia, and meningeal symptoms), and brain magnetic resonance imaging (MRI) with chest computed tomography (CT) were performed (Fig. 1).

MRI conclusion: diffuse lesions of the brain parenchyma and cerebellum of parasitic origin (neurocysticercosis).

According to MRI and CT results, a differential diagnosis between neurocysticercosis, pulmonary tuberculosis, and lung tumor was made.

From the anamnesis, the patient did not receive anthelmintic drugs for the last 10 years, without eosinophilia in the CBC.

Cerebrospinal fluid (CSF): eosinophils = 0, cells = 0–1 (lymphocytes), protein = 0.66 mmol/L, and glucose = 2.2 mmol/L.

CSF PCR of Mbt and Quantiferon blood tests were negative.

Worsening of the patient's condition led to further evaluation and diagnosis. The patient underwent bronchoscopy with puncture lung biopsy, and a moderately differentiated pulmonary adenocarcinoma was diagnosed.

Clinical and laboratory studies established a diagnosis: adenocarcinoma of the right lung with brain and bone metastases, T4N2M1, stage 4. Unfortunately, the patient died 8 months after the first clinical sign of the disease. Adenocarcinoma treatment for the patient was only palliative.

After the autopsy, the diagnosis of adenocarcinoma with multiple isolated brain metastases was confirmed.

This case report is thought-provoking and informative since pediatric pulmonary adenocarcinoma is an extremely rare disease, especially when presented with brain metastases. Its early diagnosis is difficult due to the rarity of this condition and unspecific symptoms at the beginning of the disease.²

In our case, a timely diagnosis was challenging due to the pulmonary symptoms, which were similar to possible Mbt infection and uncommon cyst-like metastases in the brain that imitated neurocysticercosis.

Neurocysticercosis is the most common helminthic CNS infection. In endemic areas, cyst-like brain metastases may be misdiagnosed for neurocysticercosis. Costa et al.³ described a case of lung adenocarcinoma with atypical

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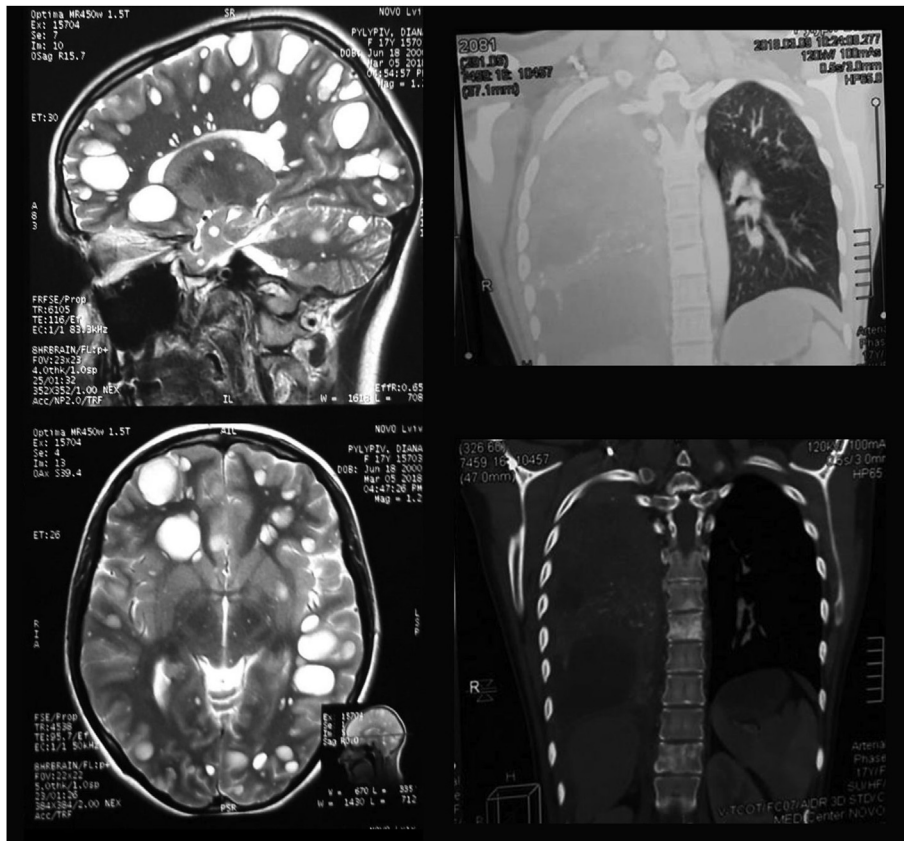


Figure 1 Brain MRI: diffuse cyst-like formations in the parenchyma of the brain, cerebellum. The ventricular system is not dilated and the lateral ventricle bodies are symmetrical. **Computed tomography results:** in the right lung projection, a massive pathological heterogeneous process is visualized. It causes obstruction, right main bronchus rupture and right lung atelectasis, and compression of the right artery and its branches. A large amount of fluid in the right pleural cavity. Osteosclerotic destruction of Th1–Th4, Th8, Th12, L2 bodies, and wedge-shaped deformation of the Th12 body.

cystic brain lesions, which appeared to be brain metastases.

Therefore, pediatric specialists must consider rare malignancies and their frequent atypical manifestation in children and adolescents.

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Declaration of competing interest

The authors declare no conflicts of interest associated with this manuscript.

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