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A neoplasm associated with the meninges of the spinal canal – a case report

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ABSTRACT

Introduction: Spinal canal neoplasms are a heterogeneous group of diseases including both primary and metastatic tumors, either benign or malignant. These tumors can develop both intraspinally and peripherally. Spinal canal tumors are four times less frequent than intracranial tumors. Four-limb paresis may be one of the leading symptoms of a spinal canal tumor.

Case report: A 76-year-old female patient was admitted to Neurology Dept. Due to progresive paresis of the lower limbs, muscle weakness, gait disorders and urinary incontinence. A spine MRI revealed a contrast enhancement of the meninges of the spinal cord over the entire length of the spinal cord in the sections covered by the MRI, as well as numerous focal lesions associated with the meninges, which were most likely cancer metastatic foci. CT of the chest, abdominal cavity and pelvis showed no signs of primary neoplasm. A PET scan was scheduled for a patient, but it was abandoned due to haemorrhagic incydent within the brain of the patient. Head MRI revealed no signs of primary cancer focus as well. Histopathological examination of the CSF revealed no specific changes. The patient died, and the autopsy was not performed accordingly to family's request.

Discussion: Cancers of unknown primary origin constitute 3-5% of all cancer cases. These, usually fast-progressing cancers are a huge diagnostic difficulty, which results in mediocre effects of treatment of patients who already have cancer metastases, but it is not known what type of cancer doctors are dealing with. In approximately 20% of patients with cancer with an unknown origin, the primary tumor cannot be determined despite the specialized examinations. In such cases, often only post-mortem examination gives a chance to make the correct diagnosis.

Key words: spinal cord; meninges; neoplasms; spinal canal.

INTRODUCTION

Spinal canal neoplasms are a heterogeneous group of diseases including both primary and metastatic tumors, either benign or malignant. These tumors can develop both

intraspinally and peripherally. Spinal canal tumors are four times less frequent than intracranial tumors. Four-limb paresis may be one of the leading symptoms of a spinal canal tumor. [1]

CASE REPORT

The patient, 76 years old, was admitted to the Neurology Department in December 2018 due to the progressive paresis of the lower limbs from the beginning of the month, muscle weakness which led to a fall from her own height, pain in the limbs and gait disorders as well as urinary incontinence. In the past, the patient underwent lumbar spine surgery due to spinal osteoathritis and ventricular-peritoneal valve implantation due to normotensive hydrocephalus. Yet under conditions of the A&E Department, CT examination of the lumbosacral spine and CT of the head was performed, and the patient was consulted neurosurgically and orthopedically - without any surgical intervention suggestions.

In the neurological examination on the day of admission to the Neurology Department, the patient was conscious, auto- and allopsychically oriented, in logical contact, experienced paresis of the lower limbs and slight paresis of the upper limbs, hypoesthesia below the Th10 level, bilaterally positive Babinski symptom.

During the stay, the cerebrospinal fluid testing was performed and the fluid was examined by a pathologist, but no specific changes were found. Later, the CT of the cervical spine was performed, due to the inability to perform an urgent MR examination, then a few days later the results were supplemented by the MR examination of the cervical spine and also the MR examination of the thoracic spine took place. The examination revealed a contrast enhancement of the meninges of the spinal cord over the entire length of the spinal cord in the sections covered by the MRI, as well as numerous focal lesions associated with the meninges, which were most likely cancer metastatic foci. The patient was again consulted neurosurgically - it was recommended to look for a primary neoplasm focus to take biopsies of lesions more favorably located than in the spinal canal. Therefore, CT examination of the chest, abdominal cavity and pelvis was performed, which, however, did not clearly indicate the possible initiation point of the probable tumor process. Therefore, a PET scan was planned. The scheduled examination was postponed due to difficulties in obtaining normal glucose levels. The examination was finally abandoned because the day before the planned procedure the patient's condition worsened (numerous vomiting occurred, the patient was

consulted gastrologically - gastrological causes were excluded) and urgent CT of the head showed the presence of intracerebral bleeding. In order to control and possibly demonstrate the presence of a tumor in the cranial cavity, an MR examination of the head was also performed, which did not show the presence of lesions suspected of the cancerous spread. The patient was consulted neurosurgically and oncologically - at the time of consultation without further treatment proposals. The patient was also orally consulted with an orthopedist whether a biopsy of the sternum lesion is possible – but it was stated the suspicious lesion was too small to obtain a diagnostic biopsy.

During the stay, the general state of the patient gradually deteriorated. On the end of January an episode of palpitations, pallor of the skin and rapid breathing occurred. An ECG revealed atrial fibrillation with fast ventricular action. Drugs that slowed heartbeat were given ad hoc and the patient's condition was stabilized and a cardiologist also consulted the case. Over the next days, the patient's condition remained very severe, but stable. During the beginning of February, 2 months from the onset of the disease, the patient experienced episodes of tachycardia and malaise again. Later that day a sudden cardiac arrest occurred and the doctor on duty declared the patient's death. Upon request of the family of the deceased, the autopsy was abandoned.

DISCUSSION

Cancers of unknown primary origin constitute 3-5% of all cancer cases. These, usually fast-progressing cancers are a huge diagnostic difficulty, which results in mediocre effects of treatment of patients who already have cancer metastases, but it is not known what type of cancer doctors are dealing with. It is a standard practice to perform chest X-ray and abdominal ultrasound screening in such situations. It is often necessary to have a CT scan of the chest, abdominal cavity and pelvis, as was done in the above patient. In the situation where there is still no suggestion as to the tumor's origin location, a nuclear medicine - PET test is performed to determine tissue metabolism. It is also possible to collect a biopsy for a histopathological examination from a metastatic lesion, which can help determine the histological type of the tumor, even if it could not be found at the typical site. However, even doing all of the above tests does not guarantee success. In approximately 20% of patients with cancer with an unknown origin, the primary tumor cannot be determined despite the above

specialized examinations. In such cases, often only post-mortem examination gives a chance to make the correct diagnosis. [2-7]

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