

RARE SYMPTOMS IN PATIENTS WITH SPINAL CORD TUMOURS

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The authors describe some rare symptoms in patients with spinal cord tumours among 1467 cases. Papilloedema was found in 17 patients, the tumours being found throughout the whole length of the spinal cord. All cases presented with increased protein content in lumbar and suboccipital CSF. Three patients suffered from subarachnoidal haemorrhage as an initial symptom of the disease. All of them had vascular tumours in the thoracic region. Among the other rare symptoms isolated sexual disturbances were found in 47 patients, problems with intestinal motility - in 2, and damage of cranial nerves - in 9. The authors discuss the existing current theories for explanation of the appearance of these symptoms.

Key-words: Spinal cord tumours, raised intracranial pressure, papilloedema, sexual disturbances, cranial nerve damage, diagnosis

The "classical" clinical manifestation of patients with spinal cord tumors includes motor, sensory, urinary and trophic signs. However, sometimes physicians find other, not typical symptoms, which often make the exact diagnosing difficult and lead to diagnostic errors and delayed onset of the adequate treatment.

MATERIAL AND METHODS

A total of 1467 patients with spinal cord tumours were been studied. Patients with secondary spinal cord compres-

sion due to primary or metastatic vertebral neoplasm were excluded from that group. The site of the compression was determined after the scale adopted in Bulgaria dividing the spine into the following regions: *Foramen magnum*, upper and lower cervical, upper and lower thoracic, thoraco-lumbar, and *Cauda equina* regions.

RESULTS AND DISCUSSION

In all patients the "classical" signs of the so-called "spinal compressive syndrome" were present in different combinations. In 17 there were clinical data for raised intracranial pressure and papilloedema was detected. In 7 of them the tumour was found in the region of *Fora-*

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men magnum, in 2 - in the upper cervical, in 1 - in the lower cervical, upper and lower thoracic regions, in 4 - in the thoraco-lumbar region and in 1 - in the region of *Cauda equina*. There were 4 patients with astrocytoma at different degree of dedifferentiation, 2 with ependymoma, 1 with neurinoma and with meningioma while 2 were not studied histologically. The degree of papilloedema varied from +1 to +4 D. In 6 patients internal hydrocephalus using different diagnostic methods was proven. In 3 patients there were data about posterior fossa arachnoiditis. The protein content in the lumbar cerebro-spinal fluid (CSF) was 3,72 g/l, while in the suboccipital CSF it was 0,66 g/l reaching up to 1,23 g/l in one patient. Only in one case, 20 red blood cells in CSF were found. There was a spinal subarachnoid haemorrhage in 3 cases. They were with vascular tumours situated in the thoracic part of the spine. Subarachnoid haemorrhage appeared as an initial symptom and its onset coincided with physical efforts. It was very typical that in all 3 patients together with or even a little bit earlier than the manifestation of headache and the other meningeal signs radicular pain and motor disturbances in the lower extremities occurred. One patient died and till the end the meningeal signs persisted and the CSF was haemorrhagic. The other two suffered significant improvement with regard to the neurological signs. The latter course is considered to be typical of spinal subarachnoid haemorrhages.

We consider rare symptoms the isolated sexual disturbances that do not coincide with bladder dysfunction. The most typical point of these functions is that while being conducted with the help of the vegetative nervous system brain cortex is also essential for them. The isolated sexual disturbances were found in 43 men and 4 women. All of them were with benign tumours. In 2 patients disturbances in the intestinal motility and ileus signs were established. Damage of cranial nerves was found in 9 cases, 7 of them being with tumours in the *Foramen magnum* area. The other two were with peripheral type of damage of N. VII, one of them being with astrocytoma at the level C₅-C₇ while the other was with C₁-C₂ neurinoma.

One can very rarely find in the literature available case reports with spinal cord tumours and raised intracranial pressure. In 1964, Glasauer found only 18 such patients, adding one personal case. In the literature available we found 22 more patients with tumours in the thoracic or lumbar regions. There are many theories trying to explain the appearance of that syndrome. Most probably, the mechanism is multi-factorial. No doubt that disturbances of CSF flow due to blocking the subarachnoid space play an important role. Many authors consider an elevated CSF protein content the most important factor for intracranial hypertension (3-5). It leads to mechanical obstruction of the arachnoid villi, essential for CSF absorption. It also affects the absorption through the periradicular lymphatic spaces. This is

in a way confirmed by our data for elevated albumin content both in lumbar and suboccipital CSF. Glassauer accepts that stasis in the compressed spinal venous plexuses leads to increased CSF production due to extravasation (3). In the group of patients studied by us 3 were with data about posterior fossa arachnoiditis. This fact is proved by Arseni and Maretsis who found such changes in 2 out of 3 cases (1). These changes are, most probably, due to aseptic inflammation caused by pathological proteins excreted by tumour cells. We have no data confirming the statement of these authors of the presence of subarachnoidal microhaemorrhages from the tumours.

In 1930, F. Andre-Thomas was the first to describe subarachnoidal haemorrhage in patients with spinal cord tumours. Till now there are 26 such cases in the literature (2,6,7). There exists a widespread consent that this symptom is

to be observed in patients with *Conus medullaris* ependymoma, the fact being explained by the fine structure of these tumours and the most expressed stretching of the spinal cord in that region. In our material all subarachnoidal haemorrhages were in cases with vascular neoplasm. Disturbances in intestinal motility can be explained by the damage of the great splanchnic nerve which is originating from the sympathetic chain at the level of Th7-Th9. It is well known that the latter is closely connected to the lateral horns of the spinal cord at that level through intercostal nerves and the communicating branches.

In conclusion, we would like to emphasize that in spite of being very rare, these signs have definite significance and their early detection can facilitate the diagnosis and help the adequate treatment of the patients.

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Рядко срещани симптоми при болни с тумори на гръбначния мозък

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Резюме: Авторите описват някои рядко срещани симптоми при гръбначно-мозъчни тумори на базата на анализ на 1467 наблюдавани случая. При 17 болни с тумори с най-различно местоположение по хода на гръбначния канал е установено повишение на вътречерепното налягане и застой на очните дъна. При всички тях е било налице повишено количество на албумина както в лумбалния, така и в субокципиталния ликвор. При трима болни заболяването е дебютирало със симптоми на субарахноидална хеморагия. И тримата са били със съдови новообразувания в лумбалната област. Всред другите редки симптоми са изолираните смущения в половите функции - при 47 болни, смущенията в мотилитета на червата - при 2 и увредата на черепно-мозъчните нерви - при 9. Авторите правят обзор на теориите, обясняващи появата на тези симптоми.