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COMPLEX TREATMENT OF CLINICAL AND NEUROLOGIC MANIFESTATIONS OF METASTATIC TUMORS OF VERTEBRAE BODIES COMPLICATED BY COMPRESSION OF SPINAL CORD

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«Collopan» is the most effective remedy in conducting plastic surgery on spine, it increases support ability of the affected spine, decreases pain syndrome, recovers neurologic symptomatology and improves life quality of the patients.

Surgery allows to quickly reduce or cut off the pain syndrome thereby increasing of motor activity, improving of life quality and beginning of special treatment within short term.

Keywords: metastatic tumors, vertebrae bodies, spinal cord

Under cancer metastases in spine or spinal canals at any localization of lesions, initially conduction symptomatology often becomes apparent as sluggish spastic paraparesis and paraplegia caused by quick development of cerebral compression and toxic effect on it. Later on, spasticity and pain emerge [1].

Clinical symptoms, observed under metastatic tumors of spine, are caused not only by tumors that lead to direct compression of roots and spinal cord, but are a consequence of toxic effects of tumors on spinal cord, compression of tumors on roots and anterior spinal artery with development of ischemic vascular abnormalities in spinal cord. In these cases, there may be discrepancy between a sensitivity disorder level and tumor site [1, 2, 3, 4, 5].

Materials and research methods

We observed 40 patients with the spine tumors at the age of 22 to 52. Among them were 25 men (62,5%) and 15 women (37,5%). Prescription of disease was from 1 to 3 years. Spineplasty was done with «Collapan».

Results and their discussion

We collected and scrutinized neurologic disorders of 40 patients with metastatic lesion of the spine with exophytic growth of tumor and pathologic compression fracture of vertebrae bodies. Intensity of neurologic disorders depended on degree of spinal cord compression and its roots as well as on localization level of pathologic process.

Neurologic disorders were composed of the following:

– Sensitivity disorders were observed among almost all examined patients. Sensitivity abnormalities often have conduction nature to be expressed in the form of hypesthesia or anaesthesia of below localization level of pathologic process. In some cases, paresthesia was observed (feeling creepy all over, sense of electric current passing and others).

– Motor disorders were also observed among all patients in the form of paresis and paralyzes (central or peripheral type). Spastic contractions of muscles of extremities were observed. Reflexes caused by extremities are revived with expansion of reflexogenic zone (under central type) or vice versa depressed (under peripheral type). When location of pathologic process is high, pathologic reflexes emerge (Babinsky, Rossolimo).

In clinical practice, lesion of spine with malignant tumor could be observed, which is a result of metastatic disease or progressive growth of viscera tumor with invasion to backbone. Vertebrae bodies have good blood supply and ramified vasculature, therefore, cancer cells could move with a blood flow and be sunk in vessels of vertebrae. If after this, cancer cells grow and propagate, metastasis is formed in vertebra body, which gradually destroys bone tissue and could lead to compression of nervous roots and spinal cord.

Most frequently localization of primary lesion was observed in mammary gland – 32,5%, in kidney – 22,5%, in lungs – 20,0% and in sigmoid colon – 25,0%.

Metastases were mainly localized at lumbar level – 25 patients (62,5%) and thoracic level – 15 patients (37,5%). 10 patients (45%) had solitary lesion of spine and 3 patients (14%) – single lesion of spine. 9 patients (41%) had multiple metastases invaded in spine. 14 patients (64%) had visceral metastases.

Major difficulties occur under metastatic lesions of spine, when clinically apparent pain syndrome, compression of spinal cord and dysfunction of pelvic organs are observed. Spine surgery in combination with modern conditions of chemoradial and hormonotherapy allow to make new evaluation of prospects of this group of patients who had been incurable in the past. Due to complex approach in

treating metastatic spine tumors, most patients reach stable improvement of neurologic status, complete or partial recovery of dysfunctional pelvic organs and life quality improves. Main indication for plastic surgery on spine with the use of «Collopan» was neurologic disorders, strong pain syndrome and abnormalities in support ability of the body of affected vertebra. By nature of operation performed, the patients were divided into two groups. 17 patients of 1 group were performed arcotomiya, hemilaminectomy and insertion of «Collopan» into the bodies of affected vertebrae by an open method. 23 patients of 2 group were inserted «Collopan» in percutaneous way. Volume of the inserted «Collapan» was from 5 to 10 ml. Fixation time: 2–3 minutes. To determine a filling level of the affected vertebra, check standardized roentgenography was conducted. In postoperative period, all the operated patients with malignant tumors were prescribed radiation therapy on the area of affected segment of spine and chemotherapy.

Among 40 operated patients in postoperative period, in case of 18 patients (56,2%) – the pain syndrome completely disappeared, 21 patients (52,5%) – the pain significantly decreased and only 1 patient (2,5%) had the pain equal to presurgical level. Reduction of neurologic abnormalities in the nearest postoperative period was observed at 24 patients (60%) (sensitivity recovery, increasing volume of legs movement,

recovery of pelvic organs functions). In the group of patients who were performed percutaneous plastic surgery on spine, disappearance of the pain syndrome and recovery of neurologic symptomatology were observed in early period. Therefore, this method has an advantage over the open method.

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