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THE SIGNIFICANCE OF THE USE OF COMPUTED TOMOGRAPHY IN PATIENTS WITH BRAIN TUMORS IN THE EARLY POSTOPERATIVE PERIOD

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Abstract
The current state is characterized by the increasing use of CT, MRI, DSA and PET for the diagnosis of various types and types of brain tumors.
The use, primarily of CT and MRI, significantly improved not only the recognition of brain tumors, but also made it possible to carry out differential diagnostics between them and non-neoplastic diseases of the brain.
This article has published a broad review of the issues of computed tomography in patients with postoperative conditions with brain tumors.
It has been shown that the CT method provides accurate and correct diagnosis, speed, and, most importantly, the preference of this method today.

Keywords: radiation diagnostics, tumor, central location, CT.

Introduction

Radiation diagnosis of brain tumors, despite the introduction of highly informative and minimally invasive research methods into clinical practice, continues to be an urgent problem in neurosurgery [2].
Computed tomography occupies a central place in the radiation diagnosis of oncological diseases [5]. Continuous improvement of this method has led to the introduction of multispiral computed tomographs into practice, the methods of CT examination with contrast enhancement have undergone changes, etc.
Multiphase scanning on multispiral tomographs makes it possible to identify tumors in the early stages of development and in many cases to carry out differential diagnosis of neoplasms by the nature of the movement of the contrast agent in pathological tissue [1]. Postprocessing image processing techniques with the formation of multiplanar and three-dimensional reconstructions of pathological formations are becoming increasingly widespread [3].
Postoperative intracranial hematoma is a common complication that occurs after cranial surgery. This is prolonged hospitalization, many medical expenses and even severe neurological dysfuncomputerine tomography can lead to sciatica and death. The only way to change the consequences of postoperative intracranial hematoma is to identify early and take the right

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treatment measures. Clinical and neurological monitoring after neurosurgical surgery is the main method for detecting postoperative intracranial hematoma [1]. Typically, the diagnosis of postoperative intracranial hematoma, where a second surgical procedure is necessary, is made using computed tomography [2, 3]. However, the role of regular, timely postoperative computed tomography (which can be performed before the clinical manifestation of intracranial hematoma) in the diagnosis of postoperative intracranial hematoma remains controversial [1].

Computed tomography is actively used to perform minimally invasive surgical interventions – diagnostic puncture biopsies, drains, ablations [4].

The purpose of the study. Improving the effectiveness of diagnosis of early postoperative complications and residual tumor masses in patients with brain tumors using computed tomography.

Materials and methods of research. The criteria for inclusion of the patient in the study were the presence of one or another postoperative complication or residual tumor masses. In order to solve the tasks set for us, 60 patients were examined over the period 2020-2021.

The results of the study. The results of the study showed that the detection of postoperative hematoma against the background of edema requires CT scans for edema, inflammation, trauma and ischemia, residual tumor masses are visualized more clearly due to differences in relaxation times.

However, when using intravenous contrast enhancement (50 ml of Visipak), in cases of detection of residual tumor masses against the background of postoperative hematoma, the use of CT is even preferable.

CT by contrast in the early postoperative period are highly informative methods for assessing the degree of radicality of surgical removal of brain tumors. CT sensitivity in determining the degree of radicality of the performed surgical intervention is 96%. The combined use of these methods makes it possible to establish the correct diagnosis in 96% of cases.

When performing CT in the early postoperative period, the presence of residual tumor masses is indicated by the accumulation of contrast agent in the form of lumps or nodules, usually located in the deep parts of the surgical intervention zone.

Taking into account the timing of studies conducted in the early postoperative period, the informative value of CT in detecting hemorrhages. In case of edema, hemorrhage and ischemia, the volume of resection performed is better estimated based on MRI data with intravenous contrast enhancement.

According to CT results in 11% of patients, it is possible to clarify the degree of radicality of the performed surgical intervention in comparison with intraoperative data.

Postoperative intracranial hematoma occurred in the first 3 hours and 4-6 hours after craniotomy in 3 and 7 patients, respectively. Another 4 patients developed postoperative intracranial hematoma within 24 hours of surgery, while 2 patients developed postoperative intracranial hematoma 24 hours later. Most postoperative intracranial hematomas in this series (10/16. 62.5%) occurred within the first 6 hours after the first craniotomy; Only a small proportion of patients (2/16.12.5%) found postoperative intracranial hematoma after 24 hours. The postoperative

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intracranial hematoma time interval distribution included is shown in diagram 1. Postoperative intracranial hematoma showed good results in all 2 patients who appeared after 24 hours.

A CT scan was performed on all of the 110 patients included in this study. Computed tomography was performed in 75 patients within 6 hours after surgery, in 18 patients within 24 hours after surgery, and in 17 patients 24 hours after surgery, but within 36 hours.

Computed tomography after craniotomy revealed a total of 16 postoperative intracranial hematoma cases. The postoperative intracranial hematoma detection rate of Computed Tomography performed in the first 6 hours after surgery was 13.3% (10/75), computed tomography examination performed in 7-24 hours was 22.2% (4/18), and computed tomography evaluation performed 24 hours later was 11.7% (2/17).

Of the 110 patients, 80 had undergone a CT scan without any clinical manifestations associated with postoperative intracranial hematoma. In this, the rate of detection of postoperative intracranial hematoma of Computed Tomography was 2.5% (2/80).

Of the 16 patients who developed postoperative intracranial hematoma, 14 initially showed clinical signs of intracranial bleeding, with bleeding and postoperative intracranial hematoma later confirmed after a CT scan. As mentioned above, postoperative intracranial hematoma was only detected by CT scan before any clinical manifestations appeared in 2 patients.

Conclusion

In conclusion, we analyzed the effect of a CT scan performed in the short range after a craniotomy to determine postoperative intracranial hematoma. The examination included a total of 110 patients who had craniotomized with a cranial tumor, and all had cranial computed tomography. Of these, 14 (12.7%) developed postoperative intracranial hematoma where surgical treatment was necessary.

While CT scans revealed 16 postoperative intracranial hematoma cases, a large proportion of these patients (14) showed questionable clinical manifestations prior to scanning. In addition, the postoperative positive rate of intracranial hematoma of a typical CT scan was only 2.5% (2/80) in patients with no clinical manifestations. Thus, a typical early CT scan performed to detect postoperative intracranial hematoma may be ineffective in all patients who have undergone a craniotomy. Retrospecomputer tomography results are inconclusive due to the limitations of iv studies, especially the prolonged use of postoperative persistent computed tomography in this study. In determining postoperative intracranial hematoma, a well-developed prospective study is needed to further assess the value of continuous computed tomography examinations following craniotomy.

The necessity of using CT, depending on the purpose of the study in the early postoperative period, is shown, and the expediency of using intravenous contrast agents is determined. CT scan of signs of residual tumor masses has been systematized.

The practical application of the results of the work contributed to the diagnosis of early postoperative complications in the vast majority of cases and led to more correct treatment.

The use of the data obtained during the study increased the effectiveness of evaluating the results of surgical treatment of brain tumors.

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