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ANALYSIS OF THE FREQUENCY OF OCCURRENCE OF BRAIN MENINGIOMA DEPENDING ON GENDER.

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Abstract
The assessment of the degree of radical removal of brain meningiomas from the moment of surgery was assessed by the frequency and timing of recurrence, continued growth, depending on the degree of radical removal of tumors, their location, and the presence of altered underlying bone (hyperostosis). The incidence of tumor recurrence 5 years after radical surgical treatment is 56-78%. However, the main clinical and surgical significance are such properties of meningiomas as invasiveness of growth, degree of malignancy and ability to metastasize.

Keywords: **analysis of the incidence of brain meningiomas depending on gender**

Introduction
Meningiomas rank second among all brain tumors after glial tumors and account for 13% to 20%. Most often, meningiomas are diagnosed in people aged 30-60 years and are almost never observed in people under 20 years of age. The incidence of malignant meningiomas ranges from 1 to 9% of all meningiomas. The survival time of patients with atypical meningiomas ranges from 1 year to 6 years. The assessment of the degree of radical removal of brain meningiomas from the moment of surgery was assessed by the frequency and timing of recurrence, continued growth, depending on the degree of radical removal of tumors, their location, and the presence of altered underlying bone (hyperostosis). The incidence of tumor recurrence 5 years after radical surgical treatment is 56-78%. However, the main clinical and surgical significance are such properties of meningiomas as invasiveness of growth, degree of malignancy and ability to metastasize. Representing about a quarter of primary neoplastic processes of the central nervous system (CNS) [1], meningiomas are common brain tumors with a wide biological and histological spectrum. Like their neoplastic counterparts, normal meningothelial cells are morphologically and functionally different, but at the same time show some similarities with both mesenchymal and epithelial cells [1–8]. Based on comparative data from studies of birds, it is assumed that the pia mater is derived from the neural fold in the telencephalon, mesoderm located in the brainstem region, and segmental mesoderm of the spinal cord [9]. Arachnoid granulations (Pachionian granulations) are polypoid intussusceptions that form channels for the drainage of cerebrospinal fluid (CSF) into the dural sinuses and veins. Histologically, arachnoidal cap cells, which can be represented either by single-celled flattened layers consisting of fibroblast-like cells or by epithelioid accumulations up to 10 cell layers thick, form the outer layer of the arachnoid membrane and arachnoid granulations. They are cytologically similar to meningioma cells, so they most likely represent the cells from which the tumor originates. However, the possibility of the tumor originating from more primitive progenitor cells cannot be

excluded. A thin basal lamina separates these apical cells from underlying trabecular arachnoid cells with thin stellate processes that divide the subarachnoid space into chambers by septa. Morphologically, ultrastructurally, and functionally, both meningothelial cells and meningioma cells are unique with respect to their mesenchymal and epithelioid properties. The former include a spindle-shaped morphology and the ability to produce collagen stroma, while the latter have a spherical or polygonal shape, multiple intercellular contacts,express epithelial membrane antigen (EMA) and have secretory function. Developed mesenchymal features are observed in fibroblastic and metaplastic meningiomas of the benign part of the tumor spectrum, while sarcomatoid morphology is observed in the malignant part of the spectrum. The most highly differentiated epithelial phenotype is considered to be the secretory variant of meningioma, which is an obvious glandular metaplasia with microvilli, cilia, intraluminal secretion, and immunoreactivity for cytokeratin and embryonal tumor antigen (ETA)..

Materials and Methods

This study was carried out on patients hospitalized in the period 2018-2024, who underwent surgical treatment for meningovascular brain tumors (MVBT) in the Department of Neurosurgery of the Multidisciplinary Clinic of SamSMU. A study was carried out on 150 patients (87 women and 63 men aged from 37 to 65 years) with MSOG. The diagnosis of the studied patients was based on clinical and laboratory data, data from radiation and instrumental research methods in the pre- and postoperative period.

Study results:The average age of the patients was 57 (49-60) years. The average duration of surgical intervention in the studied patients was 180-240 minutes. The duration of hospitalization of the study subjects was 10-14 days. All patients underwent MRI of the brain with contrast in the pre- and late postoperative periods to assess the location of the tumor matrix, clarify its size, directions of spread, and the presence of tumor recurrences. Most often identified by the location of brain meningiomas in67 (44.7%) of the studied patients was localized in the frontal lobe, parietal lobe in 45 (30.2%), temporal lobe in23(15.7%), posterior cranial fossa in15(10.4%). The following approaches were used to remove brain meningiomas: parasagittal, subfrontal, subtemporal, orbito-zygomatic-temporal, supraorbital, retrosigmoid, median. In 92 patients studied, after surgical treatment, no tumor remnants were detected on brain MRI, which confirmed the complete removal of the tumor. The degree of radicality of the operations was assessed according to the generally accepted classification by D. Simpson: degree I - total removal of the tumor along with the matrix in 36.2% (54) researched; Grade II - total tumor removal with matrix coagulation in 50.9% (76); III degree - partial removal of the tumor in 5.34% (8); IV degree - decompression is divided into subtype A - subtotal removal leaving minimal fragments in 4.0% (6) patients and subtype B - partial removal 2.67% (4); Grade V - biopsy 0.67% (1). Analysis of changes in quality of life was carried out in patients in the preoperative period, early (the first 5-7 days after surgical treatment - the moment of discharge from the hospital) and late postoperative periods (3-6 months after surgery).

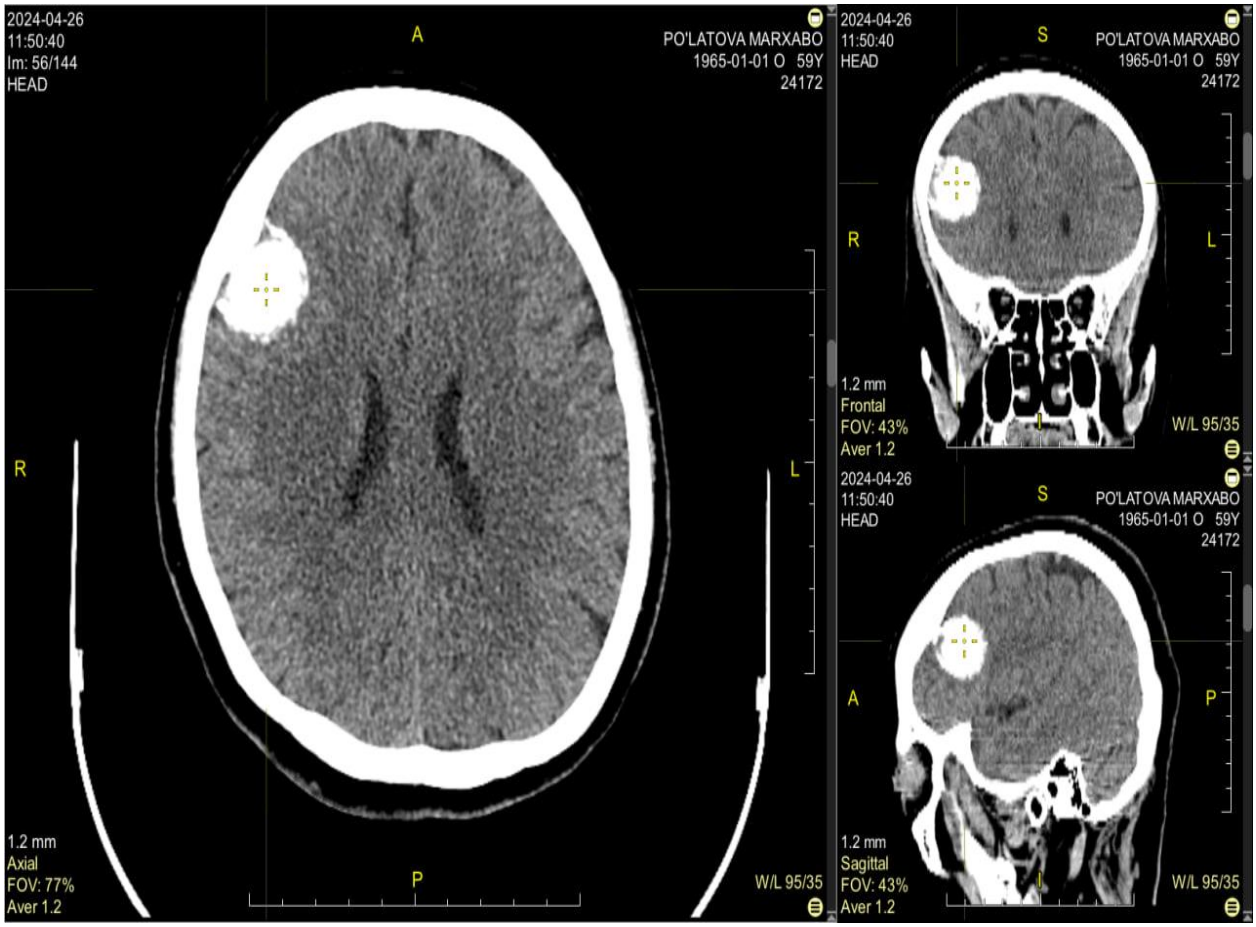
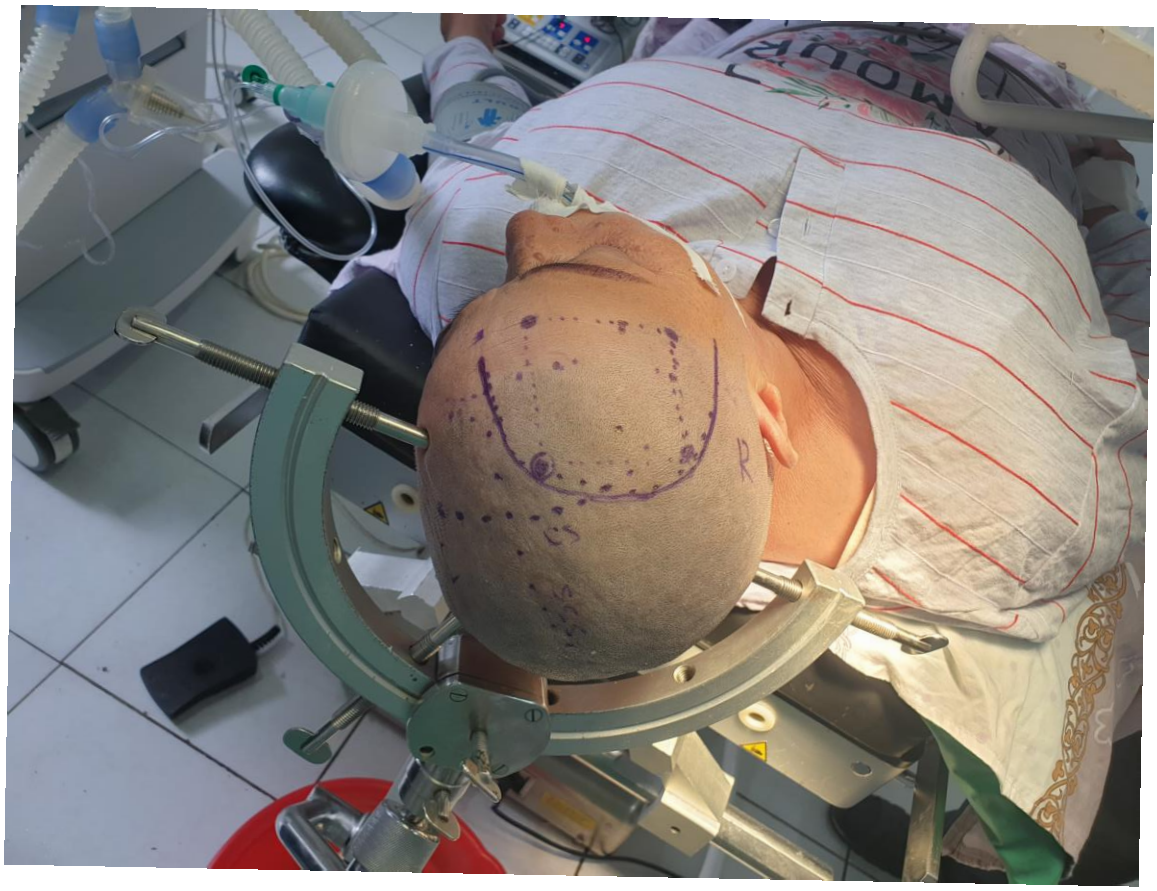
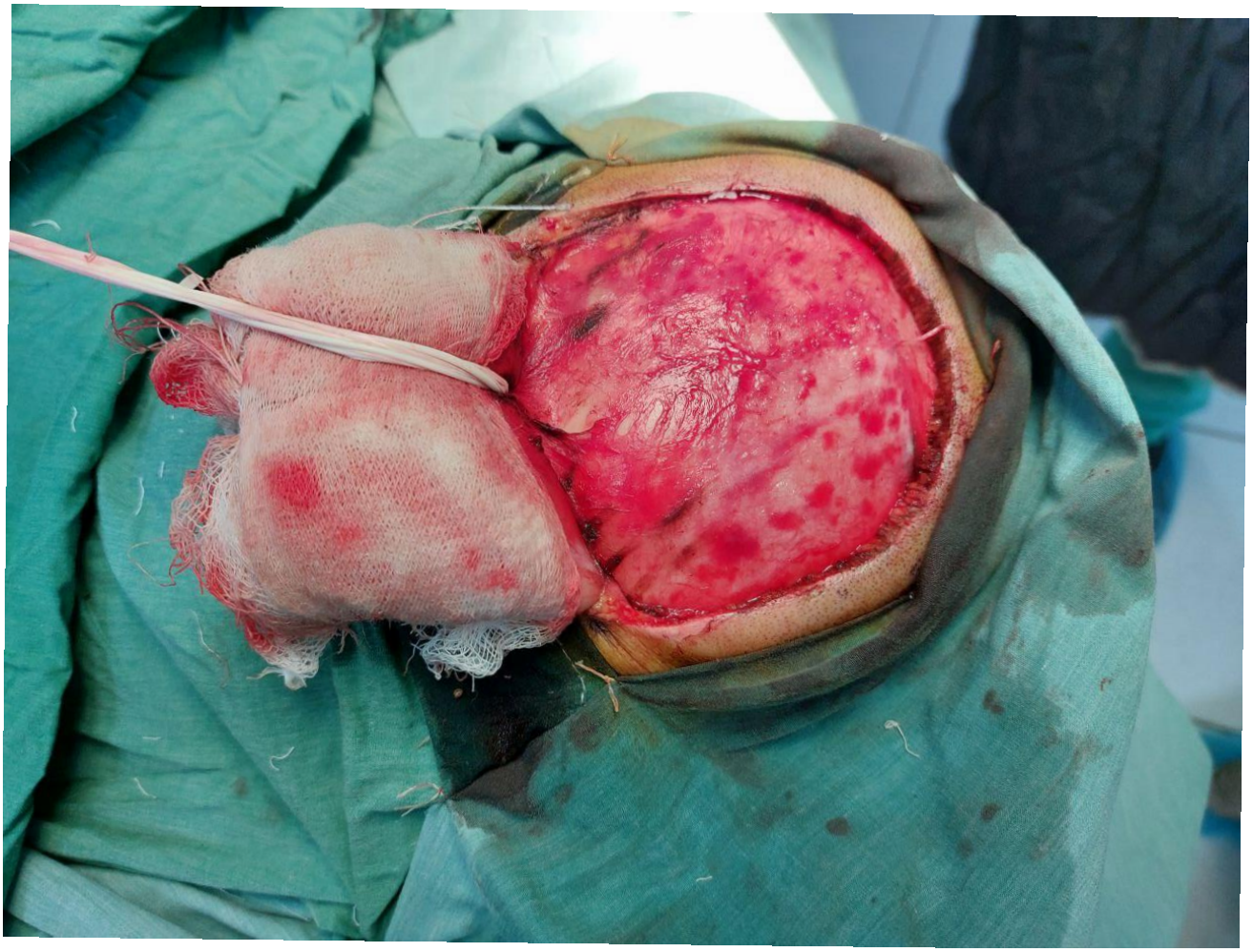
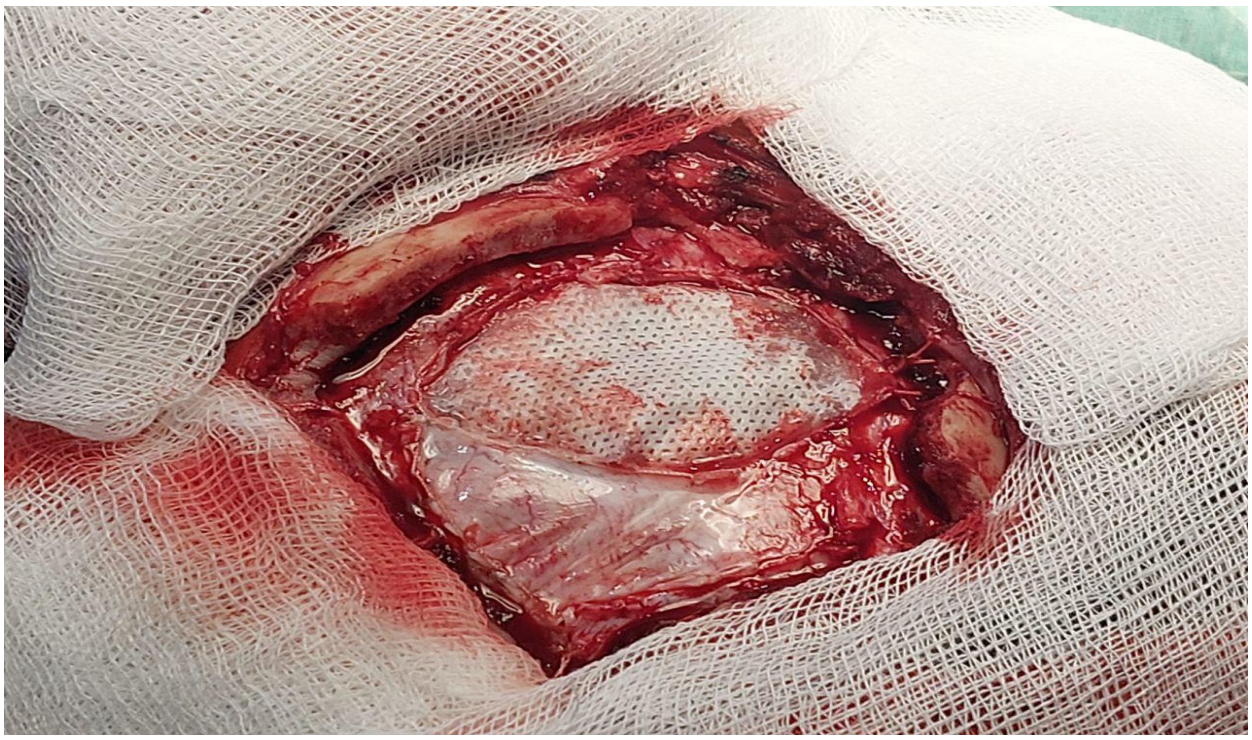
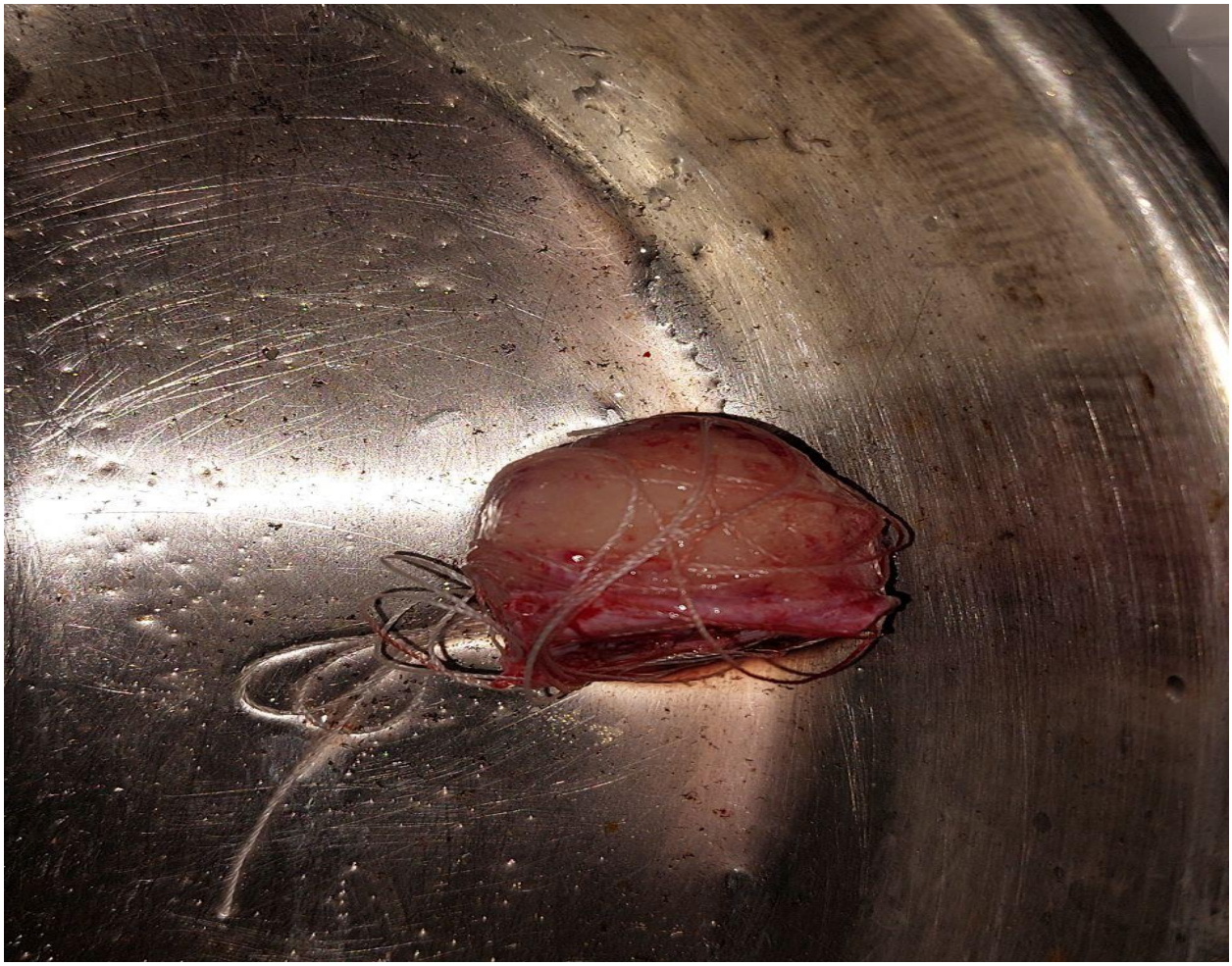


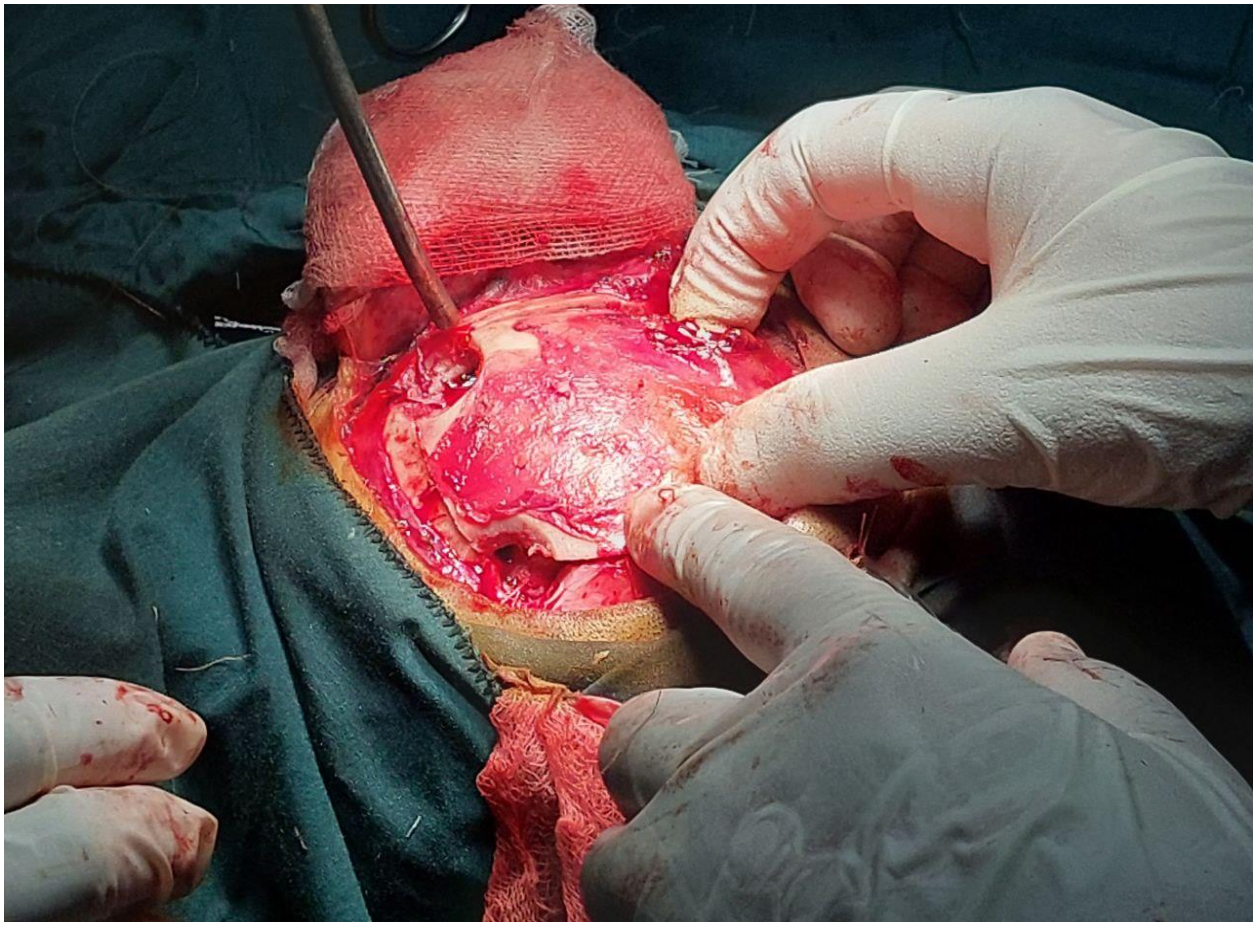
Fig1.MRI in three projections. Meningioma located in the right frontal region of the brain











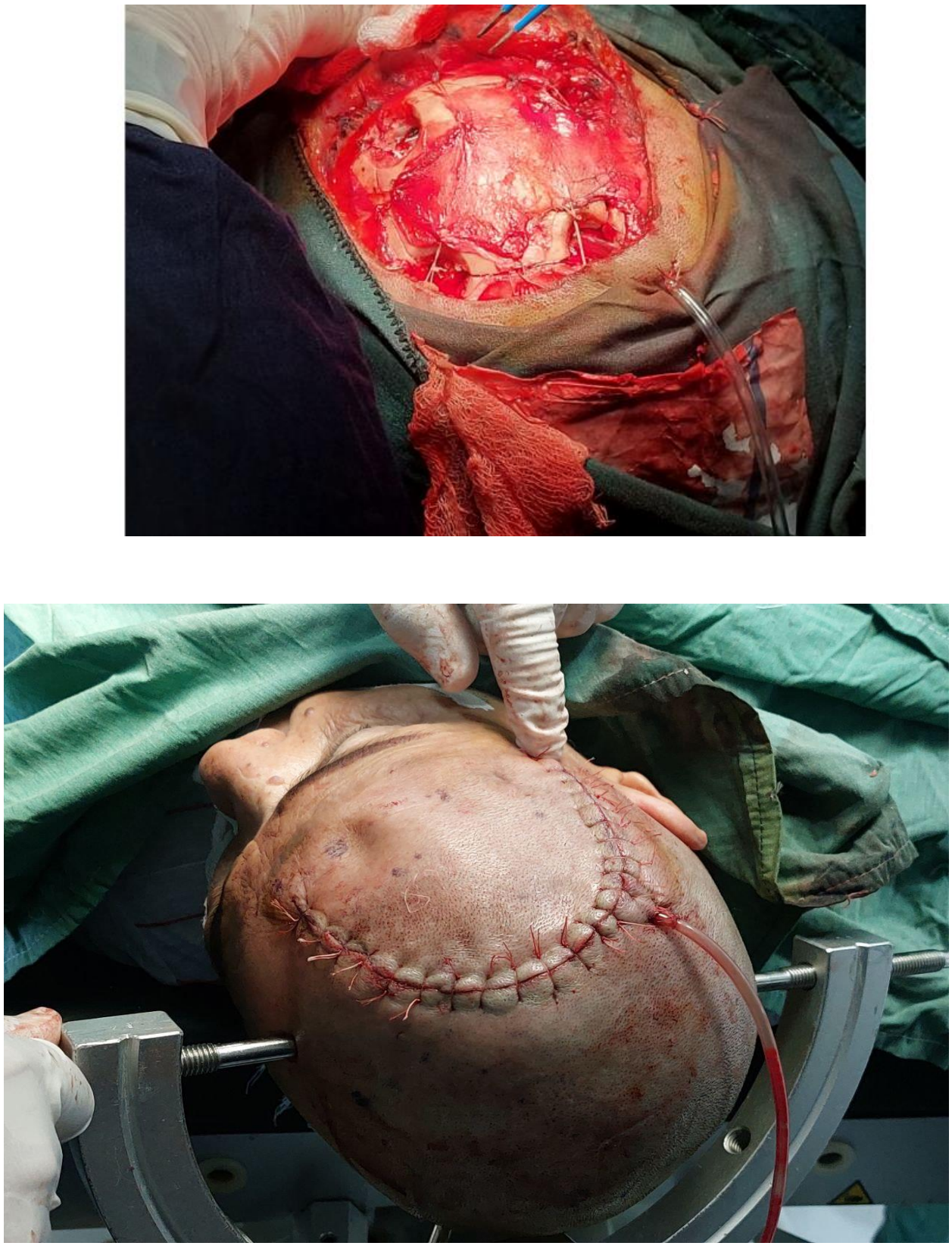


Fig2. Intraoperative photographs

The general condition of the patients was assessed before surgery and after surgery using the Karnofsky scale. It describes the patient's level of functional status in terms of ability to care for oneself, activities of daily living, and physical activity. The studied patients had a neurological deficit on the Karnofsky scale of 50 points before surgery; after 1 week, 60 points in 27 (18%) patients after surgery. Before surgery, the Karnofsky scale was expected to be 60 points, after 2 months 70 points in 45 (30%) patients after surgery. In patients before surgery, the Karnofsky scale

was 70 points; after 6 months, 80 points were recorded in 78 (52%) patients after surgery

Conclusion

A study of the quality of life of patients with MSOG before and after the surgical period showed: 1. The level of quality of life of patients increases in the period up to 2 years after surgery and then stabilizes.

2. The dynamics showed the quality of life after the operation and the anamnesis coincides with the dynamics of the results of assessing the general condition on the Karnofsky scale.

3. There are higher quality of life indicators in people over 35 years of age after surgery.

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