Study: Magnetic resonance imaging of the brain/Multiple sclerosis examination with contrast enhancement.

MRI machine: Philips Achieva 1.5T.

Age: 62.

Sex: Female.

Race: Caucasian.

Brief anamnesis of the disease (complaints): Dynamics from 2022. Magnevist 20. Feeling that my vision has become worse, otherwise there is no change in well-being.

REPORT

The study was performed in comparison with the previous MRI examination dated 27.05.2022 in DICOM format.

A series of T1-, T2-, and FLAIR-weighted MR tomograms in three planes visualized supra- and infratentorial structures.

The midline structures are not displaced.

The cerebral cortex and white matter are properly developed.

In the frontal, parietal, temporal, occipital lobes, brainstem, corpus callosum, right hemisphere of cerebellum there are multiple foci of rounded and elongated shape (iso-hypointense on T1, hyperintense on T2 and FLAIR), mostly with clear contours, up to 1.2x1.2 cm in size. The foci were localized juxta- and subcortically, periventricularly and deep white matter. The largest of the foci are hypointense on T1 according to the type of "black holes". The periventricular foci are located perpendicular to the corpus callosum (positive "Dawson's fingers" symptom). There is no mass effect from the foci.

At contrast enhancement: no foci of pathologic contrasting in the substance and brain membranes were revealed.

Dynamic study:

- no new foci revealed;
- no increase in size/structural changes/tendency to fusion of previously detected foci.

Criteria for spatial dissemination according to MacDonald, 2005 (at least 3 out of 4 criteria must be met)		
	Study	International MRI criteria for the diagnosis of MS
1) Total number of detected hyperintense foci on T2 and T2 flair	+	1 foci accumulating contrast or 9 hyperintense T2 foci
2) Subcortical foci	+	At least 1
3) Infratentorial foci	+	At least 1
4) Paraventricular localizationя	+	At least 3
5) Number of foci accumulating contrast agent	0	

Criteria for spatial dissemination according to MacDonald, 20010 (must match at least 2 of 4 in MS characteristic areas).		
Localization of focal changes	Study	International MRI criteria for the diagnosis of MS
1) Juxtacortical	+	≥ 1 hyperintense T2 foci
2) Periventricular	+	≥ 1 hyperintense T2 foci
3) Infratentorial	+	≥ 1 hyperintense T2 foci
4) In the spinal cord	+	≥ 1 hyperintense T2 foci

Lateral ventricles are symmetrical, size within age normometry, normal configuration, without periventricular infiltration. The 3rd ventricle is not dilated. The IVth ventricle is not dilated, not deformed.

The subarachnoid convexital spaces are irregularly and not sharply dilated in the area of frontal and parietal lobes. The sulci are not dilated.

Basal cisterns are not dilated, not deformed.

Chiasmal area without features, pituitary gland is not enlarged in size, pituitary tissue has a normal signal. The chiasmal cistern is not changed. The pituitary funnel is not displaced. Parasellar structures without features.

The cerebellum is of usual shape, differentiation of gray and white matter is preserved, furrows are not dilated. The cerebellar tonsils are located at the level of the greater occipital foramen.

A retrocerebellar arachnoidal liquor cyst, without structural changes in the adjacent parts of the brain, 1.0x1.4x1.4x2.0 cm in size, was detected.

Craniovertebral junction - without peculiarities.

No additional formations in the area of the pontine-cerebellar angles were detected. The internal auditory canals are not dilated.

The structure of the orbits is not changed. The eyeballs are located symmetrically in the orbital cavity, have a spherical shape, homogeneous structure, normal size, the membranes are not changed. The optic nerves have clear, smooth contours and correct course, not thickened. The perineural space of optic nerves is not dilated.

Pneumatization of facial sinuses is not disturbed.

CONCLUSION

MR sign of multiple supra- and infratentorial foci in the white matter (specific for the manifestation of demyelinating disease /MS lesions/, outside the phase of active foci). Slight enlargement of the convexital subarachnoid space. Retrocerebellar arachnoidal liquor cyst (developmental variant).

In comparison with the previous MRI study dated 27.05.2022 in DICOM format:

- no new foci detected;

- no increase in size/structural changes/tendency to fusion of previously detected foci.

RECOMMENDATIONS

Consultation of the attending physician.

Year of study and report: 2023