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Usefulness of MRI in patients with the remote history of severe course of tick-borne encephalitis

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Objectives

The aim of the study was the evaluation of the remote lesions in brain MRI in patients with the history of tick-borne encephalitis (TBE) and assessment if lesions observed in acute phase are also seen after disease. Moreover, we wanted to assess if dexamethasone implementation to therapy contribute to lesions in brain and if postencephalitic autoimmune disease after TBE is seen.

Methods

Eighty two patients, in whom at the beginning of hospitalization head CT or MRI was performed were enrolled in the study. Among this group in 19 patients MRI was performed 6 months – 5 years after the disease.

Results

The most commonly observed lesions in 5 years observation were: cortico-subcortical atrophy with widening of the anterior horns of lateral ventricles, minor outbreak of hiperintensive lesions in T2-weighted images localized in periventricular white matter of the brain. Even patients with severe course of the diseases or after dexamethasone therapy did not have long lasting lesions in brain. No features of postencephalitic autoimmune disease after TBE was observed.

Conclusions

1. Lesions observed in imaging studies on acute phase of TBE and then during long-lasting follow up are not specific: subcortical atrophy and vascular changes are the most common.
2. Among patients with remote history of severe course of TBE increase in percentage of brain lesion, in comparison with examination performed in acute stage, is observed. It may be a result of inflammatory process.
3. Postencephalitic autoimmune disease is not observed after TBE.
4. Steroids usage does not cause severe brain lesions.

Key words: MRI; Encephalitis; Tick-borne; brain atrophy

Table.1 Characteristics of brain lesions in examination in acute phase of TBE and in follow-up examination

Character of lesion	Number of patients in examination I with lesions as below	Number of patients in examination II with lesion as below	Number of patients in examination II in whom lesion from examination I disappeared
Virchow–Robin spaces dilation	6	8	1
Virchow–Robin spaces dilation in pons	0	1	0
Widening lateral ventricles	3	9	0
Asymmetry of temporal horns	1	3	0
Cortico-subcortical atrophy	4	11	0
Periventricular lesion	1	4	1
Lesions in temporal lobe	1	4	1
Lesions in parietal lobe	0	3	0
Vascular lesions	6	14	3
Lamina tecti lesion	0	0	0
Arachnoid cyst	1	2	1

Fig.1.

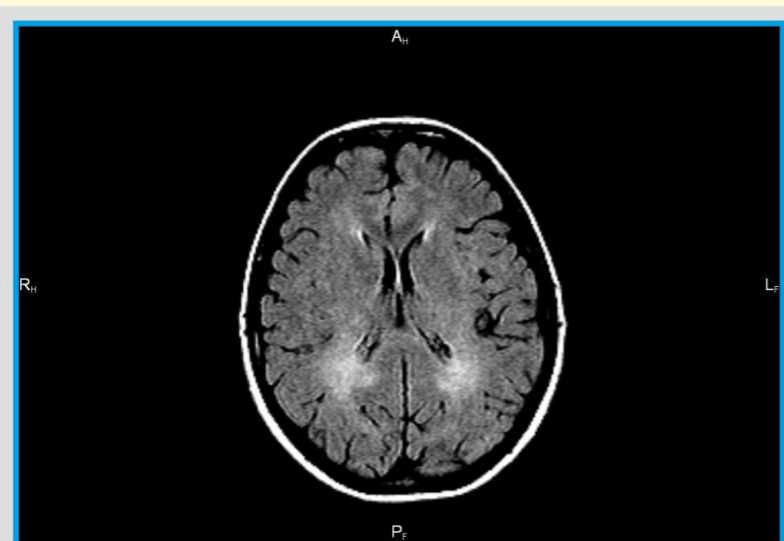


Fig.2.

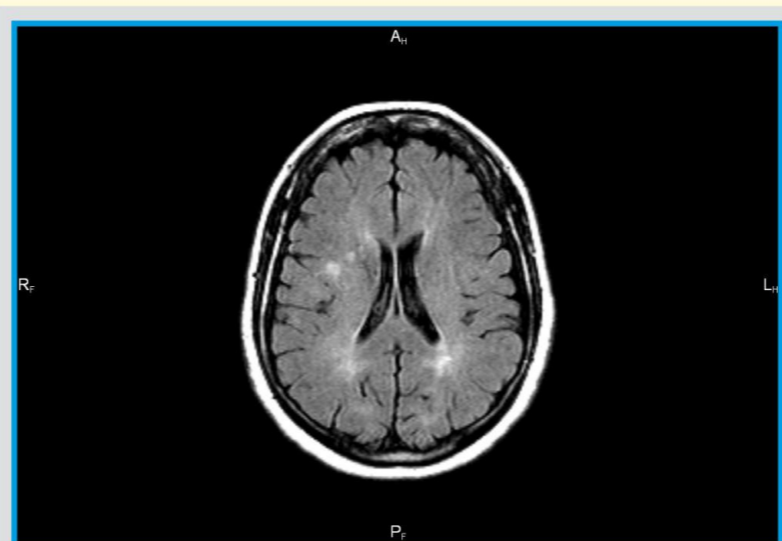


Fig.3.

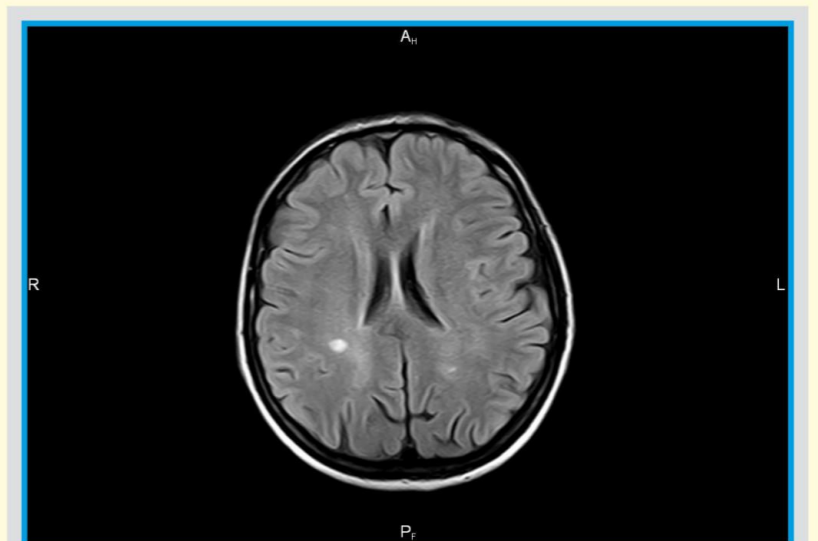


Figure legend

Fig.1. Female after TBE; brain MRI; FLAIR. In white matter of the parietal lobe small hyperintense foci.

Fig.2. Female after TBE; brain MRI; FLAIR. Numerous, small hyperintense foci in both hemispheres: periventricular and subcortical lesion.

Fig.3. Female after TBE; brain MRI; FLAIR. Softly demarcated hyperintense foci in both lateral ventricles around posterior horns.