IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 1, August 2023

Investigation of Japanese Encephalitis in MRI and f-MRI

Dr. Chandra Anjaiah

Department of Zoology, Osmania University, Hyderabad, Telangana, India

Abstract: We document the fMRI features in eight patients with Japanese encephalitis. MRI was carried out on a 1.5 T system within 10±60 days of onset. In all the patients MRI revealed bilateral thalamic lesions, haemorrhagic in five. Signal changes were present in the cerebrum in four patients, the midbrain and cerebellum in three each, the pons in two and the basal ganglia in one. The lesions were haemorrhagic in three of the four patients with lesions in the cortex, two of the three with lesions in the midbrain and cerebellum, but the pontine lesions were haemorrhagic in both patients. Spinal cord involvement was seen in one of the three patients who underwent fMRI. In two patient's fMRI was repeated 3 years after the onset, showing marked reduction in ab-normal signal; and all the lesions gave low signal on both T1- and T2-weighted images. Bilateral thalamic involvement, especially haemorrhagic, may be considered characteristic of Japanese encephalitis, especially in endemic areas.

Keywords: JE, fMRI, spinalcord, haemorrhagic.

REFERENCES

- [1]. Umenai T, Krzysko R, Bektimorov TA, Assaad FA (1985) Japanese encephalitis: current worldwide status. Bull WHO 63: 625±631
- [2]. Mathur A, Arora KL, Rawat S, Chaturvedi UC (1986) Persistence, latency and reactivation of Japanese encephalitis virus infection in mice. J Gen Virol 67: 381±385
- [3]. Bharucha NE, Bharucha EP (1991) Neurology in India. In: Bradley WG, Daroff RB, Fenichel GM, Marsden CD (eds) Neurology in clinical practice. Butterworth-Heinemann, Boston, pp 1925±1941
- [4]. Misra UK, Kalita J, Jain SK, Mathur A (1994) Radiological and neurophysiological changes in Japanese encephalitis. J Neurol Neurosurg Psychiatry 57: 1484±1487
- [5]. Yagishita A, Nakano I, Ushioda T, Ot-suki N, Hasegawa A (1995) Acute encephalopathy with bilateral thalamote-gmental involvement in infants and children, imaging and pathology find-ings. AJNR 16: 439±447
- [6]. Bradley WG (1993) MR appearance of haemorrhage in the brain. Radiology 189: 15±26
- [7]. Johnson RT, Burke D, Elwell M, Leake CJ, Nisalak A, Hoke CH, Lorosomru-dee W (1985) Japanese encephalitis: immunocytochemical studies of viral antigen and inflammatory cells in fatal cases. Ann Neurol 18: 567±573
- [8]. Shoji H, Hiraki U, Kuwasaki N, Toyomasu T, Kaji M, Okudera T (1989) Jap-anese encephalitis in the Kurume re-gion of Japan: CT and MRI findings. J Neurol 236: 255±259
- [9]. Shoji H, Murakami T, Murai I, Kida H, Sato Y, Kojima K, Abe T, Okudera T (1990) Follow up study by CT and MRI in three cases of Japanese encephalitis. Neuroradiology 32: 215±219
- [10]. Thulborn KR, Atlas SW (1991) Intra-cranial hemorrhage. In: Atlas SW (ed) Magnetic resonance imaging of the brain and spine. Raven Press, New York, pp 175±222
- [11]. Partlow GD, del Carpio-O' Donovan R, Melanson D, Peters TM (1992) Bilat-eral thalamic glioma: review of eight cases with personality changes and mental deterioration. AJNR 13: 1225± 1230
- [12]. Kobayashi T, Yoshida J, Kida Y (1989) Bilateral germ cell tumours involving the basal ganglia and thalamus. Neuro-surgery 24: 579±583
- [13]. Drayer BP (1988) Imaging of aging brain. II. Pathological conditions. Radi-ology 166: 797±806

DOI: 10.48175/568



IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 1, August 2023

- [14]. Harter SB, Nokes SR (1995) Gadolin-ium-enhanced MR findings in a pediat-ric case of Wernike's encephalopathy. AJNR 16: 700±702
- [15]. Volt T, Lemberg P (1987) Damage of thalamus and basal ganglia in asphyxi-ated full-term neonates. Neuropaediatrics 18: 176±181
- [16]. Wang HS, Huang SC (1993) Infantile panthalamic infarct with a striking sonographic finding: the abright thalamus. Neuroradiology 35: 92±96
- [17]. Erbguth F, Brenner P, Schuierer G, Druschky K-F, NeundoÈ rfer B (1991) Diagnosis and treatment of deep cere-bral vein thrombosis. Neurosurg Rev 14: 145±148
- [18]. Endo M, Ichikawa F, Miyasaka Y, Yada K, Ohwada T (1991) Capsular and tha-lamic infarcts caused by tentorial her-niation subsequent to head trauma. Neuroradiology 31: 296±299
- [19]. De Haan J, Grossman RI, Civitello L, et al (1987) High field magnetic resonance imaging of Wilson's disease. J Comput Assist Tomogr 11: 132±135
- [20]. Braffman BH, Trojanowski JQ, Atlas SW (1991) The aging brain and neuro-degenerative disorders. In: Atlas SW (ed) Magnetic resonance imaging of the brain and spine, Raven Press, New York, pp 567±624
- [21]. Brunberg JA, Kanal E, Hirsch W, Davis PL, Van Thiel DH (1988) Chronic ac-quired hepatic failure: MR imaging of the brain. AJNR 9: 1034±1035
- [22]. Chang KH, Han MH, Kim HS, Wie BA, Han MC (1992) Delayed encephalopathy after acute carbon monoxide intoxication: MR imaging features and dis-tribution of cerebral white matter lesions. Radiology 184: 117±122
- [23]. Jacobs BC, Brandt-Zawadski M (1992) Ischaemia. In: Stark DD, Bradley WG (eds) Magnetic resonance imaging.
- [24]. Mosby, St. Louis, pp 636±669
- [25]. Medina L, Chi TL, DeVivo DC, Hilal SK (1990) MR findings in patients with subacute necrotizing encephalopathy (Leigh's syndrome). Correlation with biochemical defect. AJNR 11: 379±384
- [26]. Schroth G, Kretzschmar K, Gawehn J, Voight K (1987) Advantages of magnetic resonance imaging in the diagnosis of cerebral infections. Neuroradiology 29: 120±126
- [27]. Tarr RW, Edwards KM, Kessler RM, Kulkarni MV (1987) MRI of mumps encephalitis: comparison with CT evaluation. Pediatr Radiol 17: 59±62
- [28]. Tsuchiya K, Yamauchi T, Furui S, et al (1988) MR imaging vs CT in subacute sclerosing panencephalitis. AJNR 9: 943±946
- [29]. Atlas SW, Grossman RI, Goldberg HI, et al (1986) MR diagnosis of acute disseminated encephalomyelitis. J Comput Assist Tomogr 10: 798±801
- [30]. Olsen WL, Longo FM, Mills CM, Nor-man D (1988) White matter disease in AIDS: findings at MR imaging. Radiology 169: 445±448
- [31]. Kumar R, Agarwal SP, Waklu I, Misra PK (1991) Japanese encephalitis ± an encephalomyelitis. Indian Pediatr 23: 1525±1533

DOI: 10.48175/568

[32]. Zimmerman HM (1946) Pathology of Japanese encephalitis. Am J Pathol 22: 965±991

