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Introduction

Pediatric tuberculosis accounts for 15-40% of all TB cases. The most common manifestation of CNS tuberculosis is leptomeningitis with enhancing basal exudates. Ventricular involvement is uncommon and occurs in late stages of disseminated TB meningitis.

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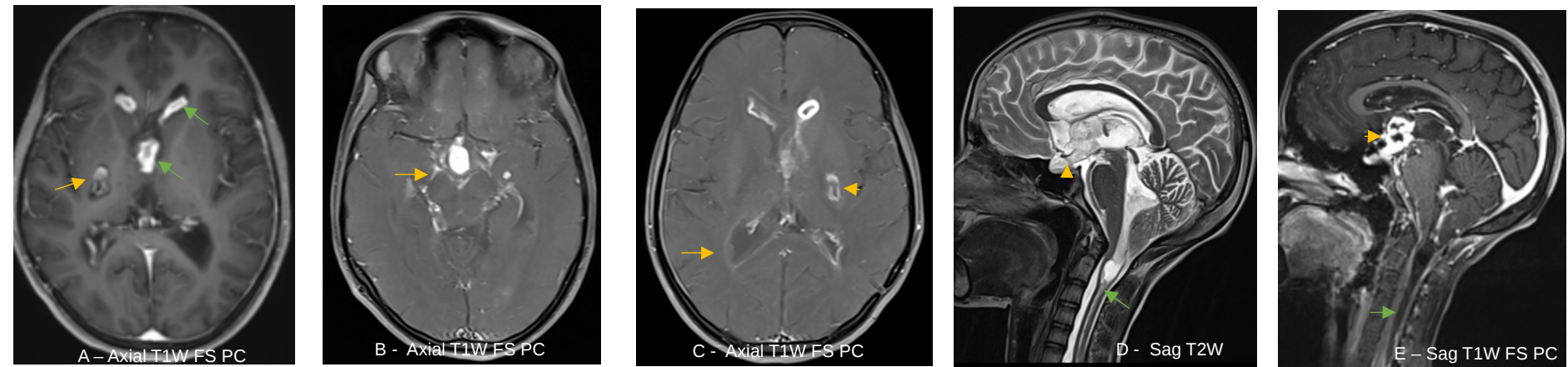
We present a case of 16-year-old female with disseminated CNS tuberculosis showing intra ventricular spread.

Clinical Presentation

16-year-old female presented with history of headache and projectile vomiting for 3 days with no associated fever. She was diagnosed with CNS tuberculosis, 4yrs back. Previous MRI showed tuberculoma in right capsuloganglionic region and communicating hydrocephaly for which a VP shunt was placed and ATT started. The patient discontinued ATT after one month. Presently on examination, the patient was severely malnourished and tachycardic. Systemic examination was normal.

Lab Investigations – CSF analysis revealed lymphocytic predominance with increased sugars and proteins. CSF did not show any bacterial /fungal growth and CBNAAT was negative.

Imaging –MRI Brain (P+C)



1. Ring enhancing lesion in the bilateral capsuloganglionic regions (yellow arrow in A, short arrow in C)
2. Enhancing basal cisternal exudates (Arrow in B)
3. Shaggy ependymal enhancement (long arrow in C)
4. Multiple intraventricular tuberculoma in the bilateral lateral ventricles, fourth ventricle and third ventricle extending into the infundibular recess (Green arrows in A, yellow arrows in D and E)
5. Thickening of the spinal dura with enhancement and dilation central canal s/o hydromyelia (Green arrows in D &E).

Discussion

Neuro-tuberculosis accounts for around 10-15% of extrapulmonary tubercular infections and can present in myriad forms. Ventricular involvement is a very uncommon and late complication of TB meningitis. Intraventricular spread occurs as a result of rupture of a subependymal parenchymal focus into the ventricular system/ spread through the ventricular foramina. It may present as intraventricular granuloma, ependymitis, ventriculitis and/or choroid plexitis.

Treatment options include ATT, a CSF diversion procedure for symptomatic hydrocephalus, intra thecal steroid and IV mannitol in cases of raised ICP. Follow up: Our patient was put on ATT and discharged.

Conclusion: This case showcases protean manifestations of CNS tuberculosis and highlights the prolonged morbidity and complications the disease causes especially in non-compliant cases.

References: 1. Tsai K-S, Chang H L, Chien S T, Chen K L, Chen K H, Mai M H, Chen K T. Childhood Tuberculosis: Epidemiology, Diagnosis, Treatment, and Vaccination, Pediatrics & Neonatology, 2013; 54:5, 295-302. 2. Gupta RK, Kumar S. Central nervous system tuberculosis. Neuroimaging Clin N Am. 2011; 21:795–814. 3. Extrapulmonary Tuberculosis: Pathophysiology and Imaging Findings Sara Yukié Rodriguez-Takeuchi, Martin Eduardo Renjifo, and Francisco José Medina RadioGraphics 2019 39:7, 2023-2037 4. Khatri GD, Krishnan V, Antil N, Saigal G. Magnetic resonance imaging spectrum of intracranial tubercular lesions: one disease, many faces. Pol J Radiol. 2018 Dec 29;83: e524-e535. doi: 10.5114/pjr.2018.81408. PMID: 30800191; PMCID: PMC6384409. 5. Khatri GD, Krishnan V, Antil N, Saigal G. Magnetic resonance imaging spectrum of intracranial tubercular lesions: one disease, many faces. Pol J Radiol. 2018 Dec 29;83: e524-e535. doi: 10.5114/pjr.2018.81408. PMID: 30800191; PMCID: PMC6384409. 6. Kunju PAM, James J. Central Nervous System Tuberculosis in Children. Pediatr Inf Dis 2019;1(1):23-29.