

Central Nervous System Tuberculosis in a Large Healthcare System

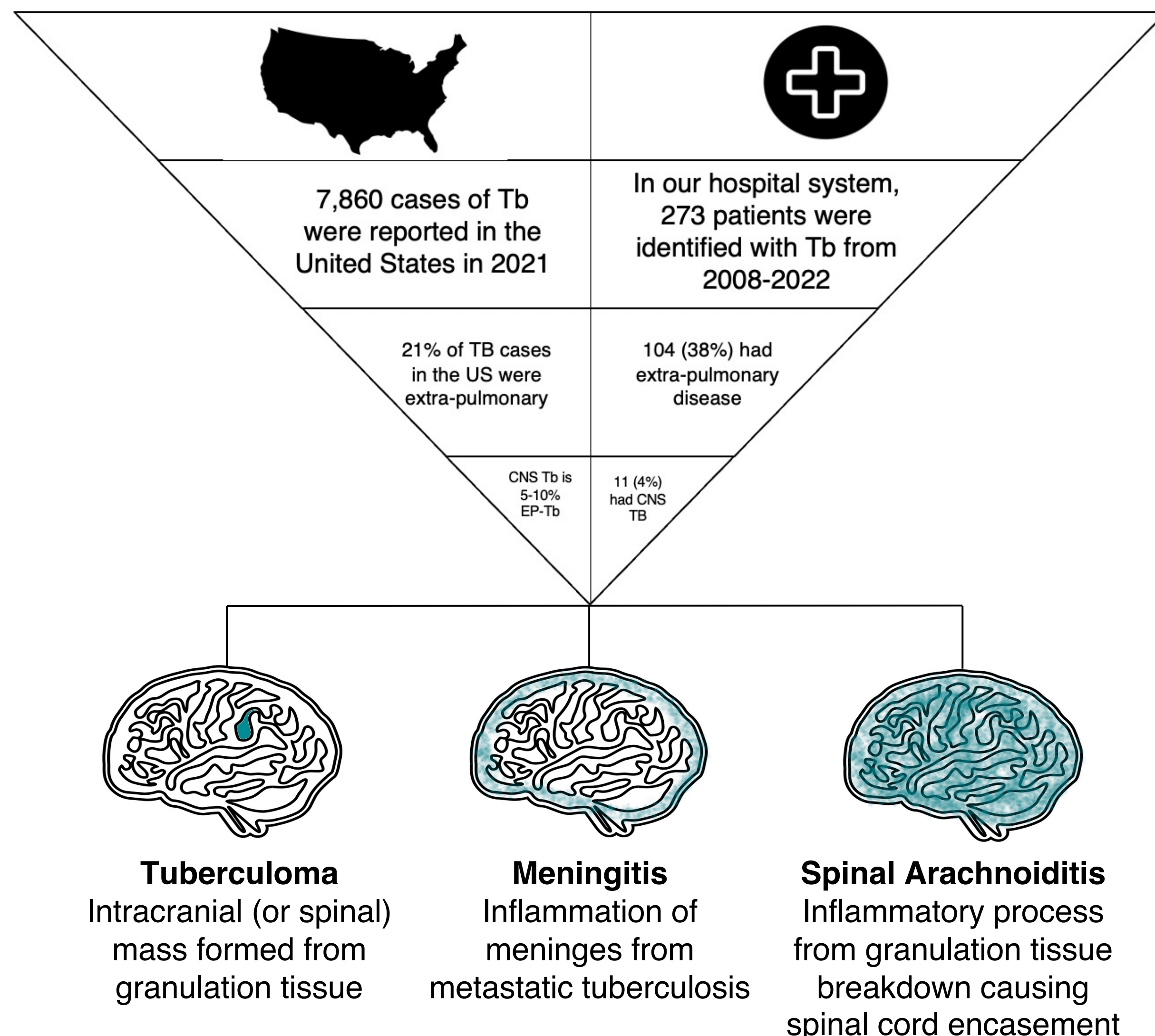
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Aims and Methods

- The goal of this study is to examine the presentation, diagnostic studies, and associated comorbidities of CNS-Tb
- Cases of culture-confirmed CNS-TB were identified in a hospital database from 2008-2022
- This is a retrospective case series of 11 adults with confirmed CNS-TB
- Given the rarity of this condition, there is a very little information from the past decade describing CNS-TB presentation



Results

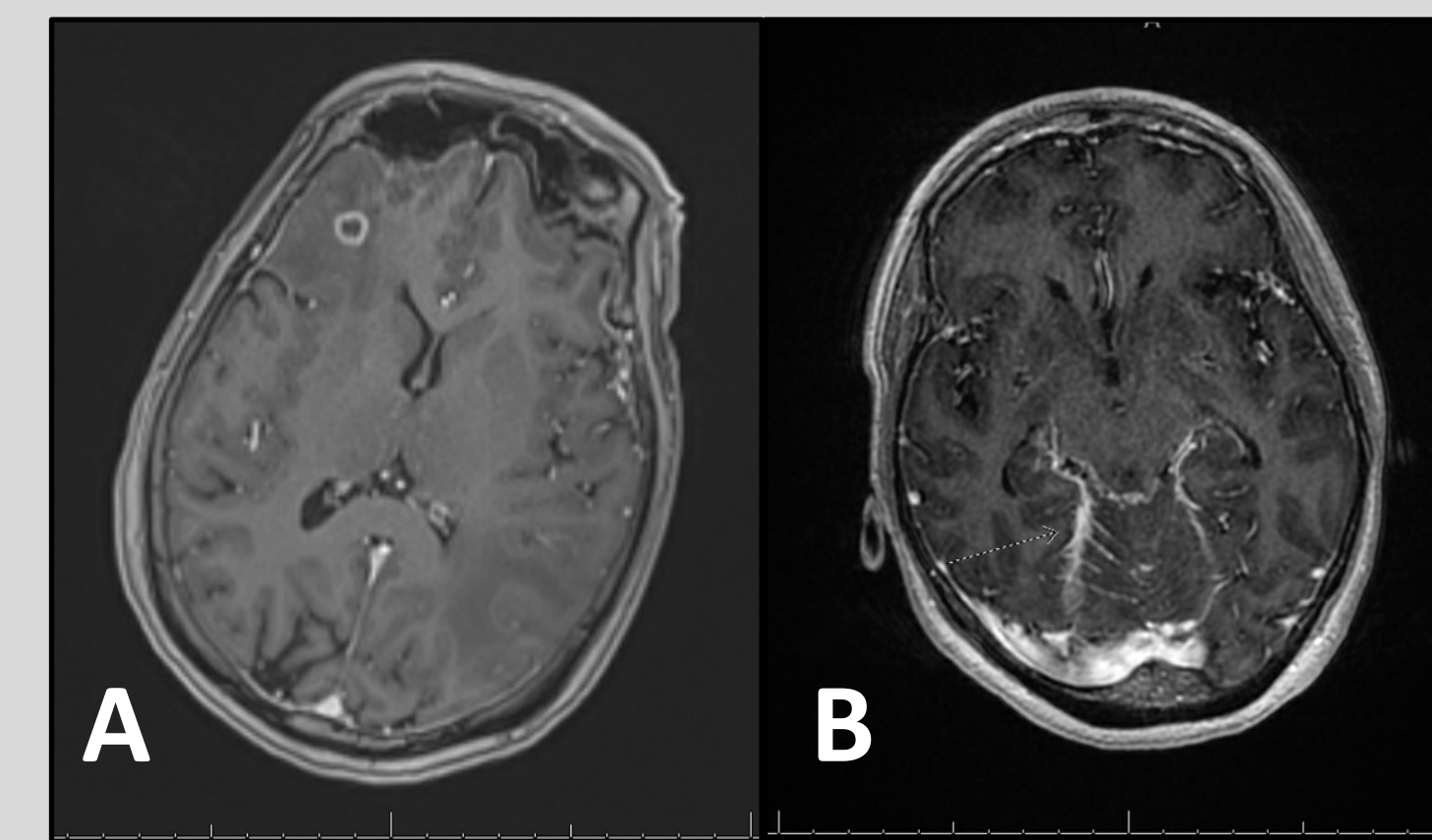
Patient Data

Total Cases	11
Median Age	42 (23 - 55)
Gender	
Female	6 (55%)
Male	5 (45%)
Race	
Caucasian	1 (9%)
African American	9 (82%)
Asian	1 (9%)
Ethnicity	
Hispanic or Latino	1 (9%)
Not H/L	10 (81%)
HIV	
Positive	5 (45%)
Mean CD4 count (range)	100 (8-255)
Negative	6 (55%)
BRMC Classification	
I	4 (36%)
II	7 (67%)
III	0
Pulmonary Disease	5 (45%)
In hospital mortality	1 (9%)

Diagnostic Data

LP Characteristics	Total (n=9)
CSF Studies	
CSF WBC [Mean (Range)]	295 (4-808)
CSF Protein [Mean (Range)]	605 (27-4476)
CSF Glucose [Mean (Range)]	31 (12-64)
Imaging Characteristics	
Patients with Imaging (CT or MRI)	11
Abnormal Imaging	8
Tuberculoma	5
Arachnoiditis	1

Representative Images



A - Right frontal lobe representative of an intracranial tuberculoma
 B - Asymmetric dural enhancement along the right tentorial leaflet suggestive of an inflammatory meningoencephalitis

Discussion

- 38% of patients diagnosed with TB at our center had extrapulmonary disease compared to 17.5% reported in the literature¹
- The 4% rate of CNS-TB was similar to what has been previously reported^{1,2}
- Our series describes abnormal diagnostic tests including abnormal brain imaging and CSF studies showing leukocytosis, pleocytosis, and hypoglycorrhachia, consistent with previously described findings³
- Although numbers were small, no significant difference was found between HIV-positive and HIV-negative patients
- Given the significant global mortality of this disease, this series highlights the need for more current studies describing the presentation and diagnostic characteristics of modern CNS-TB so clinicians can better recognize and treat the condition without delay

References

- Rieder, H. L., Snider Jr, D. E., & Cauthen, G. M. (1990). Extrapulmonary tuberculosis in the United States 1-3. *Am. Rev. Respir. Dis.*, 141, 347-351.
- Wilkinson, R. J., Rohlwick, U., Misra, U. K., Van Crevel, R., Mai, N. T. H., Dooley, K. E., ... & Thwaites, G. E. (2017). Tuberculous meningitis. *Nature reviews neurology*, 13(10), 581-598.
- Thwaites, G. E., van Toorn, R., & Schoeman, J. (2013). Tuberculous meningitis: more questions, still too few answers. *The Lancet Neurology*, 12(10), 999-1010.