



Two Isn't Better than One - a case of Polymicrobial bacterial meningitis involving *Ralstonia pickettii* and *Pseudomonas stutzeri*

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BACKGROUND

Polymicrobial bacterial meningitis is rare and usually associated with trauma or another focus. Involved species are usually gram positives or anaerobes. While polymicrobial nervous system infections are common among immunocompromised individuals, involvement of multiple bacterial species is unusual.

CASE REPORT

A 24-year-old Filipino male, recently diagnosed with HIV, was admitted after a three months of progressive weight loss, tremors and left-sided weakness. He had sustained a laceration on the right supraorbital area one week prior. His baseline CD4 count was 43 cells/ul.

Cranial CT revealed multiple non-enhancing bilateral basal ganglial lesions without any meningeal enhancement.

Empiric cotrimoxazole and ceftriaxone were started. Lumbar puncture revealed opening pressure of 49 cm H₂O and free flowing cerebrospinal fluid (CSF).

Workup included the following: CSF was clear, colorless with 1 RBC/HPF 1 WBC/HPF with 100% lymphocytic predominance. CSF glucose and protein were 3.58 mmol/L and 763.1mmol/L respectively. CSF India ink, CALAS, rapid plasma reagin, multiplex PCR returned negative. Initial gram stain and culture of the CSF were negative. Both serum rapid plasma reagin (1:32 dilutions) and *Treponema pallidum* particle agglutination were reactive. Serum *Toxoplasma* IgG was high.

Unexpectedly, CSF subculture on brain-heart infusion isolated both *Ralstonia pickettii* and *Pseudomonas stutzeri* after six days. Ceftriaxone was shifted to ceftazidime and given for 14 days with marked clinical improvement. Subsequent systemic CT scans and a 2D echocardiogram failed to reveal occult foci.

Antiretrovirals were started (TDF/3TC/DTG) and he was discharged on both maintenance cotrimoxazole and azithromycin prophylaxis.

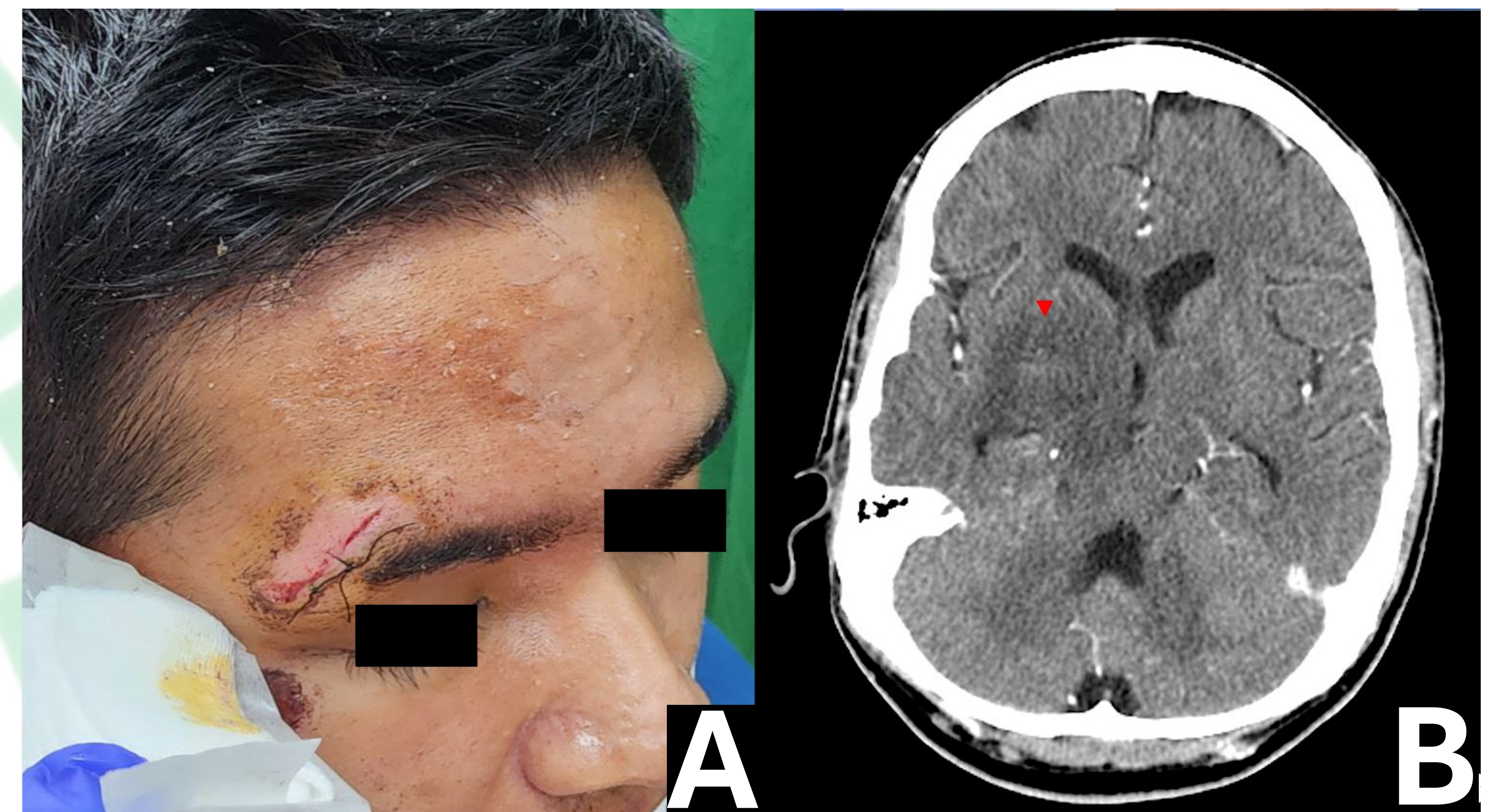


Figure 1 (A) Location of the old laceration on the right supraorbital area. (B) nonenhancing basal ganglial lesion, right side highlighted with the red triangle.

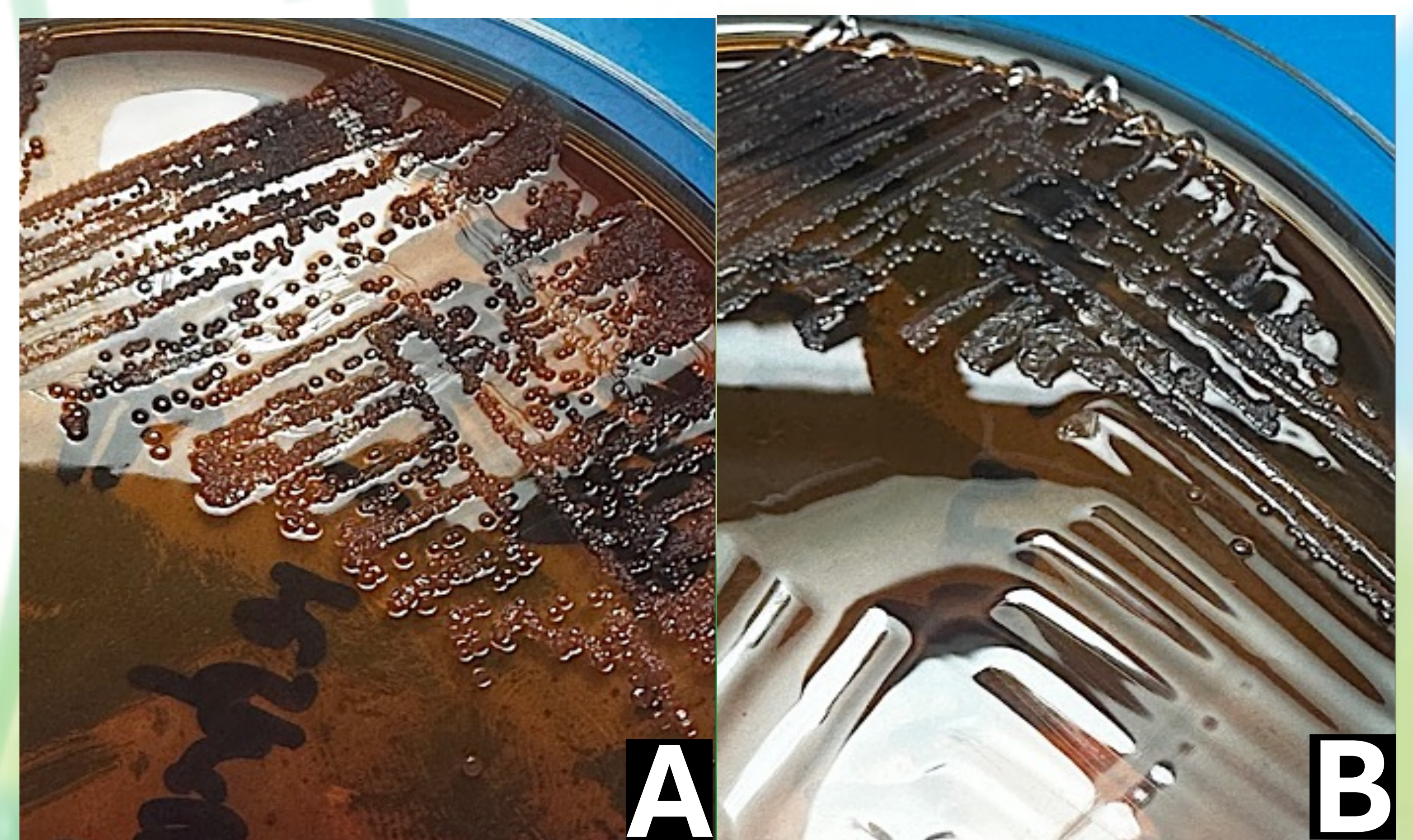


Figure 2 Isolates derived from brain heart infusion broth subculture of patient's CSF. (A) *Ralstonia pickettii* presenting as dry, wrinkled, colorless, nonlactose fermenting colonies on MacConkey agar. (B) *Pseudomonas stutzeri* presenting as spreading, colorless, nonlactose fermenting colonies on MacConkey agar.

DISCUSSION AND CONCLUSION

The isolation of *Ralstonia pickettii* and *Pseudomonas stutzeri* in the CSF prompted a search for other foci or the possibility of laboratory contamination. On further investigation, no other foci were seen and other specimens using the same batch of brain heart-infusion did not reveal identical isolates. Thus the conclusion that the only point of entry was the brow laceration which had since healed over.

Isolation of *Ralstonia pickettii* and *Pseudomonas stutzeri* are seldom reported and management remains a challenge. As both species supposedly have low virulence, this case shows the possibility of unusual pathogens among the immunocompromised. That both isolates were aerobic and no other possible sources of infection were identified highlights this case's remarkable nature.