



## Group B *Streptococcus* Meningitis Presenting as the Initial Symptom of a Recurrent Pituitary Adenoma

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Dear Editor,

Sepsis and meningitis due to group B *streptococcus* (GBS) predominantly occur in the first week of life. However, such invasive infections have been increasing among adults, especially in patients with underlying medical conditions.<sup>1,2</sup> Here, we present the first documented case of GBS meningitis as the initial clinical manifestation of recurrent pituitary adenoma.

A 55-year-old woman visited our emergency room with headache, high fever (38°C on admission), and neck rigidity lasting for 1 day. Eighteen years previously, she had undergone transsphenoidal resection (TSR) of a prolactinoma, with no relapse during the 12-year follow-up. Three months prior to her presentation, she had experienced an upper respiratory infection and watery rhinorrhea, and the watery rhinorrhea had persisted.

Upon admission, she exhibited an altered mental status. She had no signs of endocrinological disturbance or cranial nerve dysfunction. Cerebrospinal fluid (CSF) analysis revealed polymorphonuclear pleocytosis (20,800 cells/mm<sup>3</sup>), elevated protein (768 mg/dL), and low glucose (<1.0 mg/dL). Laboratory tests indicated elevated C-reactive protein (15.44 mg/dL), white blood cell count (31,500/mm<sup>3</sup>), and prolactin (>200 ng/mL). Brain magnetic resonance imaging revealed a strongly enhanced mass in the clivus, while preoperative computed tomography revealed a bone-destroying enhanced mass in the central skull base (Fig. 1A-E). CSF cultures confirmed ceftriaxone- and vancomycin-sensitive GBS. After antibiotic treatment for 9 days, we performed a direct endoscopic surgical repair of the skull base and resection of the pulsating mass with watery discharge in the right sphenoid sinus that had been revealed by nasolaryngoscopy (Fig. 1F). A histopathological evaluation confirmed a diagnosis of recurrent pituitary adenoma.

Patients with prolactinoma typically present with clinical features of hyperprolactinemia,<sup>3</sup> and meningitis accompanied by CSF rhinorrhea is a rare first clinical manifestation of invasive prolactinoma.<sup>4</sup> Furthermore, in patients with a history of prolactinoma, CSF rhinorrhea develops primarily following TSR or radiotherapy.<sup>5,6</sup> Although the leaking of CSF typically occurs in the early postoperative period following pituitary adenoma resection, delayed CSF rhinorrhea can occur more than 10 years after radiotherapy,<sup>7,8</sup> suggesting the involvement of delayed radiation necrosis in the mucous membranes of the skull.<sup>7,8</sup>

However, our patient had not received radiosurgery treatment, suggesting that CSF rhinorrhea was caused by invasion of the recurrent prolactinoma into the skull base. We therefore recommend that invasive pituitary adenoma be considered when treating patients with CSF rhinorrhea, especially in those with a history of pituitary adenoma.

### Conflicts of Interest

The authors have no financial conflicts of interest.

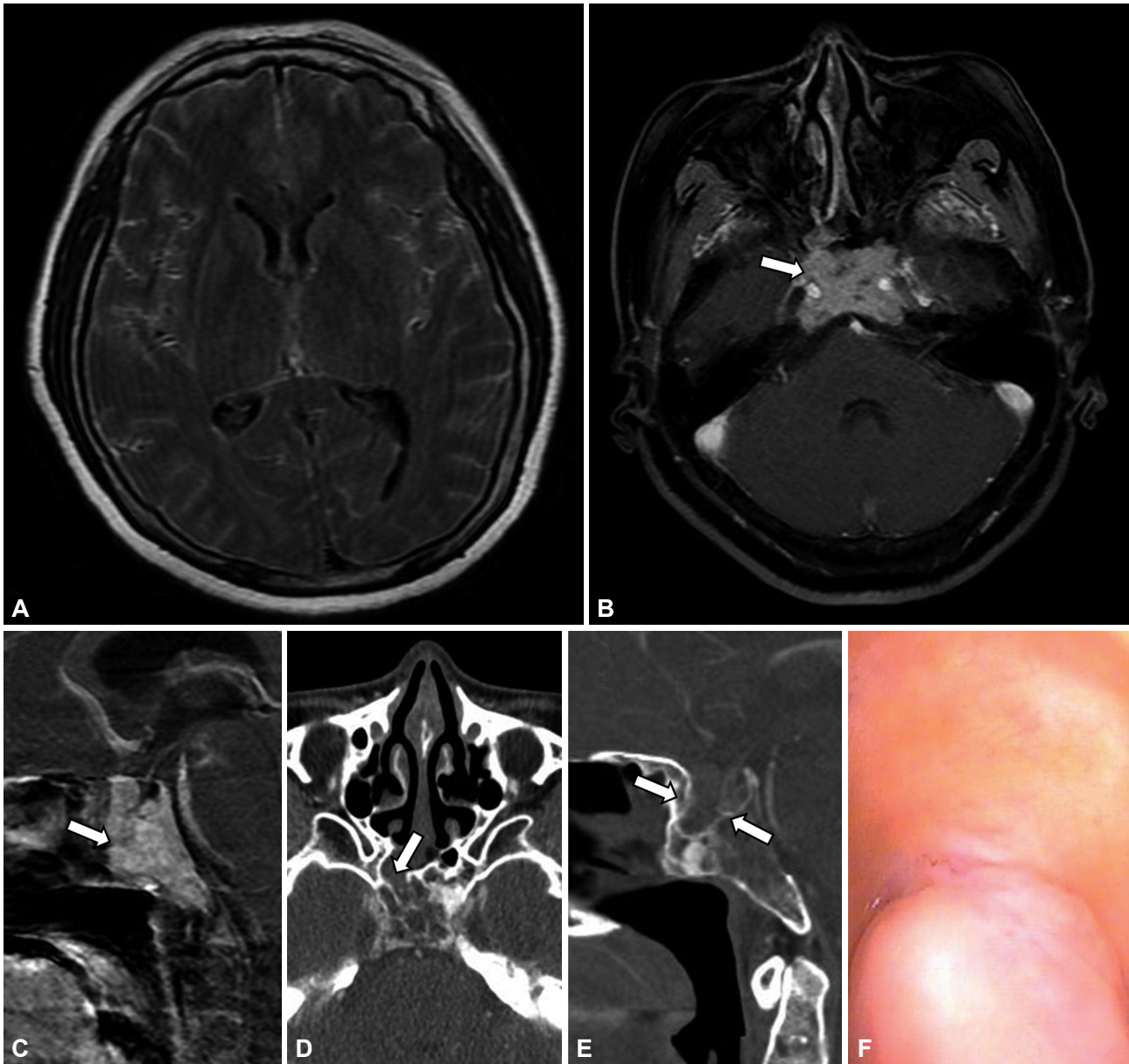
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**Fig. 1.** Invasion of a recurrent pituitary adenoma into the skull base in a 55-year-old woman. A: Axial fluid-attenuation inversion recovery image showing extensive bilateral hyperintensities in the cerebral sulci and Sylvian fissures, suggestive of leptomeningitis. B: Axial postcontrast T1-weighted image showing an enhanced mass encasing both internal carotid arteries in the central skull base (arrow). C: Sagittal postcontrast T1-weighted image showing a multilobulated strongly enhanced mass occupying the clivus and sphenoid sinus, with intrasellar extension (arrow). D: Preoperative computed tomography (CT) scan of the skull base showing a bone-destroying mass in the clivus and sphenoid sinus, with a widening of the right sphenoid sinus ostium (arrow). E: Sagittal CT scan of the skull base showing an enhanced mass in the clivus and sphenoid sinus, with destruction of the sellar floor and intrasellar extension (arrows). F: A nasolaryngoscopic examination revealed a pulsating mass and clear discharge in the right sphenoid sinus.

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