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1 BACKGROUND

Leptomeningeal carcinomatosis (LC) is a rare, serious complication of systemic malignancies from dissemination of malignant cells into the leptomeningeal space.

- Manifestations: headache, nausea, vomiting, diplopia, hearing loss, multiple cranial neuropathies.
- Early recognition is challenging but crucial for oncological management.

2 CASE PRESENTATION

A 57-year-old woman with known colorectal cancer receiving chemotherapy was admitted with a two-week history of progressive headache and neck pain, nausea, vomiting, diplopia, and subjective hearing impairment.

Examinations & Clinical Course

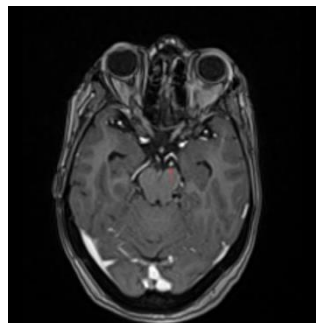
Ophthalmological evaluation: bilateral optic disc edema and bilateral abduction limitation (bilateral sixth nerve palsy).

Neurological exam: initially preserved; normal strength, no long-tract signs.

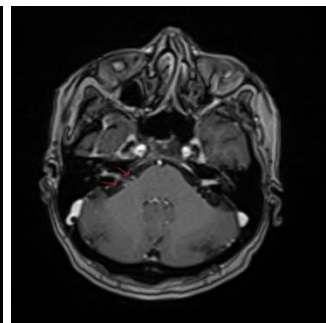
Progression: rapid confusion and impaired orientation during hospitalization.

3 NEUROIMAGING

Contrast-enhanced brain MRI showed prominent enhancement of multiple cranial nerves: bilateral CN V, VII, VIII and left CN III.



A) Left CN III



B) Bilat. CN VII & VIII

- **Bilateral CN VII & VIII:** significant enhancement.
- **Left CN III & bilateral CN V:** enhancement present.
- **CN VI spared:** no enhancement — false localizing sign of raised ICP.

Concordant with multiple cranial neuropathies. Initial differential included sarcoidosis and infectious etiologies.

DIAGNOSTIC PATHWAY

Known colorectal cancer + new headache / diplopia

Contrast-enhanced MRI: cranial nerve enhancement

Lumbar puncture: ↑ pressure, protein, cells

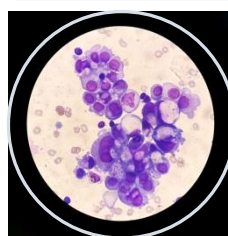
CSF cytology: atypical cells → LC confirmed

4 CEREBROSPINAL FLUID ANALYSIS

Parameter	First LP	Subsequent LP
Opening Pressure	—	29 cmH ₂ O (↑)
Cell Count	42 /mm ³	12 /mm ³
Predominance	Mononuclear	Pleocytosis
Protein	—	556 mg/dL (↑)

Microbiology: CSF culture and meningitis panel were negative.

5 CYTOLOGY (LIQUID-BASED)



Atypical cells detected — raising suspicion for leptomeningeal malignant involvement:

- Large, pleomorphic nuclei
- Irregular nuclear contours
- Prominent nucleoli

6 CLINICAL OUTCOME & CONCLUSION

Neurosurgical evaluation also considered leptomeningeal involvement; the patient was referred to internal medicine/oncology with a preliminary diagnosis of **leptomeningeal carcinomatosis**.

CONCLUSION: In patients with colorectal cancer, subacute headache, diplopia, and multiple cranial neuropathies should raise suspicion for leptomeningeal dissemination. Detailed neurological examination, contrast-enhanced neuroimaging, and CSF cytology together are essential for timely diagnosis and oncological management.

7 REFERENCES

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Keywords: Leptomeningeal carcinomatosis, colorectal cancer, leptomeningeal metastasis, multiple cranial neuropathies, cranial nerve enhancement, cerebrospinal fluid cytology.