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An Unexpected Culprit: Arachnoid Cyst Masquerading as a Toxidrome

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Introduction

(Keywords: Arachnoid cyst, Toxidrome mimic, Altered consciousness)

Fluctuating consciousness with respiratory depression is a critical emergency presentation. While toxicological causes are often considered, structural lesions in the posterior fossa can mimic central nervous system depression. We report a case of fluctuating consciousness and respiratory failure ultimately attributed to a cerebellomedullary arachnoid cyst.

Case Description

A 39-year-old man with dyslipidaemia presented with an acute onset of fluctuating consciousness and somnolence. On arrival, GCS E2V2M5, BP 135/70 mmHg, HR 55 bpm, RR 9/min, SpO_2 80% on room air (95% with HFMO2). Pupils pinpoint. Neurological exam showed normotonic, power 4/5, and preserved reflexes. ABG revealed CO_2 retention. Opioid toxicity was suspected, and he was given IV naloxone 0.1 mg ×4, with minimal improvement. Due to recurrent apnoeic episodes, he was intubated. CT brain plain showed a right cerebellomedullary hypodensity. A MRI confirmed a 1.4 × 2.0 cm arachnoid cyst causing mild medullary and cerebellar compression. He underwent right retrosigmoid craniotomy with cyst fenestration and was discharged well after one week.

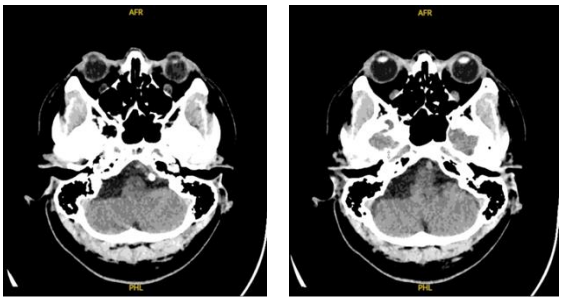

Figure 1: CT scan showing right cerebellomedullary hypodensity

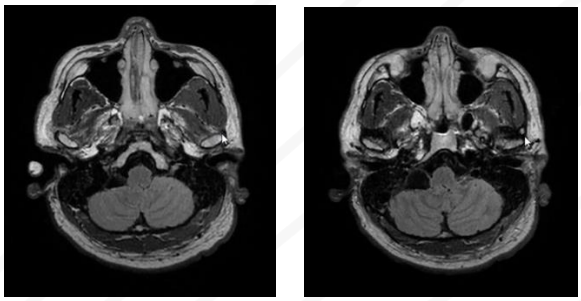

Figure 2: MRI showing an arachnoid cyst with mild mass effect

Discussion

Arachnoid cysts are typically benign, CSF-filled lesions often discovered incidentally on imaging and frequently regarded as clinically insignificant, particularly in adults[1]. However, cysts in the posterior fossa can compress the brainstem leading to significant symptoms[2]. This patient presented with features suggestive of opioid toxidrome, but poor response to naloxone and negative toxicology prompted further imaging. MRI revealed a cerebellomedullary arachnoid cyst causing mild medullary compression This case underscores the need for diagnostic vigilance. Though usually benign, posterior fossa arachnoid cysts can mimic toxidromes when symptomatic. This case highlights the importance of reassessing presumed toxidromes, especially when symptoms persist without toxicologic confirmation. Structural causes should always be considered. Early diagnosis and neurosurgical intervention can result in full recovery, as seen in this case[3]

Conclusion

Posterior fossa arachnoid cysts, though often benign, can present with brainstem symptoms mimicking toxidromes. Persistent or unexplained signs should prompt further investigation to exclude structural causes. Early recognition and intervention can lead to full recovery.

References:

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