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583. GLIOMATOSIS CEREBRI AND CENTRAL NEUROGENIC HYPERVENTILATION: A CASE STUDY, DISCUSSION OF PATHOPHYSIOLOGY, AND REVIEW OF THE LITERATURE

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INTRODUCTION: Central neurogenic hyperventilation (CNH) is a rare syndrome first described in 1959 among nine patients with brain neoplasms exhibiting high arterial pH, low PaCO₂, high PaO₂, persistence through sleep and sedation, and no peripheral cause for hyperventilation. Since then, 24 cases have been reported, including this one involving aggressive infiltrating brain neoplasms, none of which have been able to propose a clear mechanism for CNH. **METHODS:** We present the first case of gliomatosis cerebri associated with this CNH, a discussion of pathophysiology, and review of the literature. **RESULTS:** Unlike other reports, we were able to follow the path of the tumor from initial presentation through the time the syndrome appeared and disappeared. Through the use of sequential magnetic resonance images, we were able to follow the spread of the tumor to areas involved in respiratory modulation to postulate a cause for CNH in our patient involving the interruption of projection input fibers to the medulla. **CONCLUSION:** We concluded that CNH in our case may have resulted from a disruption in respiratory modulation as a result of infiltration of the tumor. We also reviewed the current literature and noted possible protective factors of age, sex, and the pathology of astrocytoma linked to survival of CNH.