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Diabetes insipidus secondary to craniopharyngioma

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Background:

Craniopharyngiomas are rare embryonic malformations of the sellar and parasellar area. There is a bimodal age distribution, with peak incidence rates for childhood-onset craniopharyngiomas occurring between the ages of 5 and 14, and for adult-onset cases between ages 50 to 74. Most common clinical manifestations include pituitary deficiencies, visual impairment and increased intracranial pressure. It is rare for diabetes insipidus to be an initial symptom of craniopharyngioma.

Case presentation:

We present a 20-year-old male patient who visited the emergency room because of polydipsia and polyuria. He drank approximately 10 liters of fluids per day; every 20 minutes including the night. Further, his vision was blurred, and he was vomiting twice per week. Central diabetes insipidus was diagnosed by a water deprivation test. Urine osmolality was around 120 mOsm/kg at the beginning. After desmopressin was administered, urine osmolality increased up to 700 mOsm/kg. Moreover, laboratory findings showed decreased levels of ACTH, TSH, LH and increased levels of prolactin. Because of panhypopituitarism, brain CT was indicated. CT and MRI showed expansive suprasellar lesion that infiltrated the infundibulum and compressed the optic chiasm. The patient underwent neurosurgery and pathohistological analysis confirmed craniopharyngioma. The patient was then discharged in good general condition. He requires endocrine substitution of all hypothalamic–pituitary axes. Hormonal substitution includes hydrocortisone, levothyroxine, desmopressin, and testosterone. After a year, there were no relapses or new tumors seen on the follow-up MRI.

Conclusion:

Diabetes insipidus is described as the inability to conserve water and maintain an optimum free water level. The water deprivation test is used to distinguish central diabetes insipidus from nephrogenic diabetes insipidus. Central diabetes insipidus is caused by injury to the central nervous system and in this case, it was craniopharyngioma.

Keywords:

craniopharyngioma, diabetes insipidus, polyuria-polydipsia syndrome