A review of childhood and adolescent craniopharyngiomas with particular attention to hypothalamic obesity.


Abstract

BACKGROUND: Although craniopharyngiomas are considered "benign" neoplasms by the World Health Organization classification, these tumors may create significant morbidity and mortality in patients. Hypothalamic obesity is a frequent complication of craniopharyngiomas and is refractory to current management options.

PATIENTS/METHODS: We reviewed 24 cases of craniopharyngiomas treated from 1992 to 2010 in patients <18 years of age regarding clinical presentation, neuroimaging, recurrence, morbidity, and mortality, with particular attention to hypothalamic obesity.

RESULTS: Our cohort conformed to published data in regard to neuroimaging characteristics, and clinical findings in the areas of endocrine, visual, neurological, neurobehavioral, and hypothalamic domains. At last follow-up, 53% of our patients were overweight (8%) or obese (46%). Only 25% of our patients had a healthy body mass index. Contrasting these data with body mass indices at diagnosis, where 21% of patients were overweight and 17% were obese, we found that there was a significant trend towards obesity over time. A significant portion of our mortality appears to be related to complications of obesity. The Native American population in Arizona appears to have a statistically greater incidence of obesity in childhood. Despite our small sample size, 75% of our Native Americans were obese at last follow-up and accounted for 50% of the mortality.

CONCLUSION: Hypothalamic obesity is a significant complication of craniopharyngiomas associated with increased mortality. The development of hypothalamic obesity is influenced by premorbid obesity, genetics, and therapy received, specifically radiation. Because of the intractability of hypothalamic obesity, improved understanding of neuroendocrine mechanisms, genomics, and newer antiobesity medications will be necessary to curb this significant complication.

KEYWORDS: children, craniopharyngioma, hypothalamic, obesity

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PMID: 24188907 [PubMed - in process]