HYPOTHALAMIC OBESITY IN CHILDREN WITH CRANIOPHYNGIOMA

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INTRODUCTION

Craniopharyngiomas (CP) is a rare embryonic brain tumor of the sellar and suprasellar region (1). It is histologically benign (World Health Organisation grade I), with the adamantinomatous subtype occurring more frequently in younger patients (<14 years of age) and the papillary subtype occurring more frequently in adult and elderly patients (>50 years of age) (2). Despite its benign histologic characteristics and high survival rates (20-year survival of >80%), CP may cause severe morbidity from invasion into adjacent tissues and structures (3). Hypothalamic obesity (HO) is one of the most severe sequelae in patients with CP; but it may also occur in patients with other tumors

RESULTS

27 data were processed, in which we found 6 cases of hypothalamic obesity called group 1 and 13 patients of normal weight called group 2, with 08 patients lost to follow-up.

Group 1 was younger at diagnosis with an average age of 4 years and 7 months, while the average age of group 2 was 8 years and 4 months. A clear male predominance was observed in group 1, whereas the sex ratio of the second group was 1:1. The dominant initial paresis was ICH syndrome, found 83.3% in group 1 and 43.1% in group 2.

The BMI when the craniopharyngioma was diagnosed was correct in the majority of patients in all groups, varying between ±3 SD to ±1 SD, only one presented a BMI between ±2 and ±3 SD in group 1.

Graph 1 Distribution by sex in the two groups

In this retrospective study, we evaluated the longitudinal medical data records of all patients who were operated on for a histologically confirmed craniopharyngioma. The minimum follow-up period required, in order to document longitudinal changes, was 24 months. We carried out a descriptive retrospective study of 27 cases of craniopharyngioma in children followed in the endocrinology department of the CPMC.

The aim of our study is to describe the modalities of occurrence of obesity in a series of 27 children with craniopharyngioma followed in the endocrinology department of the CPMC.

2.1 Assignment of patients

In group 1, only 2 cases of somatotropic deficiency were confirmed with low IGF1 levels and insulin hypoglycemia test were found, two cases of corticotropic deficiency and three thyrotopin deficiency (2 patients had a strictly normal biological profile).

In group 2, a biological exploration found one somatotropic deficiency, four thyrotopin deficiency and 3 corticotropic deficiency.

Treatment consisted of: Gross total resection was accomplished in first-line in all patients in group 1, 4 of them received complementary conformational radiotherapy and only 1 received treatment with Yttrium. The average radiation dose was 54.6 Gy.

Only 38.3% of patients in group 2 underwent subtotal resection and in the same proportion of surgical puncture, a peritumoral ventriculoscopy hypofi was the only surgical treatment undertaken in 23% of patients in group 2.

The second-line radiotherapy was performed in 42.6% of patients in group 2, with a predominance of treatment with Yttrium in 66.6% cases and only 33.3% of conformational radiotherapy.

All our patients in group 1 pursued following their treatment with a combination of somatotropic, corticotropic and thyrotopin deficiency with diabetes insipidus.

Although the patients of group 2, only 62.5% show a somatotropic deficiency, 36.4% thyrotopin deficiency and 63.6% corticotropic deficiency, at least a preservation of the anterior pituitary functions compared to group 1 or pan hypopituitarism was the rule.

In group 1, the BMI at the last check-up improved for only one case, the other patients had a BMI between ±2 and ±3 SD, while the BMI of group 2 was correct.

CONCLUSIONS

The prevalence of hypothalamic obesity in our series is in line with the literature. The patients in group 1 were younger at diagnosis compared to group 2. They also presented with suprasellar developing craniopharyngiomas in 66.5%, against only 15.3% in group 2. Surgical management was less conservative in group 1 or first-line resection, considered to be complete, was performed in all patients. Fat lesions as a risk factor for hypothalamic injury. In group 2 only 38.4% benefited from a surgical excision which was considered partial.

REFERENCES


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Table 1: Evolution of the% of occurrence of anterior pituitary deficiency postoperatively in the two groups.

Graph 2 MRI topography of the craniopharyngioma in the two groups

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METHOD

In this retrospective study, we evaluated the longitudinal medical data records of all patients who were operated on for a histologically confirmed craniopharyngioma. The minimum follow-up period required, in order to document longitudinal changes, was 24 months. We carried out a descriptive retrospective study of 27 cases of craniopharyngioma in children followed in the endocrinology department over a period of 16 years.

Patients’ demographic, endocrinological, neuroendocrinological and ophthalmological characteristics were prospectively and postoperatively and at last follow-up were analysed. We tried to divide them into more or less similar groups according to their treatment modalities (surgery, radiotherapy) in order to carry out a comparative study.