Craniopharyngioma: an appropriate and effective therapeutic approach

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Craniopharyngioma is a rare tumor (6 to 9% of brain tumors in children and adolescents), derived from embryonic tissue. It is generally benign, but is located in a complex area, close to the optic chiasma, the hypothalamus and the pituitary gland. **Development of this tumor therefore produces risks of visual deterioration, but also loss of the feeling of fullness, leading to morbid obesity if it infiltrates the hypothalamus.**

The issue of conservative surgery followed by proton therapy

Treatment of craniopharyngioma is first of all surgical, with the need to avoid visual pathways and the hypothalamus. "This is why the therapeutic approach via partial surgery, preserving the areas at risk and followed by radiotherapy (to eliminate the tumor residue), has now achieved consensus, particularly when the craniopharyngioma has invaded the hypothalamus," explains Dr. Claire Alapetite, oncological radiotherapist at Institut Curie.

Proton therapy is the preferred treatment for children, rather than classic radiotherapy using X-ray technology: when focused on the tumor, it helps spare the surrounding brain parenchyma. "The aim of our study was to confirm the effectiveness of this combined therapy in young patients," continues Dr. Claire Alapetite. "Furthermore, we attempted to assess the feasibility of increasing proton doses in the tumor volume, with the aim of limiting the risk of relapse, which occurs in 10 to 15% of cases."

Fewer relapses ... and schooling problems

The results of this study, involving 33 patients (included from 2010 to 2015) with median follow-up of 9 years, show the utility of this approach. "Children monitored for craniopharyngioma often experience memory and attention problems, leading to difficulties in school. Combined therapy enabled 24 patients to have a normal school experience," Dr. Claire Alapetite. "It also helped reduce the risk of obesity, to preserve normal visual acuity at least for one eye in 21 patients, and to delay the occurrence of any relapse: six patients experienced a relapse, but it was delayed, occurring at an average of 7 years after treatment."

However, the study could not establish a connection between an increased proton dose and control of the tumor - since increase of the dose, according to tolerance of the visual pathways, was possible in only five children. "Given that these five young patients experienced neither relapse nor excessive reaction, an increase in the dose for the tumor volume could be suggested in selected cases, and could bring about a drop in the risk of relapse," concludes Dr. Claire Alapetite. "To confirm these benefits, multi-disciplinary follow-up of young patients suffering from craniopharyngioma is vital in the long term, in terms of both control of the disease and quality of life."

Poster presentation. M. Cornen et al., Combined Approach for Craniopharyngioma in Children with conservative Surgery and Protontherapy: late Analysis of a Phase II Study to examine Feasibility of Dose Escalation (last author: Dr. Claire Alapetite).