

ENDOCRINE DISORDERS IN CHILDREN WITH OPTIC CHIASM GLIOMA

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BACKGROUND

Glioma 40% of central nervous system tumors in children

Localizations: cerebellum, brainstem and optic pathway.

Pituitary function in children with optic chiasm glioma may be impaired.

OBJECTIVES

- To describe the **frequency of endocrine abnormalities** at diagnosis of the tumor and over the follow-up period in a group of children with chiasmatic glioma
- To assess the relation of endocrine afectation with different variables

PATIENTS AND METHODS

Retrospective study

Patients **under 14 year old**

Followed for **optic chiasm glioma**

In a Pediatric Endocrinology consultation

Semiannual visits

Sent from Pediatric Oncology or Neurology units

Along a period of 15 years (2000-2014)

Diagnosed by **Magnetic Resonance imaging**

Variables

Sex

Age at diagnosis

Personal history of **neurofibromatosis (NF)**

Signs and symptoms at **presentation**

Primary treatment of the tumor

Endocrine abnormalities at diagnosis and over the **follow-up period**.

Statistic analysis

Qualitative variables are expressed as **percentages**

Quantitative variables as **mean (standard deviation)**.

Statistical tests Fisher and Wilconson.

RESULTS

Description of patients and comparison between those with and without neurofibromatosis (NF)

	Whole group	NF	No NF	p
N	14	8	6	
Women	6/14	4/8	2/6	0.63
Age at diagnosis (years)	2.97 ± 2.32	3.41±2,43	2.39±2,25	0.33
Follow-up time (years)	9.64 ± 3,30	9.62±3.81	9.67±2.80	1.00
Reason of consultation				0.07
- neuro-ophthalmic	8/14	6/8	2/6	
- subclinical (neuroimaging)	3/14	0/8	3/6	
- Endocrine	3/14	2/8	1/6	
- precocious puberty	3/14	2/8	1/6	
- pituitary deficiency	0/14	0/8	0/6	
Primary treatment of glioma				0.02
- Surgery	1/14	1/8	1/6	
- Chemotherapy	3/14	2/8		
- Chemo and radiotherapy	1/14	1/8		
- Surgery and chemotherapy	2/14	2/8		
- Surgery, chemo and radioth	1/14	1/8		
- None	6/14	1/8	5/6	

Proportion of cases with endocrine disorders at the end of the follow-up period and relation with other variables

	Endocrine disord	Prec pub	Deficiencies
Whole group	12/14	8/14	5/14
Neurofibromatosis	p=1.00	p=0.63	p=0,30
- No	7/8	4/8	4/8
- Yes	5/6	4/6	1/6
Primary treatment	p=1.00	p=0.14	p=0.03
- None	5/6	5/6	0/6
- Some	7/8	3/8	5/8
Diagnosis before age of 5 with neuro-ophthalmic signs			
	p=1.00	p=0.10	p=0.02
- No	6/7	6/7	0/7
- Yes	6/7	2/7	5/7

CASE WITH MORE ENDOCRINE DISORDERS

Age at diagnosis: 7 months. No NF.

Presentation: bilateral proptosis and cranial enlargement

Primary treatment: surgery, chemo and radiotherapy

Endocrine follow-up

- Precocious puberty at age of 8 years
- GH, TSH deficiency at 12 years
- LH, FSH deficiency at 14 years



CONCLUSIONS

Children with optic chiasm glioma may present endocrine disorders **from the time of diagnosis** of the tumor and, mainly, **along its evolution**.

Precocious puberty is the most frequent abnormality.

Pituitary deficiencies are related to **more aggressive tumors** (those presenting with neuro-ophthalmic signs before the age of five years or requiring primary treatment).

