

Childhood Craniopharyngioma with Hypothalamic Obesity – No Long-term Weight Reduction due to Rehabilitation Programs

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Introduction

Severe obesity due to hypothalamic involvement has a major impact on prognosis in long-term survivors of childhood craniopharyngioma. Despite several different therapeutic approaches, none of the pharmaceutical treatments has been proven to be effective in the long term. The long-term effects of rehabilitation efforts on the weight development in childhood craniopharyngioma patients has not analyzed till now.

Patients and methods

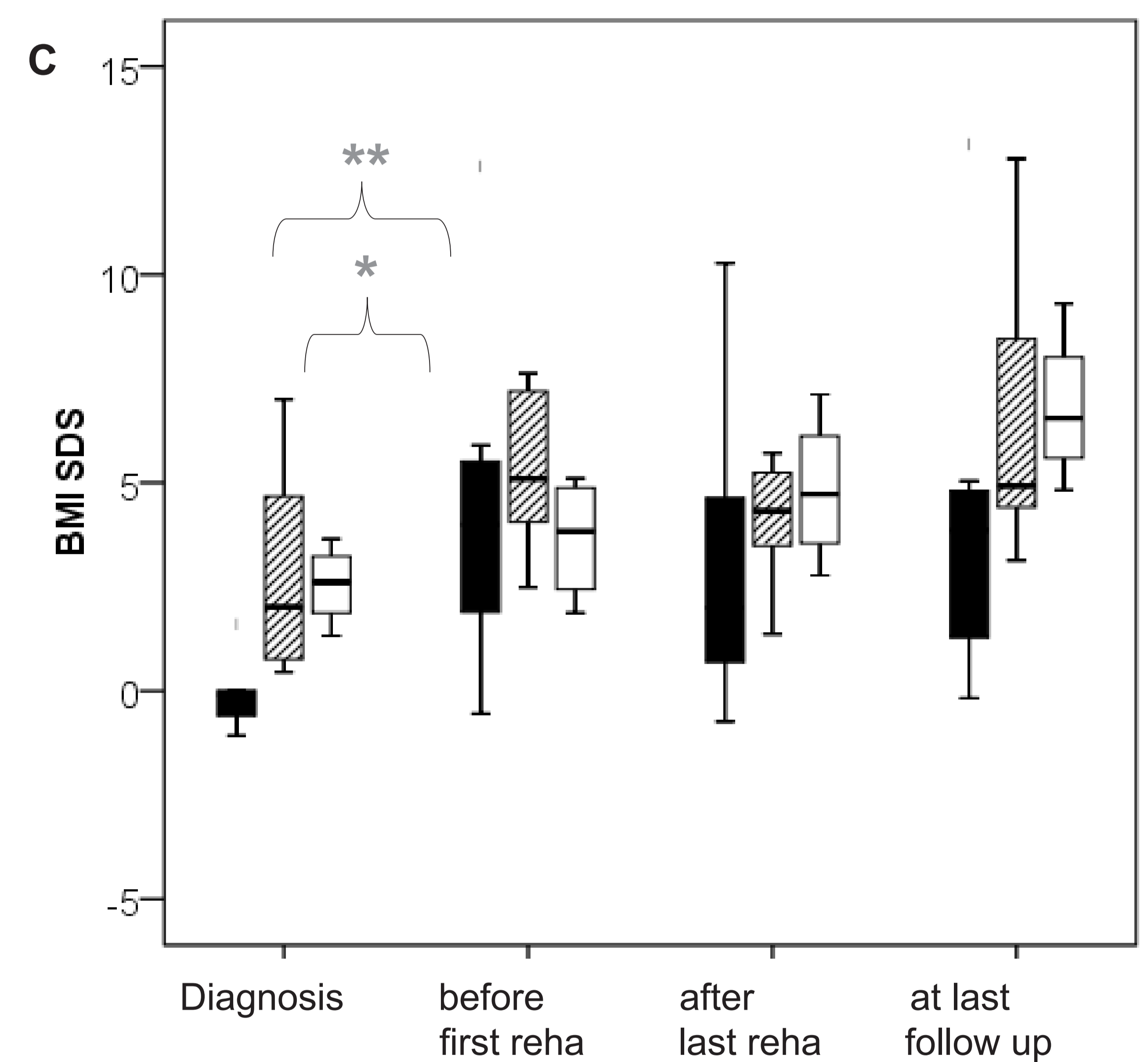
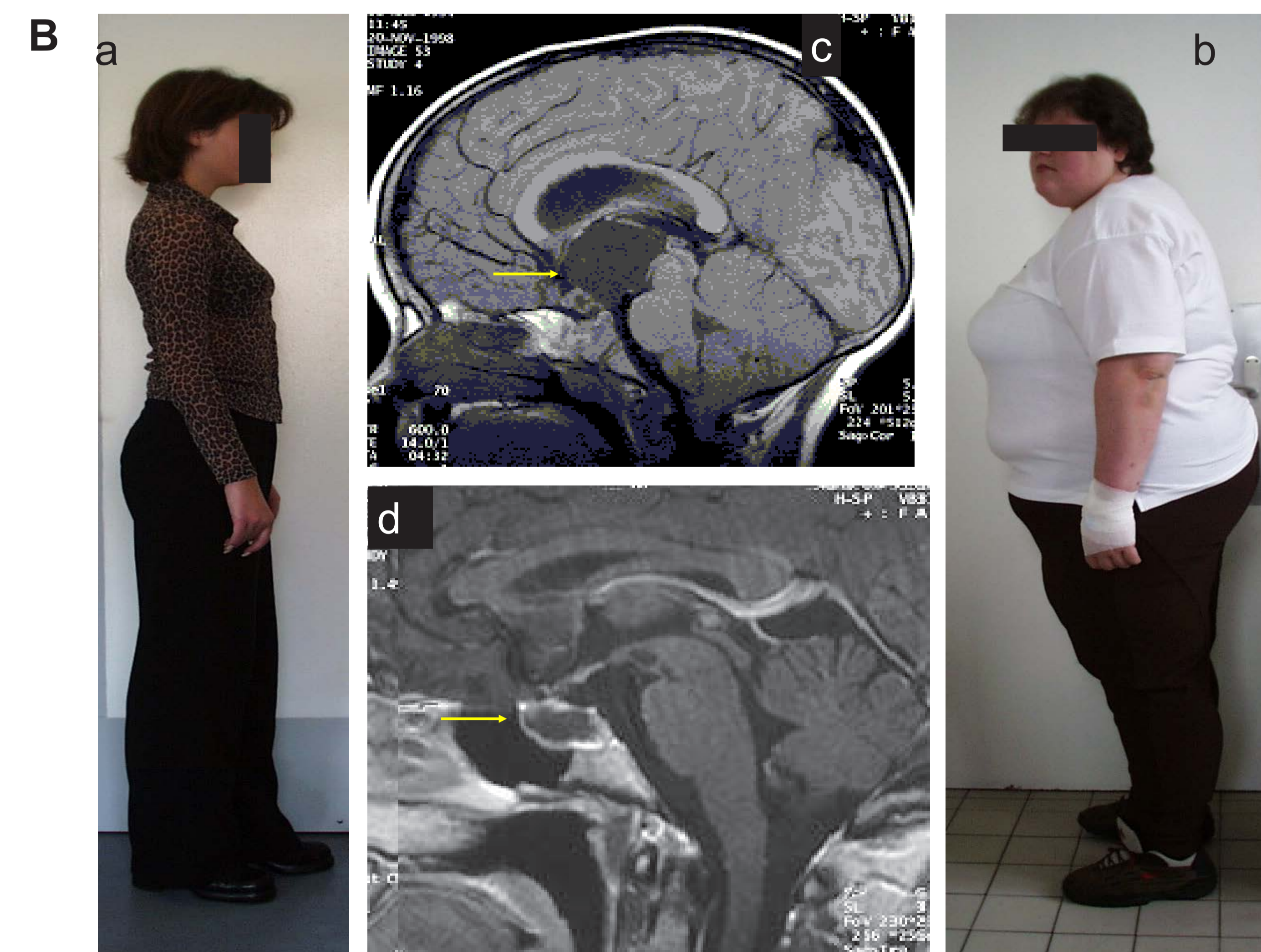
108 patients with childhood craniopharyngioma recruited in HIT Endo before 2001 were included in the study. Long-term weight development (BMI SDS after >10 yrs follow-up) was analysed in regard to rehabilitation, which was performed in 31 of 108 (29%) patients (one rehabilitation in 4 patients (13%), more than one in 21 patients (68%), 6 patients unknown) in 13 German rehabilitation clinics. The psychosocial effects of the rehabilitation treatment was analysed as well.

A	Patient characteristics	Total group	Patients with rehabilitation	Patients without rehabilitation	p-value
	Number of patients (n)	108	31	77	0.395
	Gender (male/female)	50 / 58	12 / 19	38 / 39	0.696
	Age at diagnosis (yrs)	8.07 (0.05 – 18.75)	9.19 (1.93 – 17.42)	7.8 (0.05 – 18.75)	0.149
	Interval diagnosis till follow up (yrs)	16.3 (9.8 – 36.4)	10.78 (10.52 – 27.56)	16.18 (9.81 – 36.35)	0.004
	BMI at diagnosis (SDS)	0.70 (-2.67 – +7.00)	1.32 (-1.08 – +7.00)	0.23 (-2.67 – +6.98)	0.000
	BMI at follow-up (SDS)	3.38 (-1.48 – +13.13)	4.92 (-0.20 – +13.13)	2.09 (-1.48 – +10.23)	0.039
	Preoperativ hypothalamus involvement (%)	66%, (29 n.a.)	68%, (6 n.a.)	40%, (19 n.a.)	0.119
	Complete resection (%)	55%, (10 n.a.)	55%, (2 n.a.)	35%, (8 n.a.)	0.119
	10 years survival rate	1.0	1.0	1.0	NS
	10 years event-free survival	0.78 ± 0.048	0.85 ± 0.070	0.74 ± 0.065	0.177

A: Patients characteristics

B: Weight development in a patient (a) with a sellar tumor (d) and in a patient (b) with hypothalamic involvement of the tumor.

C: Weight development in patients with one rehabilitation treatment (black box), 2-3 rehabilitation treatments (checked box) and more than 4 rehabilitation treatments (white box) *p-value = 0.0121 **p-value = 0.027



Results

84% of the childhood craniopharyngioma patients underwent rehabilitation in order to reduce hypothalamic obesity (BMI>+2SD), whereas 12% of patients were normal weight. The patients with rehabilitation presented with higher BMI at diagnosis and at last evaluation when compared with patients without rehabilitation. A long-term weight reducing effect of rehabilitation was no detectable regardless of degree of obesity, frequency of rehabilitation, and hospital of rehabilitation. The patients reported a psychosocial benefit of the rehabilitation in terms of a better self image and more confidence in dealing with their disease.

Conclusions

We conclude that the treatment options for hypothalamic obesity in terms of rehabilitation are limited. Accordingly, strategies for prevention of hypothalamic lesions and psychosocial effects of rehabilitation are currently in focus for improvement of prognosis in childhood craniopharyngioma patients.

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