

Hypothalamic hamartoma as a cause of central precocious puberty in 4,5-year old girl-case report

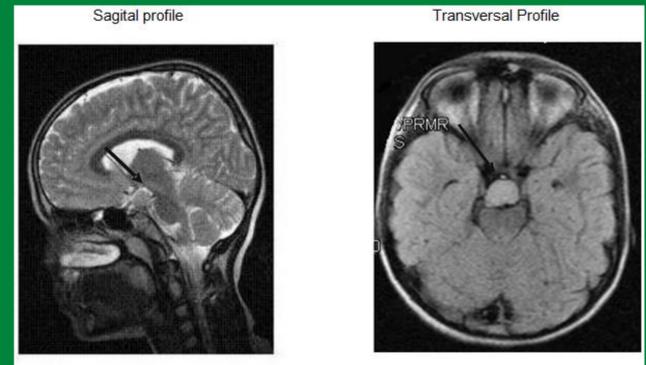


Ewa Jakubowska, Beata Sawicka, Hanna Borysewicz-Sanczyk, Aneta Zasim, Artur Bossowski

Department of Pediatrics, Endocrinology, Diabetology with Cardiology Division, Medical University of Białystok

Introduction

Hamartoma is a benign, focal malformation, which is composed of tissue elements normally found at that site which are arranged chaotically within the mass. It may occur in many different parts of the body and often is undetected. Hypothalamic hamartoma, unlike most such growths, is symptomatic. It may cause gelastic seizures, visual problems, rage disorders and early onset of puberty.



MRI scans of the head before therapy (T2- dependent scans)

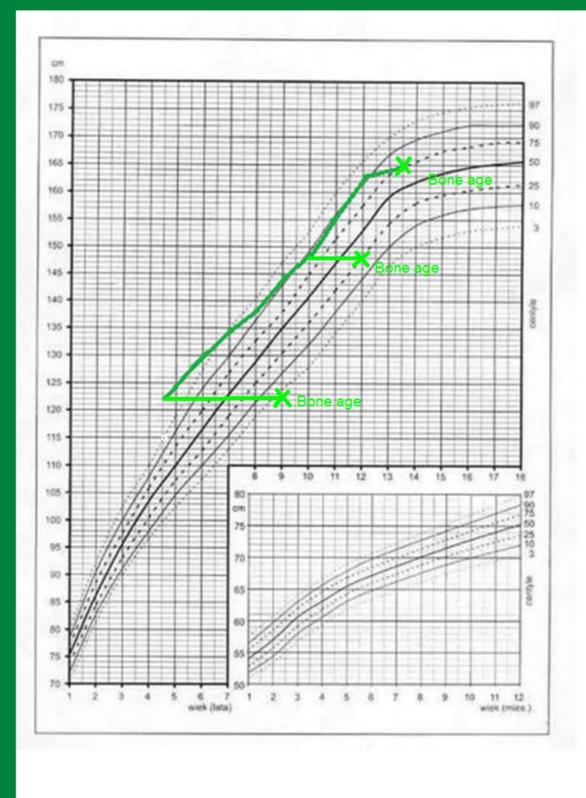
Case history

4,5-year old girl was hospitalised for the first time in 2004 because of accelerated growth (height- 97 centyle) and thelarche (Tanner stage 3). Bone age was evaluated at 8 years 10 months. Dynamic profile of LH and FSH- after stimulation with LH-Rh - showed values typical for puberty. PRL, DHEAS, TSH and alpha-fetoprotein levels were within the range. Abdominal ultrasonography showed no abnormalities. MRI scan showed tumorous mass (20x18x15mm) in the hypothalamic region, modelling the bottom of ventricle III and dislocating the cerebral lacuna and optic chiasm.

Girl was referred to Neurosurgery Ward (The Children's Memorial Health Institute in Warsaw), where a decision was taken to postpone the surgical intervention and start treatment with Gn-RH analogue.

Results

Girl has been treated with LH-RH analogue- Diphereline in a dose 3,75mg i.m. every 28 days, in the years 2004-2009. Patient has been regularly evaluated- undergoing hormonal tests and diagnostic imaging procedures. Subsequent MRI scans showed no progression in the size of tumour. Treatment was terminated at the age of 9 years 7 months as the patient reached the adequate height and growth velocity of 6cm/year with bone age evaluated at 12 years. Menarche occurred at the age of 11 years 8 months. Currently- at the age of 13 years 8 months- girl menstruates regularly, bone age is equal to chronological age.



The growth curve before and after Diphereline therapy

Before treatment (2004)	After 1 year of therapy (2005)	After 2 years of therapy (2006)	Afrer completing therapy (2009)
FSH 0 min 15,7 mIU/ml 30 36,6 60 35,9 90 33,2 120 36,2	FSH 0 min 1,1 mIU/ml 30 1,0 60 1,1 90 1,2 120 1,2	FSH 0 min 1,7 mIU/ml 30 1,7 60 1,8 90 1,7 120 1,7	FSH 0 min 1,9 mIU/ml 30 2,0 60 2,0 90 2,0 120 2,2
LH 0 min 4,3 30 20,2 60 16,7 90 12,6 120 29,1	LH 0 min 0,23 30 0,32 60 0,28 90 0,27 120 0,27	LH 0 min 0,1 mIU/ml 30 < 0,1 60 < 0,1 90 < 0,1 120 < 0,1	LH 0 min 0,18mIU/ml 30 0,17 60 0,16 90 0,19 120 0,17
E2 11,98 pg/mg 120 min 11,33	E2<5 pg mg 120 min<5 pg/mg	E2<5 pg/mg 120 min<5pg/mg	E2<5pg/ml 120 min<5pg/ml



Patient before treatment

Conclusion

Hypothalamic hamartoma may be a rare cause of central precocious puberty in children.