Background: Congenital pituitary hormone deficiency is etiologically heterogeneous and occurs in 1:4000 live births (4). Of those, isolated growth hormone deficiency (IGHD) is the most common, followed by combined pituitary hormone deficiency with or without extrapituitary anomalies (3, 4).

Case report: boy, presented at age of 8.7 years with short stature (SDS=3.46) (fig. 1 and 2). No available perinatal data. At examination: mild mental retardation, developmental delay, mutism, loss of hearing, cleft palate, partial IGHD (peak GH 4.1 μIU/l (tabl. 1)), 4-years delayed BA, cryptorchidism, refractive anomalies – high degree of hypermetropia and astigmatism, congenital cataracts. Anterior pituitary hypoplasia (MRI) (fig. 3). Institution of GHIG, initially with 0.05 μg/kg/24 h s.c. No additional pituitary hormone deficits could be established during follow up; spontaneous and fast progressing puberty was evident (tabl. 2).

Methods: Sequencing analysis of exon 1-4 of HESX1, SOX2 and SOX3. Array comparative genome hybridization was performed.

Results: A 3.297 Mb duplication 7q11.23(q11.23)2(q17)(73636711-75663802) [fig.19], containing 59 genes and 13 pseudogenes was found by aCGH after the negative screen for HESX1, SOX2 and SOX3 (fig. 4). There is 87% match with the autosomal dominant 7q11.23 microduplication syndrome (tabl. 4). The estimated prevalence is 1:12000 live births (8). Symptoms include mild facial dysmorphic features, mental retardation, developmental and speech delay, language and hearing difficulties, short stature, cleft palate, cryptorchidism, ocular abnormalities which showed an overlap with our patient’s phenotype (tabl. 4) (3). Up to now, none of the 7q11.23 patients are described to have hypopituitarism.

Conclusions: Patients with complex hypopituitarism phenotype with extrapituitary anomalies should undergo screening of the whole genome. This approach may contribute to new etiologic insights of hypopituitarism. The 7q11.23 microduplication syndrome is very rare, up to now there are about 50 patients described worldwide. To our knowledge this is the first patient with IGHD due to pituitary hypoplasia as part of the 7q11.23 microduplication syndrome.

References: