X-linked Acro-gigantism (X-LAG) Syndrome: Two New Cases with Long-term Follow-up

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**Introduction**: In 2014 we described X-linked acrogigantism (X-LAG) syndrome, due to a chromosome Xq26.3 microduplication involving *GPR101* that is characterized by early childhood onset gigantism usually from a mixed GH-prolactin pituitary adenoma. We describe two sporadic female X-LAG syndrome cases genetically diagnosed in adulthood that presented with pediatric gigantism.

**Results:** The first patient was diagnosed with X-LAG syndrome at the age of 30yr. She had rapid growth from 12 months of age and she was diagnosed with gigantism at the age of 3yr. At presentation she had large hands and feet, a pendulous abdomen, enlarged lips, and increased interdental spaces. On MRI she had a pituitary macroadenoma (25mm). She had increased GH (no OGTT suppression) IGF-1 and prolactin levels. She underwent transcranial resection that led to permanent hypopituitarism of other axes (including DI) but had no effect on GH/prolactin. Bromocriptine and octreotide did not improve GH control. Following radiotherapy and transsphenoidal neurosurgery, GH secretion and growth normalized to adulthood. Following assisted reproduction gave birth to a genetically normal child. The second case was diagnosed genetically aged 54yr. Excessive growth began before 3yr. She was diagnosed with a pituitary adenoma (GH positive on pathology) aged 13yr. She underwent two neurosurgical interventions and radiotherapy, which left an active unresectable remnant and hypopituitarism. Her final adult height and weight are 193cm and 146kg, respectively. She has received lanreotide for 20 years as her underlying disease is active. Her condition is complicated by diabetes, hypertension, diffuse arthropathy and respiratory insufficiency.

**Conclusions:** Review of adult acromegaly populations can identify patients features of X-LAG syndrome. The current cases reveal the importance of early control of GH hypersecretion and the potential for life-long active acromegaly in X-LAG cases due to small tumor remnants.