

Dramatic weight loss after sleeve gastrectomy in a patient with obesity due to heterozygous leptin receptor mutation

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Monogenic forms of obesity are very uncommon. Among these leptin receptor mutations are among the rarest and are associated with hyperphagia and rapid weight gain starting early in life. No specific treatment is currently available. In particular response to bariatric surgery is unknown. Here, we report a morbidly obese young man with a leptin receptor (LEPR) mutation and his response to sleeve gastrectomy.

KAZ, an Emirati adolescent presented to our centre at the age of 15 years for evaluation of progressive weight gain over the previous 10 years. There was a clear history of hyperphagia, but no clinical indication of hypothalamic dysfunction. There was a strong family history of obesity; mother, sister and 2 brothers were all obese. Apart from obesity (weight 141 kg, BMI 45.13 kg/m²) physical examination was unremarkable. He was noted to have subclinical hypothyroidism (TSH 7.2 uIU/ml; T4 18.51 pmol/L) and was commenced on daily thyroxine treatment. In spite of regular dietetic input, the patient continued to gain weight.

Genetic testing for an MC4R was negative. Further genetic tests were requested, but before these were available, the patient sought surgical treatment elsewhere and underwent a sleeve gastrectomy. He missed his medical follow-up appointments and came back 16 months later. By this time, he had lost 63 kg steadily and reached a weight of 78.4kg (BMI 25.02 kg/m²); his previously requested genetic tests had indeed confirmed that he was heterozygous for a mutation in leptin receptor (details).

To our knowledge this is the second report of bariatric surgery in LEPR mutations. This case indicates a very good response to sleeve gastrectomy in such cases and may have important implications in treatment of this rare form of obesity, but also in providing insights into hormonal pathways in bariatric surgery and obesity in general.