



Bariatric Surgery In A Patient With Melanocortin 4 Receptor Mutation

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Introduction

Whilst bariatric surgery is the most effective therapy for idiopathic morbid obesity in adults, little is known about its effectiveness in patients with monogenic obesity syndromes. We report 5-year outcome of gastric bypass surgery in a young man with severe super-obesity associated with melanocortin 4 receptor (MC4R) mutation.

Case report

A 22-year-old male with a weight of 221.6 kg and body mass index 76.7 kg/m² was referred to our centre for bariatric surgery. Previous attempts at lifestyle measures, dieting and treatment with Orlistat had been ineffective.

Clinical background

Hyperphagia, early weight gain, increased linear growth. Height 170.5 cm, weight 177 kg, body mass index 60.9 kg/m², at the age of 17 years.

Genetic testing showed that he was heterozygous for A insertion at codon 112 in Melanocortin 4 Receptor.

Preoperative assessment

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Roux-en-Y gastric bypass (RYGB)

It induces gastric restriction, malabsorption and neurohormonal changes.

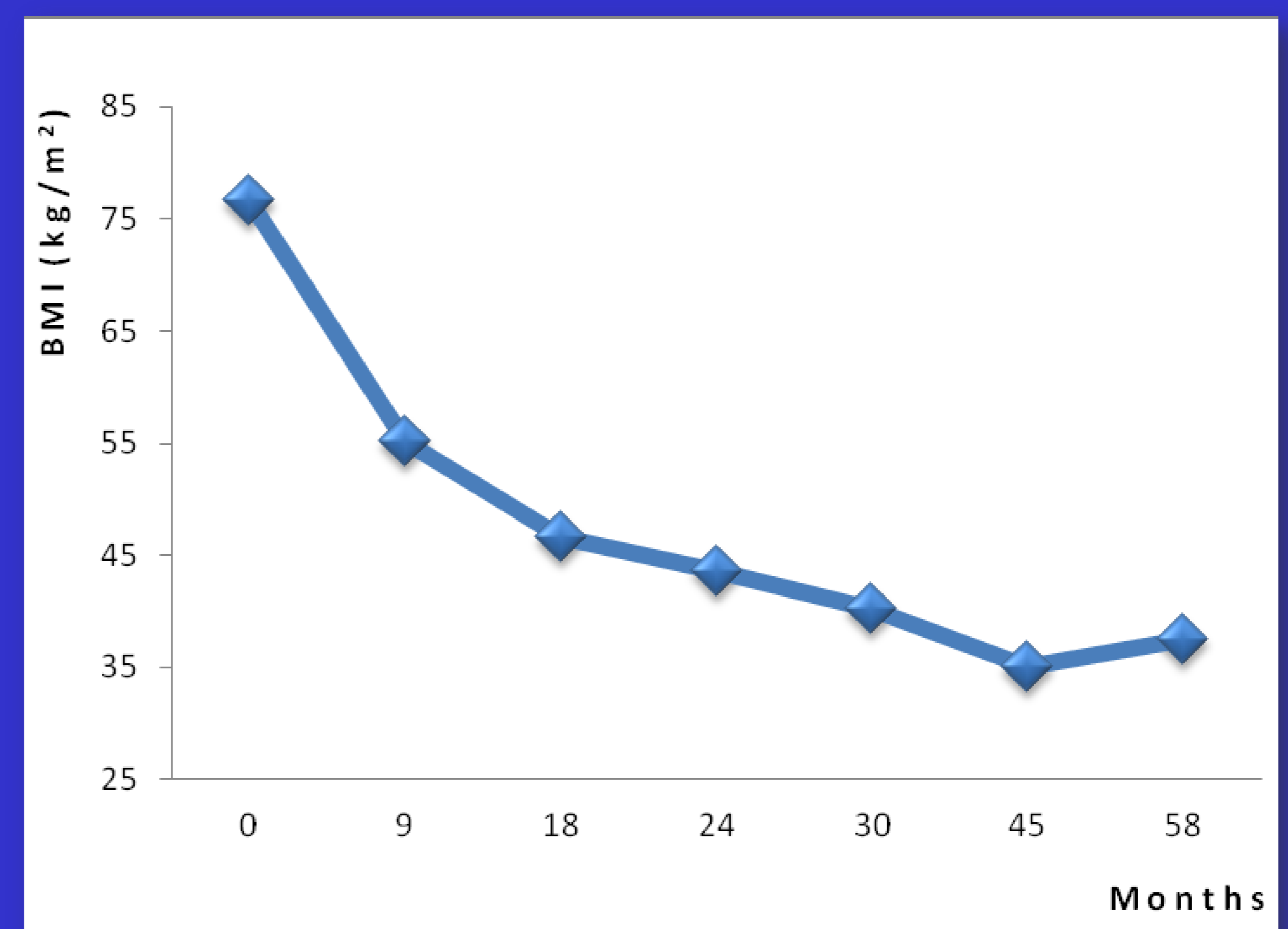
Postoperative weight loss is rapid and continues for 12 – 18 months.

Average weight loss is 66 – 77% of excess weight.

Postoperative outcome

Achieved weight loss of 60 kg in the first postoperative year. Sibutramine 15mg daily was prescribed from 2008 to 2010 to facilitate further weight reduction.

He continues to report good post-surgical appetite suppression and to-date has achieved weight reduction of 75.8% of excess weight.



Reduction in body mass index (BMI) following gastric bypass surgery

Discussion

Heterozygous MC4R mutations have been associated with dominantly inherited obesity in various ethnic groups and non-surgical interventions are rarely effective in the long-term. One previous report of bariatric surgery in a patient with complete MC4R deficiency reported poor weight loss after gastric banding.

We speculate that patients with MC4R mutations achieve superior weight loss outcomes from procedures such as RYGB that produce neurohormonal changes rather than gastric restriction alone.