

Unexpected Turnaround: Cushing's Syndrome Causing New Weight Gain after Bariatric Surgery



To the Editor:

A 47-year-old woman with a history of bariatric surgery was admitted when an outpatient gastroscopy, performed because of epigastric pain, disclosed a deep marginal ulcer. There was no evidence of perforation on computed tomography imaging; incidentally, a right-sided adrenal adenoma was noted, measuring 33 mm in diameter with 10 Hounsfield units.

As the patient appeared cushingoid, a detailed history was obtained. Three years earlier, she had undergone Roux-en-Y gastric bypass surgery for class III obesity (weight at the time of surgery: 114 kg, corresponding to a body mass index of >40 kg/m²). She quickly lost weight, thereafter, reaching a nadir of 77 kg 18 months later.

Subsequently, weight increased insidiously, despite no change in diet habits. During the following months, the patient developed hypertension, soon requiring triple therapy. In parallel, she noticed impure skin, xanthelasma, and frontal alopecia.

On present admission, the patient weighed 101 kg. She appeared plethoric, and bilateral xanthelasma and telangiectasias were evident (Figure). There were signs of easy skin bruising. Medication consisted of candesartan, a thiazide diuretic, and nebivolol. Since surgery, she received regular vitamin B12 injections. She did not use an inhaler, skin ointments, eye drops, or any herbal remedies. Laboratory results were in keeping with impaired fasting glucose (HbA1c 5.9%, compared with 5.3% at the time of surgery). Potassium was 3.9 mmol/L, cholesterol was 210 mg/dL, and thyroid function was normal.

The plasma corticotropin was fully suppressed (< 1.5 pg/mL), and morning cortisol levels were between 18.1 and 25.6 mcg/dL on repeat testing (reference range 4.8–19.5). Twenty-four-hour urinary free cortisol was 311 mcg/24 (<148). A dexamethasone suppression test and late-night salivary cortisol further supported the diagnosis of adrenocorticotropic hormone-independent hypercortisolism.

The patient underwent unilateral robot-assisted adrenalectomy and received postoperative stress dose steroid cover to prevent withdrawal syndrome. Synacthen, administered on the second postoperative day, did not mount an adequate cortisol response (5.3 and 7.3 mcg/dL at 30 and 60 minutes, respectively). She was discharged on a tapering dose of



Figure Xanthelasma were evident at presentation. Six months post adrenalectomy, they had almost completely disappeared.

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hydrocortisone. On her last appointment, 6 months later, she remains well and has lost 7 kg. Her blood pressure is now well controlled with a single agent.

DISCUSSION

Bariatric surgery has emerged as a useful treatment for persons with severe obesity, resulting in sustained weight loss and ultimately in longer life expectancy than conventional obesity care.¹ Obesity is also present in the vast majority of patients with endogenous hypercortisolism; however, given the well-known association of weight and “physiologic hypercortisolism” (pseudo-Cushing’s), the low pre-test probability (a consequence of the rarity of Cushing’s syndrome and the continuous rise in the number of obese persons), major societies do not advocate routine evaluation for hypercortisolism prior to operations for weight loss, unless “clinically suspected.”² Cushing’s syndrome following bariatric surgery is seldom discovered. A multicenter study found 16 patients over a period of 15 years, who were diagnosed with Cushing’s syndrome following such operations (median time between bariatric surgery to treatment of hypercortisolism, 2.5 years).³

The clinical suspicion of Cushing’s syndrome hinges on the recognition of the typical signs and symptoms of glucocorticoid excess, which may emerge more or less simultaneously, as in the present case. Dermatologic changes such as fragile skin, ecchymoses, and telangiectasias, are valuable in the differentiation between garden variety metabolic syndrome associated with obesity and genuine hypercortisolism.

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References

1. Carlsson LMS, Sjöholm K, Jacobson P, Andersson-Assarsson JC, Svensson PA, et al. Life expectancy after bariatric surgery in the Swedish Obese Subjects Study. *N Engl J Med* 2020;383:1535–43.
2. Mechanick JI, Youdim A, Jones DB, Garvey WT, Hurley DL, McMahon MM, Heinberg LJ, Kushner R, Adams TD, Shikora S, Dixon JB, Brethauer S. American Association of Clinical Endocrinologists; Obesity Society; American Society for Metabolic & Bariatric Surgery. Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient—2013 update: cosponsored by American Association of Clinical Endocrinologists, The Obesity Society, and American Society for Metabolic & Bariatric Surgery. *Obesity (Silver Spring)* 2013 Mar;21(Suppl 1(0 1)) [S1-S27.
3. Javorsky BR, Carroll TB, Tritos NA, et al. Discovery of Cushing's syndrome after bariatric surgery: multicenter series of 16 patients. *Obes Surg* 2015;25:2306–13.