58yo F s/p Gastric Bypass

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Endorama

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Consult

- 58yo F with morbid obesity, OSA, T2DM, hypothyroidism, s/p gastric bypass 3 months prior was admitted from an OSH for progressive weakness b/l upper and lower extremities.

- Workup revealed elevated TSH.

HPI

- 3 months ago, pt underwent Roux-en-Y gastric bypass
- 1wk later she was found to have a wound infection, for which she remained in the hospital ~2months
- She was released to rehab, but returned to an OSH a few days later c/o L>R LE weakness and R>L UE weakness, which is progressively worsening

HPI

- She has had frequent falls over the last couple weeks, requires more assistance with standing and has difficulty holding up her head and neck
- She has had no respiratory distress
- It is unclear if she was receiving her thyroid replacement at the OSH

ROS:

- +50# wt loss since surgery
- +N/V
- +anxiety
- +burning pain b/l LE's, worsened with slight touch
- 10pt ROS otherwise neg

Medical History

PMH:

- DM2- dx'd '04 c/b neuropathy
- HTN
- Colon lipoma s/p partial colectomy
- Hypothyroidism
- Asthma

PSH:

- Roux-en-Y 10/17/11
- Partial colectomy '10
- CCY
- APPY
- TAH/BSO '84

Medical History

Medications:

- Lantus 15 daily
- Novolog SS AC
- Levothyroxine 100mcg
- Advair 500/50
- Lasix 20mg daily
- Prilosec 40mg BID
- Zoloft 100mg daily
- Simvastatin 60mg qHS
- Niacin 100mg daily
- Neurontin 600mg TID
- Colace 100mg daily PRN
- MVI

Allergies: ASA, PCN, Fluoroquinolones, Clarithromycin, Clindamycin, Methadone, Morphine

Family History:

- Colon, pancreatic, lung, breast cancer

Social History:

- Lives with husband
- No tobacco, EtOH

Physical Exam

T36.8 BP136/66 HR89 RR20 94% Ht5'2" Wt101kg BMI 40.5

- Gen: tearful, NAD
- HENT: EOMI, OP clear
- Neck: normal thyroid, no thyromegaly or nodules
- CV: RRR, no M
- Pulm: CTA b/l
- Abd: +BS, soft, NT
- Skin: warm, dry
- Neuro: CN's II-XII intact, lack of sensation b/l LE's, Strength: 4/5 b/l UE's, 0/5 LLE, 1/5 RLE, Reflexes: 0 b/l patella, 2+ BR

Laboratory Evaluation

- Na 137, K 4.0, Cl 103, CO2 23, BUN 22, Cr 0.5, Glc 388, Ca 8.4, Alb 2.8
- WBC 8.9, H/H 9.4/29.2, Plt 290
- Thiamine 134 (nl 80-150)
- Vit B12 (at OSH)wnl
- Zinc, Copper wnl
- Vit A, E wnl
- 1,25 Vit D 28, PTH 39
- TSH 7.61, T4 2.7 (nl 5.0-11.6)

Further Evaluation:

LP: Tube 4: WBC 4, Glc 88, Protein 31

MRI brain/spine:

- Brain: no acute abnormalities, no abnormal enhancement
- Spine: +DJD, no abnormal enhancement

EMG: axonal length dependent sensorimotor polyneuropathy, spontaneous activity in C- and L- spine myotomes, ?superimposed polyradiculopathy or motor neuronopathy

Further bloodwork?

- FT4 0.55 (0.9-1.7)
- FT3 153 (230-420)
- TPO Ab 20480

Plan?

- Restart Levothyroxine 100mcg daily
- Repeat TFT's 1wk

1 week later…

- Pt was feeling very depressed as workup was unrevealing and weakness and pain worsening
- TSH 34.08 (from 7.61), FT4 0.65 (from 0.55)
- Levothyroxine increased to 150mcg

3 days later…

- TSH 32.55, FT4 0.8

2 days later…

- The patient awoke in the morning able to move all 4 extremities
- Strength continued to improved over next couple days
- She was discharged to rehab on LT4 150 mcg with instructions to check FT4 q1wk and increase LT4 as needed until within normal limits

Post-gastric bypass polyneuropathy?

- ~1.3% post-bariatric patients have neuropathy: peripheral neuropathy (ie. GBS) or encephalopathy (ie. Wernicke's), many do not have vitamin deficiency
- ?Secondary to inflammation or immunologic mechanism
- A new term has been introduced, "**Acute Post-Gastric Reduction Surgery" (APGARS) neuropathy**, to describe a polynutritional, multisystem disorder characterized by protracted postop vomiting, hyporeflexia, and muscular weakness
- 2004, 808 questionnaires were mailed to members of ASBS asking surgeons to report on specific cases where APGARS may have been present; 31.8% were returned
- Vit B12 or Thiamine defic. was noted in 40%, no vit deficiency was discovered in 60%, of which ½ cases resolved
- Incidence 5.9 cases/10,000 surgeries (0.6%)

Endocrine Society Guidelines:

Endocrine Society published Clinical Practice Guidelines to managing the post-bariatric surgery patient Nov '10

- Calcium, 25-OH Vit D, AP, phos, and PTH should be checked pre-operatively, at 6, 12, 18, and 24 months, then annually
- BMD should be checked pre-operatively, 12 months after surgery, then annually
- Check Fe/ferritin, B12, folate, Vit A, and Zinc at 6, 12, 18, and 24 mos, then annually

Endocrine Society Guidelines for management of post-bariatric surgery patient

- MVI, Ca/Vit D should be started for all patients (Ca Citrate preferred)
- Iron (+Vit C to improve absorption) should be started empirically
- Monitor blood sugars closely; avoid SU's in immediate postop period
- Re-evaluate dose of lipid-lowering drugs periodically as TG and LDL decrease and HDL increases after surgery

Take Home Points

- Much higher doses of levothyroxine may be required to treat patients with hypothyroidism after gastric bypass
- There are many complications of Roux-en-Y gastric bypass
- The Endocrine Society recently released clinical practice guidelines to manage the post-bariatric surgery patient

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