Successful treatment of a female with chronic pseudo-intestinal obstruction with sympathomimetic amines and thyroid hormone replacement

J.H. Check, R. Cohen

The University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School at Camden, Cooper Hospital/University Medical Center, Department of Obstetrics and Gynecology, Division of Reproductive Endocrinology & Infertility, Camden, NJ (USA)

Summary

Purpose: To determine if a defect in sympathomimetic amines, which is a common cause of various undiagnosed pain syndromes in women could be the cause of chronic pseudointestinal obstruction. Furthermore to determine if this life-threatening illness may similarly respond to sympathomimetic amines as in other pain syndromes, e.g., pelvic pain and interstitial cystitis. *Method:* A 23-year-old, five foot, female with chronic pseudointestinal obstruction, who lost 35 pounds down to 75 pounds, was treated with 15 mg dextroamphetamine sulfate and 50 µg of L-thyroxin (her TSH thyroid hormone level was markedly suppressed in the face of a slightly low free thyroxin level. *Results:* Her abdominal pain lessened then completely disappeared within a few weeks. Within one year she gained 25 pounds. *Conclusions:* Chronic pseudointestinal obstruction is another way idiopathic orthostatic edema (a condition found predominantly in women) may manifest. Similar to other gastrointestinal pain syndromes and pain in other areas, e.g., pelvis, bladder, head and joints, treatment with sympathomimetic amines results in dramatic improvement.

Key words: Chronic pseudointestinal obstruction; Sympathomimetic amines; Orthostatic edema; Hypothalamic hypothyroidism.

Introduction

Sympathomimetic amines may be an effective therapy for a wide variety of medical illnesses and conditions, especially found in women, linked by capillary permeability defects as the etiologic factor [1]. Various pain syndromes have been quickly and effectively treated with sympathomimetic amines despite failure to respond to various other therapies [2-4].

Some of the pain syndromes that have shown dramatic improvement with treatment using dextroamphetamine sulfate, despite unresponsiveness to other therapies, include esophageal disorders and gastroparesis [5, 6].

The case report described herein demonstrates the usefulness of sympathomimetic amines for another cause of gastrointestinal pain – pseudointestinal obstruction.

Case Report

The patient was diagnosed with chronic pseudointestinal obstruction at age 23. As a child she had no problems with growth (was in the 98th percentile at one point) but at five years of age her growth completely stopped for one and a half years. After extensive testing she was diagnosed by colonoscopy with Crohn's disease. She responded to sulfasalazine therapy and she began to grow and gain weight (at one point she was at the 3rd percentile in weight).

At age 22 she reached her maximum weight of 110 pounds (her height was 5 feet). She began having abdominal pain (especially after eating) and early satiety. Lactose intolerance was considered but she failed to respond to the avoidance of dairy products and the addition of lactase to her food. She also had marked constipation.

Over a span of one year she lost 35 pounds decreasing her weight to 75 pounds. She was evaluated by a world renown center for anorexia and their conclusion was that she did not suffer from this condition.

A repeat colonoscopy showed no recurrence of her Crohn's disease (she had remained on mesalamine treatment). She was then evaluated by an upper GI barium study with a small bowel investigation. The transit time of the radiographic dye was extremely slow prompting the diagnosis of chronic pseudointestinal obstruction.

She was counseled by the treating physician that she should avoid high fiber foods but unfortunately there was not an effective medical therapy for the condition. One drug that had shown some promise, tagaserod, was withdrawn from the pharmaceutical market because of increased risks of cardiac complications.

She pursued an opinion from our office to exclude an endocrinological cause of her problem. Adrenal insufficiency was excluded by a 4:00 p.m. serum cortisol of 21.6 µg/dl (nl 3.1-16.7). The free-thyroid level was slightly low at 0.5 ng/dl (nl 0.7-1.8) with a low thyroid stimulating hormone (TSH) level of < 0.01 (nl .35-5.50). She was thus diagnosed with hypothalamic hypothyroidism. Her serum thyroxin level was also low normal at 2.1 µg/dl (nl 4.5-10.9).

Though she may have had hypothalamic hypothyroidism her treating physicians did not believe that this condition could be solely responsible for the chronic pseudointestinal obstruction. Her family history was important in that her mother, who had to temporarily stop jogging because of pain in her thighs, was diagnosed with idiopathic orthostatic cyclic edema. Treating her with dextroamphetamine sulfate allowed her to resume exercising. This condition is familial and can manifest in many ways [1].

Revised manuscript accepted for publication February 26, 2009

The patient on close questioning had a lot of the classic symptoms of idiopathic orthostatic cyclic edema including abdominal distention, and a ten pound weight gain prior to the gastrointestinal syndrome (which subsequently limited her ability to eat and caused the weight loss), fluid retention, and pain and swelling in the joints [1]. Thus in addition to 50 mcg of levothyroxin for the hypothalamic hypothyroidism she was treated with dextroamphetamine sulfate (15 mg daily).

Her response to therapy was dramatic. Her pain over several weeks disappeared as did her early satiety. Her bowel movements became regular. She gained 25 pounds to attain her present weight at age 25 of 101 pounds. She is able to eat all types of food including milk products.

Despite taking 50 μg of L-thyroxin her serum TSH level has increased into the normal range (1.77 mIU/ml). This suggests that the hypothalamic pituitary hypothyroidism was a consequence of the weight loss and diminished body fuel. Eventually an attempt will be made to stop the L-thyroxin but there is no intention at present to stop the dextroamphetamine sulfate.

Discussion

Chronic pseudointentinal obstruction represents a rare and highly morbid syndrome characterized by impaired gastrointestinal propulsion together with symptoms and signs of bowel obstruction in the absence of any lesions occluding the gut lumen [7]. Medical and surgical therapies are often unsatisfactory and long-term outcome turns out to be poor in the vast majority of cases [8].

The dramatic improvement in a short time following treatment with sympathomimetic amine therapy strongly suggests that the improvement was related to the therapy as was demonstrated in other pain syndromes involving possible gastrointestinal motility disorders [5, 6].

Related to the weight loss she developed hypothalamic pituitary type hypothyroidism. This diagnosis was evident by the return of her serum TSH into the normal range despite thyroid hormone replacement once her weight was restored.

It is ironic that a drug considered to be an appetite suppressor used to lose weight would be able to restore the weight of this young lady by improving the intestinal motility defect.

This disorder of sympathomimetic amines, with a 10:1 female/male ratio, frequently manifested by weight gain, edema and nocturia refractory to diet may be associated with a variety of refractory pain disorders. Added to the list should now be chronic pseudointestinal obstruction. This disorder is potentially life-threatening. It may have various etiologies so it is not clear what percentage of patients will respond to treatment. Other questions include whether the improvement is limited to females. There are generally few if any side-effects in dosages up to 30 mg of dextroamphetamine sulfate. The condition of idiopathic edema is a common cause of obscure treatment refractory conditions. Unfortunately it is frequently not considered in the differential diagnosis by the majority of physicians.

References

[1] Check J.H., Katsoff D., Kaplan H., Liss J., Boimel P.: "A disorder of sympathomimetic amines leading to increased vascular permeability may be the etiologic factor in various treatment refractory health problems in women". *Med. Hypoth.,* 2008, *70,* 671.

[2] Check J.H., Katsoff B., Citerone T., Bonnes E.: "A novel highly effective treatment of interstitial cystitis causing chronic pelvic pain of bladder origin: case reports". *Clin. Exp. Obstet. Gynecol.*, 2005, *32*, 247.

[3] Check J.H., Wilson C.: "Dramatic relief of chronic pelvic pain with treatment with sympathomimetic amines – Case report". *Clin. Exp. Obstet. Gynecol.,* 2007, *34,* 55.

[4] Boimel P., Check J.H.: "Marked improvement of intractable arthritic pain in a woman with rheumatoid arthritis with sympathomimetic amine treatment despite previous failure with standard therapy and possible implications for last trimester unexplained fetal demise – case report". *Clin. Exp. Obstet. Gynecol.*, 2007, *34,* 254.

[5] Leskowitz S.C., Shanis B.S., Check J.H.: "Resolution of atypical chest pain during treatment for idiopathic orthostatic edema". *Am. J. Gastroenterology*, 1990, *85*, 621.

[6] Boimel P., Check J.H., Katsoff D.: "Sympathomimetic amine therapy may improve refractory gastroparesis similar to its effect on chronic pelvic pain – case report". *Clin. Exp. Obstet. Gynecol.,* 2007, *34,* 185.

[7] De Giorgio R., Sarnelli G., Corinaldesi R., Stanghellini V.: "Advanced in our understanding of the pathology of chronic intestinal pseudo-osbstruction". *Gut*, 2004, *53*, 549.

[8] Stanghellini V., Cogliandro R.F., de Giorgio R., Barbara G., Salvioli B., Corinaldesi R.: *Neurogastroenterol Motil.,* 2007, *19*, 440.

Address reprint requests to:
J.H. CHECK, M.D., Ph.D.
7447 Old York Road
Melrose Park, PA 19027 (USA)
e-mail: laurie@ccivf.com