

Marked improvement of vulvovaginitis of unknown origin in a pediatric patient - case report

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Summary

Purpose: To present a novel therapy for pediatric vulvovaginitis. **Materials and Methods:** An eight-year-old girl with persistent severe vulvovaginitis of unknown origin also complained of unexplained weight gain and sudden academic difficulties. She was treated with dextroamphetamine sulfate. **Results:** She not only showed very quick and excellent relief from her vulvovaginitis but she also lost weight and improved her mentality. **Conclusions:** Sympathomimetic amine therapy may benefit pediatric vulvovaginitis when an infectious cause cannot be ascertained.

Key words: Pediatric vulvovaginitis; Sympathomimetic amines; Sympathetic nervous system hypofunction.

Introduction

Hypofunction of the sympathetic nervous system has been linked to a wide variety of chronic disorders refractory to standard therapy but very responsive to treatment with sympathomimetic amines especially dextroamphetamine sulfate [1, 2].

Various pelvic pain syndromes especially chronic pelvic pain, dysmenorrhea, dyspareunia, and interstitial cystitis respond quickly and effectively to dextroamphetamine sulfate despite failing other therapies [3, 4]. Vulvovaginitis is another part of the chronic pain syndrome which in the author's experience sometimes responds to dextroamphetamine sulfate but not as well as other types of pelvic pain.

The case presented herein describes an enigmatic case of severe vulvovaginitis in an eight-year-old that responded very well to dextroamphetamine.

Case Report

A mother brought her eight-year-old daughter to the authors' reproductive endocrine group with a frustrating problem. Though our group generally does not see pediatric patients the mother was frustrated by the failure of multiple specialists including pediatric endocrinologists, pediatric gynecologists, infectious disease specialists, and neurologists to determine the etiology of her daughter's sudden development of weight gain, becoming a student who struggled academically when she was previously the top of her class, and her development of a malodorous vaginal discharge and a very painful vulvovaginitis. Also she started very early pubarche at age seven.

Laboratory tests taken at age nine found her electrolytes to be normal except the potassium was somewhat low at 3.6 mmol/L (normal 4.1–5.8 mmol/L). The rest of the complete metabolic panel was normal. Serum iron was normal. Her complete blood count was normal as was her sedimentation rate of 7 (0–20 mm/hr).

Stool for ova and parasites were normal. Her 8:00 a.m. cortisol was normal at 13.0 mcg/dl (nl 9–22). Her serum FSH was appropriately low at 1.2 mIU/ml. Her free thyroxine level was low normal one ng/dL (normal 1.0–1.8 ng/dL). Her free triiodothyronine was 3.9 pg/ml (normal 2.3–4.2). The thyroid stimulating hormone (TSH) level was 2.21 uIU/ml (0.5–3.8 uIU/ml). Her vitamin 25 OH D levels were normal at 25.5 ng/mL (normal 25–80 ng/mL). Her androgen levels were not elevated, DHEA-sulfate 81 ug/dl, and her free T was normal at 5.8 ng/dl (normal 2.5–10).

A celiac panel was negative. A repeat TSH level was normal at 2.47 (normal 0.358–3.740). The serum prolactin level was not increased (6.2 ng/ml). A bone age was appropriate. A repeat free T4 was 1.2 (0.9–1.6 ng/dl) and the TSH was 1.04 mIU/l (normal 0.5–4.30). The serum estradiol was < two pg/ml and the LH was suppressed at < 0.02 mIU/ml. Multiple cultures of the vagina were negative as were urine cultures.

The authors advised the child and her mother that they believed she had hypofunction of the sympathetic nervous system syndrome otherwise known as the sympathetic neural hyperalgesia edema syndrome. This would explain the weight gain and could explain the vulvar and vaginal severe irritation and discomfort [5]. Thus they suggested that her inability to focus in school and possibly the reason for her recent drop from a top student to mediocre could be related to attention deficient hyperactivity disorder (ADHD) (though in her case lacking the hyperactivity). Since dextroamphetamine sulfate is a class II drug and requires the diagnosis of ADHD preferably by a neurologist, psychiatrist, or clinical psychologist, the authors advised her mother (who is a nurse) to ask the next neurologist with whom they had an appointment to consider the diagnosis of ADHD and prescribe dextroamphetamine sulfate. They explained that there are many drugs for ADHD but the only one that will treat the sympathetic neural hyperalgesia edema syndrome is dextroamphetamine sulfate as they believe this drug mimics the function of the neurotransmitter for sympathetic nervous system function.

The neurologist did not heed the present authors' advice but instead wanted to conduct a series of neurologic tests including a lumbar puncture. The mother instead brought her daughter to the present authors' Pennsylvania office rather than the one in New

Revised manuscript accepted for publication January 31, 2013

Jersey where she was first seen so they could prescribe dextroamphetamine sulfate without the affirmed diagnosis of ADHD (and thus considered an off-label use) because in New Jersey it is not legal to prescribe any class II drug off-label.

Within a very short length of time the young lady who was now nine-years-old showed tremendous improvement following treatment with dextroamphetamine sulfate extended release capsules 15 mg once daily. She began losing weight and her mentality improved to her former top student self. Also, and the subject of this case report, her severe vulvovaginitis completely cleared up. Interestingly the slightly malodorous mysterious intermittent vaginal discharge still occurred but was not associated with vaginal irritation. Previously, though, the young girl stated that she had episodes of introital irritation without the discharge but she believed that the vaginal discharge made it worse; now the vaginal discharge causes no irritation at all.

Discussion

The authors have hypothesized that one common factor, i.e., hypofunction of the sympathetic nervous system, is a frequent main etiologic factor in a wide variety of chronic disorders that are refractory to standard therapy or perhaps show some improvement with standard therapy but have a risk of serious side effects and/or life threatening complications with these standard therapies [1, 2]. But most importantly these various disorders respond very well to a very well-tolerated medication with no long term sequelae, i.e., dextroamphetamine sulfate [1, 2]. The reason for the class II label is when used in illicit not pharmacological dosages it can be addicting.

Dextroamphetamine sulfate to treat edema has been used for more than 50 years [6]. More than 25 years ago the authors demonstrated that severe long term treatment resistant urticaria improved markedly following sympathomimetic amine therapy probably related to reducing the permeability from histamine containing vesicles [7].

With prior publications on the use of sympathomimetic amines for medical conditions compounded with the fact that dextroamphetamine sulfate is available as a generic and it is a class II drug makes it highly unlikely that a pharmaceutical company will promote this medication.

Without the likelihood of the support from pharmaceutical companies the main way to promulgate the knowledge is by publications. Thus whenever a new unique presentation of this syndrome occurs, e.g., vulvovaginitis in an eight-year-old that responds to sympathomimetic amine therapy, the authors will attempt to publish the case report.

Unfortunately for unexplained reasons most physicians seem to be resistant to this concept and simple safe therapy. The authors published a case report of a woman with Crohn's disease Stage IV with 8-12 painful bowel movements who failed to improve despite cyclophosphamide, glucocorticoids, and three different types of anti-tumor necrosis alpha inhibiting drugs and was advised by a highly regarded gastroenterologist who specialized in Crohn's disease that she needed a colectomy and ileostomy [8]. Despite the fact that she was 90% improved within one week of taking the dex-

troamphetamine sulfate 15 mg extended release capsules and 100% improved (one painless bowel movement per day) within one month of therapy and repeat colonoscopy showing complete remission, her treating physician strongly believed that the remission was unrelated to medication. The patient's gastroenterologist believed her recovery was merely spontaneous and in the future does not plan on using it on any other patients with Crohn's disease [8].

Another interesting anecdote was a case the authors have not reported where a woman had 20 years of severe migraines that her consulting neurologist was unable to ever find one drug combination to give her relief, but his belief was that one day she would develop multiple sclerosis. She had immediate relief from taking dextroamphetamine sulfate and her migraines which were daily completely disappeared. When she returned to her neurologist he advised her to stop the medication saying it was a dangerous drug, but on cessation her migraines returned immediately. She restarted her dextroamphetamine sulfate and her symptoms and her migraines completely abated again.

The authors believe that this is the first report of treating a case of vulvovaginitis in the pediatric population with dextroamphetamine sulfate. It is believed that the sympathomimetic amine's benefit was related to diminishing cellular permeability which not only allowed absorption of irritating chemicals from sweat and from the vaginal discharge into the vulva or vagina, but also diminished capillary permeability when standing which had led to edema and weight gain she did return to her normal weight after treatment [5].

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