

Case Report

Anorexic Girl Presenting with Severe Bradycardia and Amenorrhea: A Serious Presentation of a Medical Condition

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Abstract

Anorexia Nervosa is an eating disorder presenting with a low weight in patients with a fear of gaining weight leading to restriction of intake. Patients with this disorder have a strong desire to stay thin, with the psychological stress and nutritional deficiency in such patient the symptoms can vary with patient often being difficult to diagnose.

Case Presentation: A 22 year old lady presented in the tertiary care hospital, Karachi, Pakistan with complain of amenorrhea. According to the patient her menstrual cycle had been completely normal until four months back when it suddenly stopped. The patient's attendant reported a history of weight loss in the patient with a gradual and progressive weight loss of 25 kg in the past 6 months with normal appetite but doing excessive exercise. Previously the patient had been admitted due to acute gastroenteritis which resolved in 2 days. Investigations were carried out, the patient had a BMI of 14.3 kgm⁻² and a heartrate of 40 beats/min. MRI showed no signs of micro or macro adenoma of the pituitary. Her FSH, LH and free T4 were reduced and she was found to be hypotensive with a blood pressure of 90/60 mmHg.

Treatment course: She was initially kept in ward to monitor her blood pressures with fluid being given. After an interview with the patient and her family a diagnoses of anorexia nervosa was reached with the patient being started on SSRI treatment. Thyroxine was also given to bring FT4 to normal range.

Keywords: Anorexia Nervosa, Pakistan

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Introduction

Anorexia Nervosa often only referred to as anorexia is an eating disorder characterized by a distorted perception of weight in patients leading to an intense fear of gaining weight and an abnormally low body weight. It is an extremely unhealthy and sometimes even life threatening condition that may present with a wide variety of symptoms and complications. It has the highest mortality of any psychiatric disorder.¹ It is more prevalent in women with 0.3 – 0.4 % of women being affected at a given time as compared to 0.1% of men. It is more common among teenagers with the average age of onset being of 15 years.² Although cases of severe anorexia nervosa are rare they can be challenging and at often times frustrating to deal with for the caregivers and the physicians.

Anorexia Nervosa can have numerous effects on the physiological and psychological functioning of the body with the symptoms at presentation varying from

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on patient to another

Our report describes the a 22 year old lady with a history of progressive weight loss who arrived at the endocrine clinic at Aga Khan University Hospital with the complaint of amenorrhea since four months.

Case

A 22 year old female university student, belonging to a middle class family in Karachi, with no prior known comorbid came to the tertiary care hospital, Karachi, Pakistan with the primary complain of amenorrhea since four months. The patient reported to have had a normal menstrual history prior to these four months with a normal regular cycle and no dysmenorrhea. Her age of menarche was 14 years. She also denied having any symptoms other symptoms like fever, headache, night sweats, diarrhea, hemoptysis or cough.

On further investigation the patient's attendant reported a gradual, progressive and intentional weight loss with the patient weight decreasing 25 kg in the last 6

months. The attendant also reported the patient's diet and appetite to be normal with an increase in her work out and exercise. The patient had also been previously admitted at our hospital secondary to acute gastroenteritis which had been managed by electrolyte and fluid replacement therapy. The patient's past medical history was normal with her family history also being normal. The patient reported no anxiety or mood related symptoms.

On physical examination the patient had a BMI of 14.3 kgm^{-2} , with a blood pressure of 90/60 mmHg. She was found to be bradycardic with a heart rate of 40 beats/min. The rest of her physical exam was normal. Blood test done showed her hemoglobin to be 11.2 g/dl, with a WBC count of $3.2 \times 10^9/\text{L}$ and platelet of 119. Her FSH was 1.07 mIU/ml and LH was 0.07 mIU/ml. Her TSH was 0.95 uIU/ml, her FT4 was 0.85 ng/dl and her FT3 was 1.2 pg/ml. Her prolactin, estrogen and iron studies were found to be within the normal range. An MRI of brain showed a normal pituitary with no evidence of micro or macro adenoma.

Because of her hemodynamic instability she was managed inpatient with a symptomatic fluid therapy given to her. Dopamine was started for bradycardia but was stopped. For treatment of her secondary amenorrhea she was started on Familia oral tablets containing ethinyl estradiol and levonorgestrel. A diagnosis of anorexia nervosa was reached and she was started on an SSRI. She was also started on low dose thyroxine 12.5 mcg/day given 5 days in a week.

After two days on inpatient monitoring, she was discharged with her vitals reaching normal levels and was followed up in clinic. Her symptoms improved with resolution of amenorrhea with her flow becoming regular again.

Discussion

Anorexia nervosa is a serious psychiatric condition having a negative effect on a person's wellbeing. About 50% of patients with such a condition have been found to have at least one comorbid psychiatric illness with many of the patients suffering from mood or anxiety disorders.³ Furthermore in previous studies it was seen that having a prior psychological illness along with anorexia leads to a poorer outcome after treatment and a resistance to pharmacotherapy.⁴

It has also been seen to affect various systems of the body with many of the symptoms arising as a direct result of the weight loss and malnutrition. It is known to cause dysphagia due to weakness of pharyngeal muscles, as well as delayed gastric emptying leading to early satiety, nausea and bloating making nutritional intake difficult.⁵ Hypoglycemia is also common

in such patients which causes damage to hepatocytes raising the plasma AST and ALT levels.⁶ It has been postulated that it may also be related alterations in cardiac conduction and repolarization. A series study showed that 90 % of patients with anorexia had sinus bradycardia.⁷ Similar observation was made in our case, with the patient having a low heart rate.

Several endocrine complications are also associated with severe anorexia with the most common complaint in women being of amenorrhea often due to a fall in hypothalamic-pituitary axis with a low serum FSH and LH. In most cases the absence of menses resolves after appropriate treatment and restoration of weight, however there have been cases with amenorrhea becoming permanent even after weight gain.^{8,9} For our patient, the primary concern was amenorrhea which was treated with the help of hormonal therapy which proved to be effective. In males it is associated with a low testosterone with a low potency, infertility and decreased muscle strength. Studies have also shown it to cause a decrease in cortisol level, resistance to growth hormone and thyroid abnormalities, often presenting as euthyroid state.¹⁰ For our patient a similar picture was seen with a low FT4 but no symptom of thyroid deficiency. A low dose thyroxine was started to bring FT4 levels back to normal.

Treatment of anorexia nervosa varies depending on the presenting symptoms with the results showing varying degrees of success. A study done in United States showed that after a 9 year follow up following treatment 31% of the patients had recovered and this number increased to 63% following a 22 year follow up.¹¹ Another study showed the importance of personalizing therapy based on a patient's condition and needs to be modified for each patient depending on the level of risk, form of illness and the patient's own social and support structure.¹² It has been seen that a combination of re-nourishment and anorexia nervosa specific psychotherapy often shows a positive outcome.¹³ In our patient the treatment focused on various aspects of the patient's health with the treatment being given in accordance with her symptoms. Anti-depressant therapy proved to be effective in treating the patient's anxiety in regards with weight gain.

Conclusion

The patient had an intense fear regarding weight gain, and despite a normal seeming diet she had been losing weight because of the increase in exercise and workout routine. This rapid decline in BMI had been the cause of her primary complaint of amenorrhea as well as bradycardia. As in this case it is recommended to have a holistic picture of the patient in front of you when treating them. Tests like Iron studies, CBC, serum

hormone levels, thyroid levels and brain imaging should be performed in patients presenting with amenorrhea to rule out other causes. Hormonal therapy has been proven to be an effective treatment for amenorrhea in such cases and can be administered along with anti-depressant such as an SSRI.

Conflict of Interest

None

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None

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