

Interesting Cases

Weight Loss in an Adolescent - Beyond Anorexia Nervosa

Padmasani Venkat Ramanan¹, Adarsh Kancharla², Dhivyalakshmi Jeevarathnam³,

Thasma Santhanakrishnan Arunprasath⁴

¹Professor, ²Postgraduate Student, ^{3,4}Associate Professor, Department of Paediatrics, Sri Ramachandra Institute of Higher Education and Research, Porur, Chennai, Tamil Nadu, India.

I N F O

Corresponding Author:

Thasma Santhanakrishnan Arunprasath,
Department of Paediatrics, Sri Ramachandra
Institute of Higher Education and Research, Porur,
Chennai, Tamil Nadu, India.

E-mail Id:

drtasarunprasath@yahoo.com

Orcid Id:

<https://orcid.org/0000-0002-4897-5400>

How to cite this article:

Ramanan PV, Kancharla A, Jeevarathnam D,
Arunprasath TS. Weight Loss in an Adolescent
- Beyond Anorexia Nervosa. Postgrad J Pediatr
Adol Med. 2025;1(1):45-46.

Date of Submission: 2025-08-11

Date of Acceptance: 2025-11-29

A B S T R A C T

Anorexia nervosa (AN) is an eating disorder characterised by self-restriction of food intake fearing weight gain. This psychological disorder is diagnosed as per DSM-V criteria. However, this psychological disorder is known to coexist with medical conditions. Treatment of the associated medical condition is essential for the successful management of AN cases. Here, we present a case of Graves' disease coexisting with AN which was successfully managed with antithyroid medications and psychoeducation.

Keywords: Anorexia Nervosa, Graves' Disease, Adolescent

Introduction

Adolescence is a period of tremendous psychosocial and emotional changes and is often associated with body image concerns. Eating disorders are common among them and are being readily diagnosed. Anorexia nervosa (AN) refers to a powerful fatal psychological eating disorder characterised by extreme reduction in amount of food eaten, acute panic of putting on weight and disfigured body shape.¹ It is important to identify medical disorders that mimic AN as misdiagnosis causes treatment delay, unnecessary medical costs, and potential complications. In this case report, we want to emphasise the fact that even after a diagnosis of an eating disorder like AN is made, we have to look beyond it. Recently we managed an adolescent who was diagnosed with AN based on DSM-V criteria. But

we looked beyond it and we could diagnose co-existing Graves' disease.

Case Report

A 14-year-old adolescent girl had normal developmental features when she was brought with complaints of progressive decrease in appetite and weight for the past 3 months. She revealed no inherent symptoms. Her menses began 1 year ago but she was suffering from hypomenorrhea. She was ridiculed by her friends for her plump body which resulted in her obsession with her body shape and slowly her food intake decreased.

On examination, she was expressive as well as vigilant.

- Height - 155 cm (lower than 10th percentile)
- Weight - 30 kg (less than 3rd percentile)

- BMI - 12.5 (less than 3rd percentile)

Tanner Staging of SMR - B4P4A4

She was found to be cachexic and had been suffering from goitre Grade 1. Her general physical examination, vital signs and systemic examination were otherwise unremarkable. AN was suspected due to her obsession with her weight. On clinical psychology evaluation, she was diagnosed to have Anorexia Nervosa based on DSM-V criteria. However, we evaluated her for medical disorders which may co-exist or result from AN.

Preliminary Investigations

- Microcytic hypochromic anaemia (Hb-9.3)
- Serum TSH < 0.005 mIU/L
- FT4 - 4.27 ng/dl
- Chest X-ray - normal
- Anti-TPO antibody - 1243 IU/ml
- Anti-thyroglobulin antibody - 17.3 IU/ml
- TSH receptor stimulating antibody - 4.864

USG neck showed the thyroid to be bulky having a heterogeneous echotexture with enhanced vascularity.

Technetium M 99 scan showed a rise in tracer uptake (16%).

Leucocyte count, serum electrolytes, fasting and post-prandial blood sugar, platelet count, liver function test, serum albumin and ultrasonography (USG) abdomen were normal.

Treatment: Carbimazole and gradual re-feeding was given along with psychological counselling.

She was discharged after she put on some weight. Follow up revealed that her appetite had returned to normal, her periods were regular, and she had sufficient weight gain.

Discussion

Among children, the occurrence of Graves' disease has been found to be 1:5000. It has a peak incidence in children between the ages of 11 and 15 years, and shows a male:female ratio of 1:5.² The symptoms, progression and severity of the disease differ from person to person. There may be least enlargement of the thyroid gland or it may even be absent in some cases. Merely one-fourth cases show the usual diagnostic eye and skin symptoms and more than half of the cases reveal sympathetic nervous system symptoms.³ Hence the condition should be suspected in any adolescent with significant weight loss. Treatment options are antithyroid drugs which decrease the release of thyroid hormone, thyroidectomy (surgical excision of the gland), and radioiodine (radioactive iodine I-131). Among the children who have been treated with the antithyroid drug for 2 years, a remission rate of approximately 25% has been shown in various studies.⁴ Relapse may entail a resumption of therapy.

A medical condition and an eating disorder may occur together.⁵ The typical features of hyperthyroidism such as diarrhoea, menorrhagia, increased sweating are not seen, possibly due to the hypometabolic state produced by AN.⁶ The relation between anorexia nervosa and Graves' disease has been observed in earlier studies as well.⁶

Conclusion

The diagnosis of anorexia nervosa is established when all other medical conditions have been ruled out. Even after the diagnosis is established by DSM-V criteria, the child has to be evaluated for co-existing medical conditions. Treating only hyperthyroidism is not enough in case of an eating disorder, instead, it requires continual supportive therapy.

Conflict of Interest: None

References

1. Neale J, Hudson LD. Anorexia nervosa in adolescents. *Br J Hosp Med (Lond)*. 2020;81(6):1-8. [PubMed] [Google Scholar]
2. Huang SA, LaFranchi SH. Graves' disease. In: Kliegman RM, Stanton BF, St Geme III JW, Schor NF, Behrman RE, editors. *Nelson textbook of pediatrics*. 20th ed. Philadelphia: Elsevier Inc; 2016;2681-4.
3. Sato H, Minamitani K, Minagawa M, Kazukawa I, Sugihara S, Wataki K, Konda S, Inomata H, Sanayama K, Kohno Y, Sasaki N. Clinical features at diagnosis and responses to antithyroid drugs in younger children with Graves' disease compared with adolescent patients. *J Pediatr Endocrinol Metab*. 2014;27:677-83. [PubMed] [Google Scholar]
4. Ohye H, Minagawa A, Noh JY, Mukasa K, Kunii Y, Watanabe N, Matsumoto M, Suzuki M, Yoshihara A, Ito K, Ito K. Antithyroid drug treatment for graves' disease in children: a long-term retrospective study at a single institution. *Thyroid*. 2014;24:200-7. [PubMed] [Google Scholar]
5. Mehler PS. Diagnosis and care of patients with anorexia nervosa in primary care settings. *Ann Intern Med*. 2001;134:1048-59. [PubMed] [Google Scholar]
6. Kuboki T, Suematsu H, Ogata E, Yamamoto M, Shizume K. Two cases of anorexia nervosa associated with Graves' disease. *Endocrinol Jpn*. 1987;34(1):9-12. [PubMed] [Google Scholar]