Pluricarential Anemia Secondary To Autoimmune Atrophic Gastritis In A Young Female: Case Report

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ABSTRACT

Introduction: Anemia occurs when hemoglobin (Hb) levels are below the reference value according to age and gender, and corresponds to a major global health problem. Most anemias originate from deficiency syndromes, and their etiology must always be investigated.

Case Report: We report a 29-year-old female patient with refractory iron deficiency anemia, even after several attempts to oral iron replacement, associated with less pronounced vitamin B12 deficiency. Pluricarential anemia and unresponsiveness to oral iron in therapeutic doses triggered the diagnostic hypothesis of disabsorptive syndrome. Upper gastrointestinal endoscopy showed moderate gastric atrophy with active gastritis by histological evaluation and negative search for H. pylori. The evaluation of clinical, endoscopic and laboratory data (gastrin increase and positivity for anti-parietal cell antibody) provided the diagnosis of autoimmune atrophic gastritis. Parenteral replacements of iron and vitamin B12 were performed with good response and the patient is being followed up with hematologists and gastroenterologists. Thus, we report a case of a young patient with an uncommon presentation of iron deficiency.

Discussion: The non-responsiveness to oral iron replacement should trigger research into some disabsorptive clinical entities such as celiac disease, Helicobacter pylori infection and autoimmune atrophic gastritis. The latter may manifest with pluricarential syndromes (in particular by vitamin B12 deficiency, usually more pronounced, and iron deficiency). Nutrients malabsorption in autoimmune atrophic gastritis is due to blockade in H⁺/K⁺-ATPase pump due to antibodies.

Conclusion: Inadequate etiological investigation of anemia is an important cause of non-responsiveness to proposed treatments, with considerable morbidity for the population involved and expenditures for health care.

Key words: Anemia–Iron deficiency–Vitamin B12 deficiency–Autoimmune atrophic gastritis

1 INTRODUCTION

Anemia is defined by the clinical situation in which blood hemoglobin (Hb) values are below normal reference values for age and gender. It is one of the major public health problems worldwide, affecting more than a quarter of the population [1]. Half of the cases are due to iron deficiency, the most prevalent and neglected nutritional deficiency in the world, especially among women and children in developing countries [2].

In cases of anemia, is essential to ensure that the etiological diagnosis is correct and to investigate its possible causes, such as malabsorption, bleeding and inadequate intake [3].

Once the correct treatment with oral presentation of iron has been instituted, failure in therapeutic response should make aware of some possibilities. Among them are bleeding (mainly gastrointestinal tract losses or menstrual hyperflow), poor adherence to treatment, inflammatory diseases and underlying infectious diseases (altering the kinetic profile of iron by increased hepcidin), genetic causes, combined nutritional deficiencies or even causes related to malabsorption. Among disabsorptive etiologies, autoimmune atrophic gastritis, celiac disease or the presence of Helicobacter pylori infection.
loiriare highlighted [4]. Information such as the presence of comorbidities and previous surgeries should be actively questioned and may evidence data such as the presence of inflammatory bowel diseases or previous bariatric surgery, which may justify adisabsorptive state.

Autoimmune atrophic gastritis accounts for about 20% of cases of iron deficiency anemia non-responsive to oral replacement in patients with no evidence of bleeding in digestive tract. It has also been suggested that Helicobacter pylori infection may represent an early stage of autoimmune atrophic gastritis, triggering an immune mechanism against parietal cells through molecular mimicry [5].

There has been a reduction in the incidence of H. pylori associated gastritis and an increase in the number of cases and clinical consequences of autoimmune gastritis [6]. Histological findings of autoimmune gastritis are chronic inflammation restricted to gastric body with potential evolution for atrophy, characterized by loss of glandular units associated with lamina propria fibrosis and/or metaplastic changes that may have a pseudopyloric or intestinal phenotype [7]. Due to these atrophic changes, autoimmune gastritis is among precancerous entities [8]. In advanced cases, due to hypersecretion of gastrin by antral G cells, there is proliferation of enterochromaffin-like cells (ECL) that may constitute a spectrum ranging from a true hyperplasia to endocrine neoplasia [9].

The present study reports a case of a young female patient presenting pluricarential anemia (iron and vitamin B12 deficiency), even after several unsuccessful courses of oral iron replacement due to a dysabsorbitive etiology due to vitamin B12 deficiency, triggered the diagnostic hypothesis of dysabsorptive syndrome. An endoscopy was performed, which showed moderate gastric atrophy with active chronic gastritis, and a negative H. pylori research by both urease test and histological analysis. Laboratory tests showed increased serum gastrin of 593 pg/ml (reference value: 13-115 pg/ml) associated with reagent antibody to parietal cell but non-reagent anti-intrinsic factor antibody. After evaluation of clinical, endoscopic and laboratory data, the diagnosis of pluricarential syndrome of dysabsorptive etiology was done, with autoimmune atrophic gastritis as the underline cause.

The patient also has another autoimmune disorder, hypothyroidism, with positive anti-thyroid peroxidase antibody in use of levothyroxine. Parenteral replacements of iron and vitamin B12 were performed with good response and the patient is been followed up with hematologists and gastroenterologists.

3 DISCUSSION

Autoimmune atrophic gastritis is a common cause of vitamin B12 deficiency and also of iron deficiency, is more frequent in women and its incidence increases with age, being rare under 30 years old [10]. It is an autoimmune condition that blocks H+/K+ ATP-ase pump and prevents the formation of vitamin B12-intrinsic factor complex, inhibiting cobalamin absorption [11].

Autoantibodies (anti-parietal cell and anti-intrinsic factor) are prominent in the pathophysiology of this condition, and its detection is an important aspect for diagnosis [12]. Anti-parietal cell antibody is found in about 90% of cases of autoimmune atrophic gastritis, but it has low specificity and may be positive in the absence of clinically manifest disease and in other autoimmune disorders, thus, isolated, this criteria is not sufficient for the diagnosis. Anti-intrinsic factor antibody is found in approximately 60% of cases and is more specific, but, isolated, is also insufficient to define the diagnosis [11].

Thus, the presence of antibodies alone is not enough to establish the diagnosis, requiring a set of laboratory, endoscopic and clinical data. There is risk of progression to gastric cancer due to hypergastrinemia and induction of metaplasia, as well as increased microbial colonization with production of toxic bioproducts. Thus, regularly follow-up with upper digestive endoscopy is fundamental [13].

Autoimmune diseases share common clinical, laboratory and serological aspects, with a higher prevalence in females and association with the major histocompatibility complex (HLA DR2, DR3 and DR8) [14]. They are characterized by autoantibodies production, as well as changes in mononuclear cell populations, such as lymphocyte activation and natural-killer cells decrease. They can be associated in different combinations, for example, the overlapping syndromes and the polyglandular syndromes [15].

Particularly, patients with autoantibodies against thyroid elements, such as the patient reported, are more likely to have autoantibodies against other organs [16].

An exhaustive investigation was initiated in order to identify the cause of persistent iron deficiency. The patient presented unrestricted food intake, including red meat more than three times a week, with no history of any obvious bleeding, physical examination without signs of telangiectasis or other noteworthy changes. The non-responsiveness to oral iron in therapeutic doses, associated with vitamin B12 deficiency, triggered the diagnostic hypothesis of dysabsorptive syndrome.

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celiac disease, vitiligo, myasthenia gravis, autoimmune liver disease, multiple sclerosis and alopecia areata has already been demonstrated [17].

Given the complexity of the diagnosis, the prevalence of autoimmune atrophic gastritis is certainly underestimated, making it difficult to collect reliable data on the risk of progression to gastric cancer [11].

Evidence of anemia is an important sign of underlying diseases, and its cause should always be investigated through laboratory data and clinical context as assessed by a complete anamnesis. It is important to evaluate the possibility of new and old bleeding, use of medications, signs of hemolysis or bone marrow failure, previous deficiency of vitamins, ethnicity (considering genetic anemias such as thalassemia and sickle diseases) and detailed physical examination.

4 CONCLUSION
The lack of etiological investigation of anemia is an important cause of refractoriness to proposed treatments, with considerable morbidity and unnecessary increases in health care costs.

The present report is particularly relevant due to its atypical clinical presentation (predominantly iron deficiency in relation to vitamin B12 deficiency), and to the occurrence in a younger patient, not in the expected age range. It is important to be aware of this clinical scenario, due to the importance of this entity and its oncogenic potential, especially in the context of absence of H. pylori documented by histological findings and urease test.

REFERENCES