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RESEARCH ARTICLE

BIERMER'S DISEASE IN NORTHERN SENEGAL

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ABSTRACT

Summary: Biermer's disease is an autoimmune disease characterized by the presence of gastritis, various auto-antibodies including intrinsic antifactor antibodies and parietal anticellules and accompanied by malabsorption of vitamin B12.

Patients and Methods: This was a prospective study between Janvier 2016to August 2017 at the department of internal medicine of the Saint-Louis regional hospital, Senegal.

Results: A number of 23patients were retained for the study with a mean age 51.08 years and the sex ratio M/F at 0.53. Average time to diagnosis was 16 weeks with extreme ages ranging from 2 to 48 weeks. The diagnosis was suspected in the presence of Neurologic-anemic syndrome and confirrmed by low vitamin B12 blood levels and the presence of anti intrinsic factor antibodies. In certain patients, vitamin B12 therapeutic test was contributive. The clinical manifestations were dominated by anemia signs (23 cases), palmo-plantar acquired diffuse melanodermia (13 cases), GIT signs including Hunter glossitis (9) and polyneuropathy. The Anemia was macrocytic in 21 (91.30%) of the cases, normocytic in 2 (8.7%) of the cases. The mean hemoglobin level was at 4.79 g/dl. Serum vitamin B12 low in 14 (60.86%) of the patients with a mean value at 50 pg/ml. Anti intrinsic factor antibodies were positive in 4 (17.39%) of the cases. In patients who had gastroscopy, the histology showed features of chronic atrophic gastritis in 65.21% of the cases. The treatment comprised whole blood transfusions and supplementations of vitamin b12 parenterally. In all of our patients, we noted regression completely of the melanodermia, glossitis and normalization of the hemoglobin.

Conclusion: In our study Biermer's disease is revealed by anemia, melanoderma and gastrointestinal signs contrasting with the rarity or absence of neurological and vascular manifestations. Clinical polymorphism justifies thinking more often and trying to eliminate other differential diagnoses.

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INTRODUCTION

Biermer's disease (formerly known as pernicious anemia) is an autoimmune atrophic gastritis, predominantly fundial, responsible for a deficiency of vitamin B12 by malabsorption of the latter. It is characterized by the presence of anti-intrinsic factor antibodies. In our countries, it is often under-diagnosed due to its polymorphic clinical manifestations. These manifestations are mainly related to the involvement of tissues with high cell renewal such as digestive mucosa, bone marrow, and the nervous system, explaining the hematological abnormalities, digestive and neurological disorders usually encountered. Because of its polymorphism and the specter of its clinical manifestations, Biermer's disease is a great simulator. Its diagnosis must therefore be evoked and considered in principle in front of all neurological and haematological tables. Through this study we analyze the epidemiological profile, the clinical and paraclinical aspects and the evolutionary modalities of Biermer's disease.

MATERIALS AND METHODS

It is a prospective and descriptive study conductedfrom 1st January 2016 to 30th August 2017. Our study held at Internal Medicine Department of hospital of Saint-Louis Aristide (Senegal). We included 23 files of Biermer disease, onto an annual average of 248 hospitalized patients, ie a hospital prevalence of 9.27%. Epidemiological, clinical and paraclinical data were analyzed. The diagnosis of Biermer disease was made on the basis of the presence of vitamin B12

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deficiency, positive anti-intrinsic factor or anti-parietal cells antibodies, and atrophic gastritis (Segbena *et al*., 2003). Bone marrow aspiration and analysis provided precision on the existence of megaloblastosis. Vitamin B12 deficiency was defined by measurements below normal values between 187 and 883 pg/ml. Upper Gastro-Intestinal-Tract (GIT) endoscopy with systematic antrum and fundusbiopsies and histology revealed gastric atrophy, metaplasia or helicobacter pylori (HP). Diagnosis was confirmed by the presence of anti-intrinsic factor antibodies or atrophic gastritis associated to positive response to systemic vitamin B12 therapy. Cyanocobalamine is administered intramuscularly (1000 µg once a day for the 1st week, then once a week for a month and once a month for life.

RESULTS

23 files were included in our study: 15 women and 8 men (gender ratio: 0.53), with mean age of 51.08 years.

Average time todiagnosis was 16 weeks (2 - 48 weeks). Presenting symptoms (Table 1) were anemia signs (23 cases), palmo-plantar acquired diffuse melanodermia (13cases), GIT signs including Hunter glossitis (9) and polyneuropathy (6 cases). We did not find any cases of deep vein thrombosis and the neurological manifestations were only represented by polyneuropathic arrays.

Table 1. Clinicals characteristics of patients

Clinical characteristics		Number of patients	%
Anémia		23	100
Melanodermia		13	56.52
Neurology		6	26.08
Gastrointestinal manifestations	Glossitis	2	8.69
	Epigastric pain	7	30.43
	Subictere	3	13.04

Table 2. Paraclinicals characteristics of patients

Paraclinical signs	Number of patients	%
Anemia	23/23	100
Thrombocytoenia	12/23	52.17
Leukocytopenia	15/23	65.21
Pancytopenia	11/23	47.82
Bicytopenia	9/23	39.13
Thrombocytosis	0/23	0
Hyperleukocytosis	2/23	8.69
Vitamin B12 deficiency	14/23	60.86
Positive anti-intrinsic factor antibodies	4/23	17.39
Atrophic gastritis	15/23	65.21
Antrum and pyloric metaplasia	7/23	30.43
Helicobacter pylori	5/23	21.73

Complete blood count showedanemia (23 cases), macrocytosis (21 cases). The mean hemoglobin was 4.79 g/dl ± (2.4 to 8.3). BC (Table 2) also revealed thrombocytopenia (12 cases) out of which 7 were below 50 G/L without bleeding. There were cytopenias in form of pancytopenia (11 cases) and bicytopenia (9 cases). Reticulocyte count was low in all patients. Traces of hemolysis were noted in 3 patients. The dosage of vitamin B12 was done in 14 patients, ie 60.86%, and in intrinsic antifungal antibodies in only 4 patients, ie 17.39%. On the other hand, oesogastroduodenal fibroscopy was performed in 100% of the cases and recoveredatrophic gastritis (65.21%), antrum and pyloric metaplasia (30.43%) and HP infection (21.73%) (Table 2). Comorbidities were vitiligo (2 cases), type 2 diabetes mellitus (2 cases) and multiple auto immune disease syndrome (2 cases). All our patients were treated with injectable vitamin therapy. At the end of a week a reticulocyte crisis was observed in all with? So, within an average time of 15 days, we noted complete regression of the skin hyperpigmentation.

DISCUSSION

In our study as well as in other african publications (Segbena *et al*., 2003; Mseddi *et al*., 2006; Diop *et al*., 2013; Fall *et al*., 2016; Ndiaye *et al*., 2009), Biermer disease is common in women. This disease is considered rare in the black subject. In 2013, Diop *et al.* (2013) collected 28 cases over 6 years. Biermer disease has certain peculiarities in the black subject, except for the predominance of females and young age, acquired melanoderma is constantly postponed. Predominant signs on presentation in our study were anemia signs, which also were almost present in de Diop and al (2013) and Fall *et al*. (2016). Diagnosis of Pernicious anemia was confirrmed in our patients in the presence of chronic anemia with neurological manifestations, low blood levels of vitamin B12 and a positive anti-intrinsic factor antibodies test. But as for Segbena *et al*. (2003), positive response to systemic vitamin B12 therapy contributed also to confirrmation of Biermer disease. The median time to diagnosis was 12 weeks in our study, while Diop *et al*. (2013) noticed a median delay of three years in their work. Fall *et al*. found a mean diagnostic time of 16 months. The revealing events were dominated by chronic anemia associated to lingual inflammation and neurological disorders as for Ndiaye *et al*. or Diop *et al*. (2009, 2013). Acquired melanodermia, second presenting sign in our study is also frequently reported in African publications (Diop *et al*., 2013; Fall *et al*., 2016; Andres *et al*., 2010; Erraj *et al*., 2010; Iba *et al*., 2008). It is a diffuse homogenous melanodermia with buccal and palmo-plantar predominance secondary to disturbed tyrosine synthesis, this being a melanin precursor (Iba *et al*., 2008). The third diagnostic condition in our study was GIT signs with atypical epigastric pain, followed by jaundice. This one is more specific of Biermer disease and was noted in 78.57% of patients in Diop *et al*. series. We did not find any cases of deep vein thrombosis and the neurological manifestations were only represented by polyneuropathic arrays. Fall and Diop have each reported 2 cases of thrombosis in their series. In addition to polyneuropathy, it is described in acute depression and combined sclerosis of the bone marrow more rarely in the literature (Diop *et al*., 2013). Our study showed, positivity of anti-intrinsic factor antibodies in 17.69 % where it was performed. But despite, their high specificity of PA, these antibodies may be absent among 30 to 50% of cases (Diop *et al*., 2013). However, Addison's autoimmune disease could not be formally excluded in our series as patients were not systematically checked serum and urinary cortisol concentrations. For the care of all patients, vitamin B12 given by intramuscular way, has led to gradual and complete resolution of clinical and biological disturbances as for Diop *et al*. (Andres *et al*., 2010).

Conclusion

In our study Biermer's disease is revealed by anemia, melanoderma and gastrointestinal signs contrasting with the rarity or absence of neurological and vascular manifestations.

Clinical polymorphism justifies thinking more often and trying to eliminate other differential diagnoses.

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