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RESEARCH ARTICLE

Clinical, Paraclinical and Etiological Aspects of Ascites in an Internal Medicine Department in Dakar, Senegal

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Abstract

Introduction: Data on the characteristics of ascites in Senegal are rare. The aim of this study was to determine the socio-demographic aspects of patients with ascites in an Internal Medicine department in Senegal and to specify the clinical, Paraclinical and etiological presentation.

Patients and method: This was a 12-month descriptive and longitudinal study. All hospitalized patients with ascite confirmed by ultrasound and fluid aspiration were included. Patients in whom chemical and cytological results of the ascite fluid were not obtained were excluded. Clinical signs, results of the cytochemical and bacteriological exam of the ascitic liquid and findings from radiological exams and endoscopic investigations were noted as well as the etiologies.

Results: Prevalence of ascite was 11.6%; our analyzes included 61 patients with mean age 44 years (range 16 and 86 years) and sex ratio 1.3 (35 men). The most frequent reasons for hospitalization were ascite (86.8%), jaundice (37.7%) and abdominal pain (29.5%). Ascites were of great abundance in 45.9% of cases, mean in 42.6% of cases and low in 11.5% of cases; macroscopic features were yellow citrine (72.1%), sero-hematic (17.7%), hazy (6.5%) and chylous (1.6 %). It was a transudate in 52% of cases. Etiologies were dominated by cirrhosis (52.5%), peritoneal Carcinomatosis (24.6%) and peritoneal tuberculosis (14.8%). Cirrhosis was of viral origin in 84.3% of cases.

Conclusion: Ascite is a common symptom in patients hospitalized in Internal Medicine department in Senegal. The patients are relatively young and the clinical and Paraclinical presentations are polymorphous. The etiologies are dominated by cirrhosis, peritoneal Carcinomatosis and peritoneal tuberculosis.

Keywords: Ascites, Cirrhosis, Peritoneal Carcinomatosis, Peritoneal Tuberculosis.

Introduction

Ascite is a frequent cause of consultation and hospitalization, particularly in Internal Medicine, Gastroenterology and/or Hepatology department [1-4]. It may be consequence of various pathologies, however ascites are more often associated with liver diseases particularly cirrhosis [5]. In Senegal, little scientific data are available on its presentation and causal characteristics [6]. Our objectives were to determine the socio-demographical aspects of patients suffering from ascite in an Internal Medicine department in Dakar, Senegal, and to specify clinical, Paraclinical and causal features of these ascites in order to optimize their management in our context of limited resource countries.

Patients and methods

We conducted a descriptive and longitudinal study over 12-month period (October 2015, September 2016). All hospitalized patients with confirmed ascite at ultrasound examination, whose cytochemical and bacteriological exam of the ascitic fluid had been done, were included. Those in whom the cytochemical and bacteriological results of the ascetic fluid exam were not available were excluded. In selected patients, we collected and analyzed data on age, sex, motives of hospitalization, clinical and Paraclinical signs, and the etiologies of ascites using EPI info version 7.2.0.1 and Excel. The diagnosis of cirrhosis was based on clinical arguments (ascite, hepatomegaly or hepatic atrophy, splenomegaly, thoracoabdominal collateral venous circulation), biological disorders (hypoprothrombinemia, hypoalbuminemia, and thrombocytopenia), morphological abnormalities (dysmorphism of the liver and/or irregular contours and/or heterogeneous or nodular parenchyma in ultrasound and/or CT scan) and endoscopic lesions (esophageal varices and/or portal hypertensive gastropathy).

Peritoneal Carcinomatosis was diagnosed in front of an exudative ascite with malignant cells and/or the discovery of an intra-abdominal primitive malignant tumor at medical imaging and/or at digestive endoscopy. In the absence of an intra-abdominal primitive malignant tumor, the diagnosis of peritoneal tuberculosis was based on lymphocytic exudative

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ascite with the presence of another extra-peritoneal tuberculosis localization and/or a positivity of adenosine deaminase and/or GenExpert in the ascitic fluid. Cardiac causes were retained in the clinical data associated with Doppler echocardiography, and renal causes in a proteinuria greater than 3 G/24 hours.

Results

Between the 558 hospitalized patients, 65 had ascite (prevalence of 11.6%). Excluded patients in the study were 4 and we analyzed the data of 61 patients. The sex ratio was 1.3 (35 men) with an average age of 44 years (extremes 16 and 86 years). The motives of hospitalization (often multiple in a same patient), the most frequent physical examination associated signs and the abundance of the ascite are shown in table I. In 50.8% of cases (31 patients), the ascite was poorly tolerated with the onset of symptoms like abdominal pain (18 cases), vomiting (12 cases), dyspnea (9 cases) and dyspepsia (6 cases). Paracentesis (ultrasound guided in 11.5% of cases) revealed the following macroscopic aspects of ascites fluid: yellow citrine (44 cases), serohematic (12 cases), hazy (4 cases) and chylous (1 case); this were a transudate fluid in 52% of cases and an exudate fluid in 48% of cases. Apart the ascite, the other abdominal abnormalities in medical imaging (ultrasound in all patients and additional CT in 68.8% of cases) are represented in table II. Etiologies were liver cirrhosis (52.5% of cases), peritoneal Carcinomatosis (24.6%), peritoneal tuberculosis (14.7%), glomerular nephropathy (4.9%), cardiac failure (1.6%) and undetermined (1.6%).

In liver cirrhosis, ascites were transudate in 87.5% of cases and exudative in 12.5% of cases (due to spontaneous bacterial infection). The origin of the cirrhosis was hepatitis B virus in 84.3% of cases, autoimmune in 6.2% of cases, hepatitis virus C in 3.1% of cases and undetermined in 9.4% of cases. Hepatocellular carcinoma was associated with cirrhosis (without occurrence of peritoneal Carcinomatosis) in 15.6% of cases.

Parameters	Cases number	Frequency
Motives of hospitalization		
Ascite	53	86.80%
Jaundice	23	37.70%
Abdominal pain	18	29.50%
Hematemesis	7	11.50%
Associated physical signs		
Œdema of limbs	29	47.50%
Jaundice	27	44.30%
Hepatomegaly	23	37.70%
Splenomegaly	12	19.70%
Pleural effusion	9	14.80%
Fever	7	11.50%
Abundance of the ascites		
Grade I	7	11.50%
Grade II	26	42.60%
Grade III	28	45.90%

Table 1: Motives of hospitalization, associated physical signs and abundance of the ascites.

Associated abnormalities	Cases Number	Frequency
Hepatomegaly	24	39.30%
Hepatic nodules	18	29.50%
Splenomegaly	14	22.90%
Portal hypertension signs	13	21.30%
Other tumors	11	18%
Hepatic atrophy	4	6.60%
Intra abdominal lymph nodes	3	4.90%
Dilatation hepatic veins	3	4.90%
Renal injuries	3	4.90%
Peritoneal thickening	1	1.60%

Table 2: Associated abnormalities to ascites at ultra sound and/or CT exams.

In peritoneal Carcinomatosis, ascites was exudative in all cases, and malignant cells were identified in the ascitic fluid in 60% of cases. The cancers involved were: liver (5 cases), pancreas (3 cases), ovary (3 cases), stomach (2 cases) and colon (1 case); in one case, the primary cancer was not found.

In peritoneal tuberculosis, ascites was exudative in all cases with lymphocytic cells predominance. Adenosine deaminase was positive in 1 of 6 cases where it was researched (i.e. 16.6% of cases) and GenExpert was positive in 3 out of 7 cases (i.e., 42, 8% of cases).

Discussion

Prevalence of ascites was 11.6% in hospitalized patients in our Internal Medicine department, its diagnostic and therapeutic care is an important part of our medical practice. Similar prevalence are found in hospitalization in Internal Medicine department in Burkina Faso (11.4%) and Benin (11.9%) [2, 7]. When patient recruitment concerns both hospitalized and ambulatory, prevalence of ascites reaches 3.6% in Mali and Ivory Coast [1, 3] and 3.93% in Benin [8]. The age and sex ratio of our patients are comparable to those already noted by many authors in Africa with relative youth of patients (average age between 39 and 49 years) and net men's predominance [1-3, 7]. This finding would be explained in part by the youth of the population in southern countries, but also by the nature of the causal pathologies represented primarily by chronic liver diseases at the stage of cirrhosis in relation to the great endemicity of viral hepatitis B and C most often contracted during early childhood [3, 6]. This prevalence of cirrhosis with portal hypertension reflects the nature of clinical and morphological manifestations with predominant liver signs (Tables 1 & 2).

The preponderance of large-abundance ascites is probably a consequence of late consultation, but it can also be linked to patient selection bias represented by the fact that most often, the most symptomatic patients are those that are hospitalized while the others benefit from an ambulatory exploration and follow-up.

The macroscopic and microscopic exam of the ascitic fluid is a systematic and fundamental step for diagnostic orientation [9]. The serum-ascites albumin gradient is more discriminative than

the exudative or transudative appearance of the ascitic fluid, but its determination requires the assay of albumin in serum and ascite on the same day [10]. As in other areas in Africa where biological explorations are difficult to obtain in due time, we have so far used the distinction between exudative ascites and transudative ascites for diagnostic discussion [1-3, 6-8]. The Laparoscopy Explorer with biopsies and anatomopathological analysis, as well as the determination of adenosine deaminase, GenExpert and tumor markers, are available in our country but they are not financially accessible.

Thus elements of certainty are rarely obtained and the diagnoses are based most often on a bundle of presumption arguments. The etiologies in our series are remarkable for the first place still occupied by cirrhosis, but also by the peritoneal Carcinomatosis that outpaces peritoneal tuberculosis contrasting with data reported in Burkina Faso, Ivory Coast, Nigeria and Benin [2-4, 7]. Peritoneal Carcinomatosis in our context are first linked to liver cancers, then to those of the pancreas and the ovary.

Conclusion

Ascite is common in hospitalized patients in our Internal Medicine department in Dakar, Senegal; it usually occurs in relatively young subjects and it's more often of great abundance with a yellow-citrine and transudate appearance. Despite the technical plateau that remains to be improved, etiologies are dominated by cirrhosis and peritoneal Carcinomatosis.

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