

Ketoacidosis Diabetic Revealing Multiple Splenic Abscesses: A Case Report

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Fatima Zahra El Bouazzaoui**Article History**

Received: 12.12.2018

Accepted: 21.12.2018

Published:30.12.2018

DOI:

10.36347/sjmc.2018.v06i12.011

**Abstract:** The mechanisms of immune defenses in diabetics are reduced. The hyperglycemic environment, poor circulations are factors that promote immune dysfunction and infections. The spleen is an uncommon site of abscess formation. Intrinsic immunological function of the spleen may provide relative protection against suppurative infections. The association between diabetes and splenic abscess is rarely reported in the literature. We report a case of a patient with ketoacidosis diabetic revealing multiples splenic abscesses.**Keywords:** diabetes, splenic abscess.**INTRODUCTION**

Splenic abscess is a suppuration collected in the spleen, secondary to an intrinsic infection of the spleen, haematogenous dissemination or an infection of contiguity. The rarity of spleen abscesses is apparent in all studies [1-3]. This rarity may be explained by the fact that the spleen has an ability to resist local infection. The difficulty of their diagnosis is due to their discreet and nonspecific clinical symptomatology. Most patients have a known risk factor, including conditions that compromise the immune system, such as endocarditis, diabetes mellitus, congenital or acquired immunodeficiency, and the use of immunosuppressive drugs [4]. Diabetes by its mechanisms of weakening of the immune system is one of the predisposing factors but rarely reported in the literature [5-8].

The new imaging techniques provide a considerable diagnostic and therapeutic contribution. The evolution of the splenic abscess is fatal in the absence of treatment [1].

CASE REPORT

F.J., 43 years old without particular pathological histories, known diabetic since the age of 29 years using insulin, diabetes is poorly monitored, the degenerative status is unknown. Admitted to emergencies for ketoacidosis diabetic. The anamnesis noted a asthenia, an important weight loss associated with a fever and chills evolving for 3 months with recent increase for 4 days. The clinical examination revealed a normal consciousness, fever at 39 ° C, tachycardia at 100 beats per minute, respiratory rate at 18 cycles per minute, blood pressure at 120/70 mmHg, capillary blood glucose at 3, 3 g / l and ketone bodies positive in the urinary strip. The abdominal examination had objectified a defense of the left hypochondrium.

The biological assessment showed a leukocytosis at 34320/mm³ predominantly neutrophilic, C-Reactive protein elevated to 331 mg/l, hypochromic

microcytic anemia at 7.5 g/dl, platelets at 198 000/u, creatinine at 1.14 mg/dl, urea at 0.60 g/l, alkaline reserves at 7 mmol/l, natremia at 135 mmol/l and potassium at 4 mmol/l. the standard correction of diabetic ketoacidosis was established.

An abdominal ultrasound was done in first line showing a multiple hypoechoic lesions in spleen, an abdominal CT complement showed a globular spleen with three fluid formations, the largest of which is inferior polar measuring 6 * 5.5 cm, discreetly enhanced on the periphery, seat of a hydroaeric level without other detectable lesions (Figure 1). The blood culture was done with negative results, liver serology and HIV was also negative.

The patient was placed on broad-spectrum intravenous antibiotic therapy combining a cephalosporin 3rd generation, gentamicin and metronidazole. Drainage of the abscess was planned but the evolution was quickly unfavorable marked by the installation of consciousness disorder. The patient died after a septic shock.

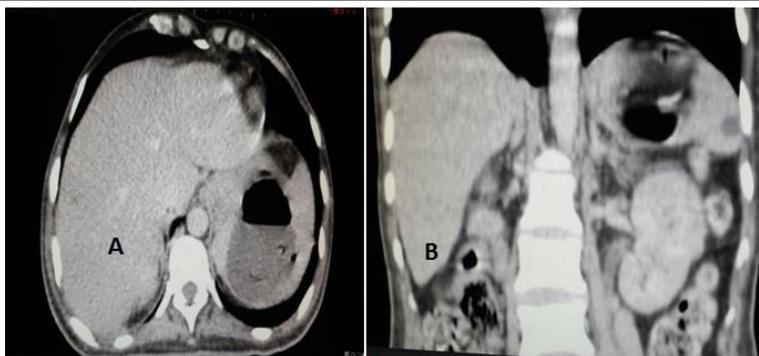


Fig-1: abdominal CT (A) axial reconstruction; (B) coronal reconstruction: images showing splenic lesions consistent with splenic abscess

DISCUSSION

Splenic abscess is rare, with a reported frequency of 0.14-0.7% in the autopsy series [4]. Its declared mortality rate is still high at up to 47%, and can potentially reach 100% in patients who do not receive antibiotic treatment [9]. The splenic abscesses reported in the literature can be seen at any age but occur mainly in adults and the elderly, the average age varies from 40 to 50 years according to the series [10-12]. There is a male predominance with a sex ratio approaching 2/1 [4, 11, 13]. Routes of infection of the spleen are classically described as haematogenous (eg systemic infection, infective endocarditis), contiguous infection, or direct inoculation (eg penetrating lesion or laparotomy) [14]. They occur readily in immunocompromised individuals by the presence of one or more defects. Indeed, an underlying pathology is noted in more than 50% of cases [10, 11, 15]. Diabetes, HIV infection, leukemia, immunosuppressive therapy are the most common [4, 11].

In diabetics, the mechanisms of immune defense are reduced, infections are often more serious than in non-diabetics [6]. Severe infection is one of the most common etiologies of diabetic ketoacidosis [6]. The highest frequency of infections in these patients is caused by the hyperglycemic environment that promotes immune dysfunction (damage to neutrophil function, antioxidant system depression and humoral immunity), micro and macroangiopathies, neuropathy, decreased urinary antibacterial activity, gastrointestinal and urinary dysmotility [16]. Indeed, the association of diabetes mellitus and splenic abscess has been described in some series, in splenic abscesses of *Klebsiella pneumoniae* by Lee [8], and in a 10-years retrospective study by Chee Yung, which reported 21 cases of splenic abscess, 18 of which have diabetes [7]. Chien-Wen Yang reported a fatal case of multiple splenic and hepatic abscesses in a patient with diabetic ketoacidosis and suggested that the long period of hyperglycemia was the major factor in the formation of these abscesses [6].

In our case reported, diabetes was poorly followed for a long period of 14 years, what involves a

long-term hyperglycemia which can also precipitate the formation of splenic abscess. The symptomatology of the splenic abscess presented by the patient was atypical, the revelation was only secondary to the ketoacidosis decompensation of her diabetes. Which is responsible for a delay of consultation.

Worsening the prognosis. Percutaneous drainage guided by imaging or surgical drainage is recommended because of the low penetration of antibiotics with a high cure rate [6]. However, in our patient, there was hemodynamic instability with the onset of septic shock that made either percutaneous drainage or surgical drainage extremely difficult. And despite the administration of a broad-spectrum antibiotic therapy, the patient died from deep septic shock.

CONCLUSION

This reported case is rare because the patient developed several abscesses of the spleen while this organ is considered for a long time as a microbial filter with an ability to resist a local infection. It is suggested that diabetes may be a risk factor for splenic abscess formation. The often atypical clinical picture explains the frequent use of imaging tests. Indeed, the CT scan allows not only to make the diagnosis, but also to perform percutaneous drainage for microbiological and therapeutic purposes. The prognosis of splenic abscess depends on the early diagnosis.

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