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Atrial Fibrillation on Severe Sepsis in Resuscitation - About a Case

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Abstract:

Severe sepsis associated with atrial fibrillation is rare in our practice. It is often responsible for heavy mortality. The immunodepression field (HIV 1) is an often unknown factor of severity that complicates sepsis. We report a case of a 53-year-old patient hospitalized in intensive care for severe sepsis complicated with atrial fibrillation and acute lung edema. Treatment consisted of vascular filling, antibiotic therapy, and Amiodarone. The evolution is marked by a thrombotic accident and an amputation of the foot. However, she has evolved well and was transferred to infectious diseases department on D18.

Keywords: ***Severe sepsis-atrial fibrillation-HIV1-resuscitation.***

Introduction

Severe sepsis is a frequent and fearsome condition in the intensive care setting. It is responsible for heavy mortality due to septic shock. It causes sympathetic stress associated with various physiological effects ranging from myocardial depression to immunosuppression. It is responsible for tachycardia, diastolic dysfunction, arrhythmia, cardiomyocyte apoptosis and myocardial sideration. The extra cardiac effects of adrenergic stimulation include a decreased intestinal perfusion, hypercoagulability, hyperglycemia, and catabolism state. Systolic myocardial dysfunction occurs in approximately 60% of patients with severe sepsis. It is associated with a decrease in survival.[1] Acute arrhythmias are the leading causes of sudden death. The numerous complications arising during the septic shock often worsen the prognosis of patients. There is also a lack of knowledge of the patient's history, which may be of great interest in the treatment. The association of atrial fibrillation and severe sepsis is very rare in our practice. We present a case of atrial fibrillation on severe sepsis at the resuscitation department of the Peace Hospital in Ziguinchor.

Patient and observation

She was a 53-year-old black, depigmented and multiparous patient with no known history received at the emergency service for a psychomotor agitation. The interrogation found the disease beginning three days before by the appearance of an abscess on the index finger. In face of the occurrence of fever and incoherent statements, she was taken to the health center where hypotension was found and from where she was transferred to the Hospital Emergency Department since she was not responding to the vascular filling. Physical examination revealed: good general condition with psychomotor agitation, signs of shock (cold extremities, pulse rate at 132 beats / min, blood pressure of 70/50 mmHg), polypneic patient at 28 cycles / min, infectious syndrome (Temperature 38.7 ° C), respiratory distress (81% saturation) and capillary blood glucose at 1.89. There was a painful swelling of the index finger, not fluctuating with an opening allowing the pus outflow. The neurological examination found a Glasgow at 11/15 (E3V3M5). The rest of the examination was normal. The patient was transferred to intensive care and the diagnosis of severe sepsis was retained. The patient benefited from an aggressive filling based on 03 Gelofusine followed by isotonic saline at 1.5 liters per hour, high-concentration oxygenation in the mask and sedation with Diazepam. Probabilistic antibiotic therapy was started with Ceftriaxone 2g twice daily in direct intravenous, Gentamycin 320 mg per day in mini-infusion, Metronidazole 500mg three times daily and Paracetamol injected with Tramadol (1g / 100mg four times daily). Prevention of stress ulcer is done with anti-H2. The following parameters were monitored every hour: diuresis, blood pressure, capillary glucose, respiratory rate, heart rate and saturation. The biological balance showed that the blood count was pancytopenia (white blood cells at 3700, red blood cells at 2.870.000 and platelets at 98.000), anemia at 9.2g / dl and a prothrombin low level at 52.7%, Acute renal failure with serum creatinine at 31.90mg / l and urea at 0.79mg / l, normal transaminases, and hypokalemia at 2.21mEq / l. Lactates were not dosed due to unavailability. The patient received a bandage for the index finger wound.

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Ten hours after the patient was admitted, diuresis was relaunched at 50cc/h, blood pressure was normalized (104/60 mmHg) and capillary blood glucose was at 1.14. However, tachycardia (124 beats per minute) and hyperthermia (37.8 ° C) persisted. On the second day of hospitalization, the patient had a heart rate around 200 beats/min, which required ECG (Figure 1), who found a regular tachycardia with narrow QRS with heart rate of 190 beats/min and common type of atrial fibrillation.

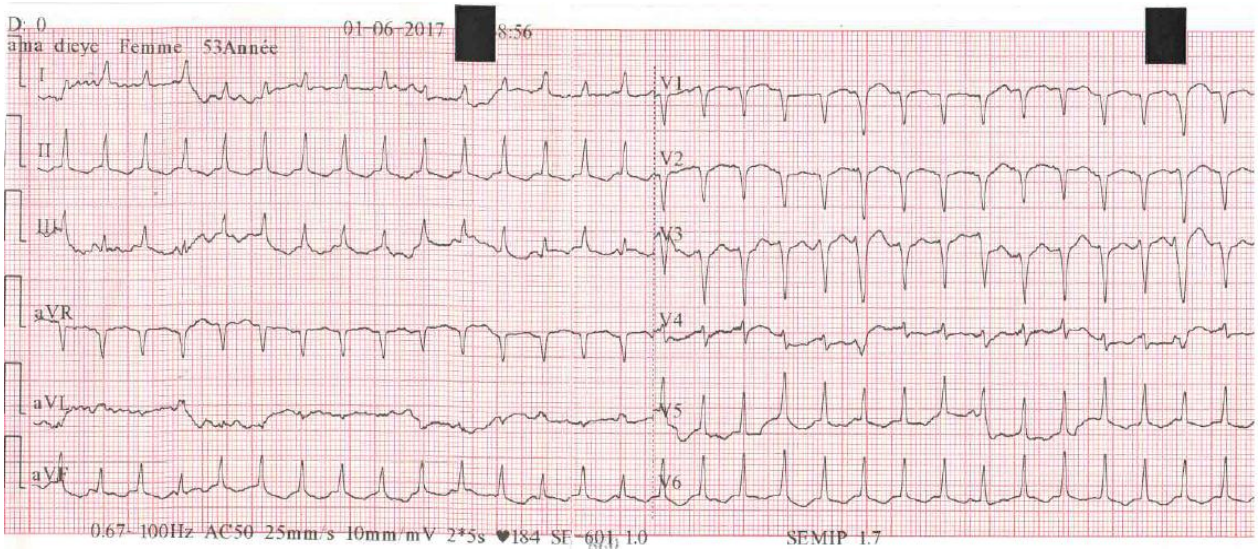

Figure 1: Atrial Fibrillation

In addition, pulmonary auscultation resulted in acute edema of the lung. The management of fibrillation consisted in the installation of a nasogastric tube and then the administration of loading dose of Cordarone in a proportion of 9 tablets dosed to 200mg each in a single take by the probe. The rhythm returned to normal within 60 minutes of administration (Figure 2).

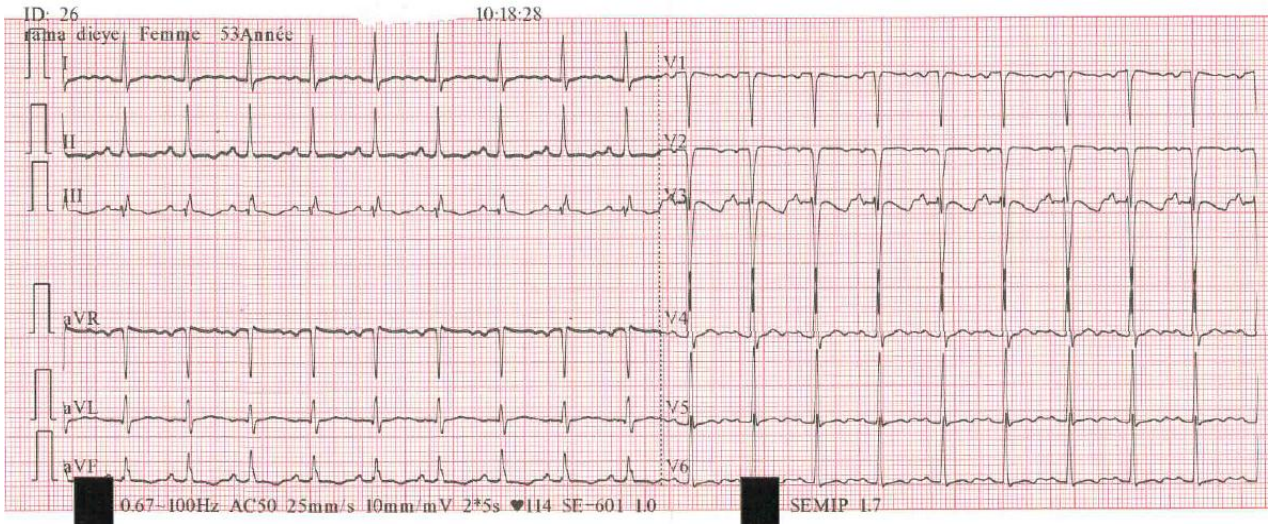

Figure 2: Sinus rhythm after pharmacological cardioversion (Amiodarone)

The maintenance dose was one Cordarone tablet per day. As for acute edema of the lung, she received 80 mg of Furosemide and was put in a half-sitting position. The immediate evolution is favorable. On the fifth day of hospitalization, the index had necrosis requiring disarticulation of the second phalanx. The patient has evolved well on the clinical and paraclinical level with a resumption of feeding and mobilization by physiotherapy. At day 15 of hospitalization, she presented diarrhea and dermatosis associated with adynamy and ischemia of the right foot, requiring the realization of a retroviral serology returned positive to HIV1 but also of an echo-doppler showing an absence of flow at Pedal level. She was put under strong Bactrim 2 tablets twice daily and anticoagulation based on Enoxaparin 0.6UI. She also benefited from an amputation of the foot that was necrotic. At D18 after amelioration of diarrhea, she was transferred to the infectious disease department for further treatment.

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Discussion

Severe sepsis is a sepsis that has provoked visceral failure or tissue hypoperfusion. It is defined as hypotension, elevated lactate or oliguria associated with infection. The appearance of fibrillation on severe sepsis is therefore a very poor prognosis.[2,3] These disorders of the rhythm are more and more frequent in the severe sepsis making obscure the prognosis with risks of thromboembolic accidents, cardiomyopathies and heart failure.[4] Some risk factors have been incriminated in their occurrence, in particular, age between 60-70 years, male sex[5] and these are unfortunately absent in our patient. Albrecht found no risk factors in 30% of cases.[4] The particular field (HIV 1) of our patient would be a factor to incriminate in the severity of the infection. However, there are several aspects to management, including vascular filling and antibiotic therapy. Hypotension lower than the values set by the recommendations is a priority in the management. Early quantitative resuscitation (vascular filling) allowed the first six hours to approach these recommendations from initial resuscitation of severe sepsis: PAM ≥ 65 mmHg and diuresis ≥ 0.5 ml/kg.[2,3] The dosage of lactates not available would have helped us to monitor the effectiveness of the treatment. In the etiological research, only pulmonary X-rays were made. Recommendations for blood cultures were not made due to lack of Microbiology.[3] The administration of effective antimicrobial agents intravenously within the first hour after diagnosis was the objective of our treatment.[6] This antibiotic therapy included several drugs that are effective against all possible pathogens entering the tissues supposed to be the source of sepsis in sufficient concentrations. Empirical therapy is often used for neutropenic patients with severe sepsis and for patients in whom bacterial pathogens are difficult to treat and provide multi-drug resistance such as Acinetobacter and Pseudomonas.[3] Longer treatments may be appropriate for patients with slow clinical responses, bacteremia, fungal and viral infections, or immunologic deficiencies. In our case, the patient benefited from 14 days of antibiotic therapy. The antiviral treatment to be administered as soon as possible in patients with severe sepsis has not been achieved by the lack of field exploration. Amiodarone has demonstrated its efficacy in the management of atrial fibrillation with a relapse rate of 30% low compared to other drugs of pharmacological cardioversion.[4] It is the only drug that can be given urgently to severely affected patients and is, therefore, the drug of choice in patients with structural heart disease.[7] Its use is frequent in the work of Yoshida (73%)[8] unlike the work of James[9] where they used Digoxin. At present, there is no precise data demonstrating the superiority of one attitude in relation to the other.[10,11,12] The early use of Cordarone with a return to sinus rhythm allowed us not to use beta-blockers or to consider an electrical cardioversion as in some studies.[8, 9] Yoshida found a mortality of 69% in a series of 66 patients. The anticoagulation was not done because of thrombocytopenia. The risk of stroke versus hemorrhagic risk was then weighed.[13,14] An approach based on assessing these risks has led to recommendations from major international cardiology companies where patients under 60 years of age and with isolated atrial fibrillation with no history of heart disease may not be at risk of bleeding Anticoagulants.[13,14] However, the compression stockings would be very well indicated in this case to avoid very frequent peripheral thromboses.

Conclusion

Severe sepsis and atrial fibrillation constitute a couple causing a high morbidity and mortality especially when they occur on an immunodepressive field. The search for optimal treatment of severe sepsis and fibrillation is a dynamic process in constant evolution. Care must be multidisciplinary. The search for risk factors and the history is an unavoidable step.

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