Title

Diabetic Keto acidosis as a deceiving presentation to bilateral endocarditis

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Introduction

DKA is characterized by hyperglycemia, acidemia, bicarbonate, anion gap and ketonemia, and its occurance is 14% of diabetics for patiengs greater than 70 years of age. [1,2] Infection remains a common cause for DKA, though its association with endocarditis is rare[3-6]. The incidence of infective endocarditis (IE) ranges between 1.5 to 11.6 per 100 000 [7], prosthetic valve endocarditis occurs in 1-6% of patients and rarely is it bilateral, as this case is. [7-9]

Case Presentation

71 year old female with history of type 2 diabetes and hypertension presented to our ED for progressive weakness. ROS was positive for polydipsia, polyuria and daily fevers. Initial examination found her to be hypotensive, tachycardic and afebrile. Her laboratory analysis showed evidence for DKA, with blood sugars above 600, pH of 7.00, high anion gap, ketonemia and bicarbonate of 8 mEq/L, creatinine of 4.8 mg/dL and a leukocytosis of 14 K/uL

The patient was admitted to the medical ICU for management of DKA and hypovolemic shock. She was initiated on intravenous hydration and norepinephrine. As infection is often an etiology of DKA, blood cultures were drawn that grew streptococcus mitis two days later. This organism has a known association with infective endocarditis and transthoracic cardiac echocardiogram was performed, which was unremarkable. However given the high degree of suspicion, a trans esophageal cardiac echocardiogram was ordered and it revealed the presence of vegetation over the tricuspid and bioprosthetic aortic valve, thus establishing a diagnosis of bilateral endocarditis

Following this the cardiothoracic surgical team was consulted and the decision was made to not surgically intervene as her condition was improving swiftly with

intravenous antimicrobial agents. Prior to discharge a repeat TEE showed reduction in size of the vegetations. She was subsequently discharged after 2 weeks to complete a 6 week course of ceftriaxone.

Discussion

The unique feature of our case was the presence of bilateral vegetations. Our literature review revealed only one such case; where there was involvement of the tricuspid and aortic valves in the presence of a VSD. [9, 11]

Streptococcus mitis, is commonly implicated in bacterial endocarditis and is part of the oral flora [12,13]; our patient was bactermic from this organism without recent dental work. Strept. Mitis often causes more aggressive endocarditis [14], which in our patient's case was bilateral vegetations. A negative TTE should not exclude the diagnosis of IE in high risk cases as sensitivity of this test is 50 to 60% hence our resort to TEE [15]

Current guidelines do not address bilateral endocarditis [16]. Our case lends suport that following established medical practices for IE and DKA can be succesful for treatment in patients with bilateral endocarditis.

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