

Know your patients' history; spleno-renal infarction as a presentation of infective endocarditis

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Abstract

Bacterial endocarditis is an infection of the endothelial surface of the heart, including heart valves and is potentially life threatening. Antibiotic prophylaxis is indicated prior to invasive procedures in patients with certain high-risk cardiac conditions and thorough history needs to be elicited prior to performing such procedures. Herein, we present a case of spleno-renal infarction secondary to septic emboli in a 42-year-old patient with prosthetic aortic valve who underwent a dental procedure without endocarditis prophylaxis.

Case Report

A 42-year-old white man with a history of chronic back pain and intravenous drug abuse in the past has presented with intermittent fevers for a week and bilateral flank pain for 2 days. He did not measure his temperature at home and denied having any vomiting, diarrhea, dysuria or hematuria. He did have some nausea. He had a bioprosthetic aortic valve placed 1 year prior to presentation for infective endocarditis associated valvular dysfunction and he stayed away from recreational drugs since then. He was seen by a dentist 2 weeks ago for toothache and underwent extraction of multiple teeth. His vitals were stable except for a temperature of 101°F. Physical examination was significant for a systolic murmur with maximum intensity in the aortic area and tenderness in bilateral flanks. Labs demonstrated white blood cell count of 14 thou/mm³, hemoglobin of 11 g/dL, platelet count of 160 thou/mm³ and serum creatinine of 1.1 mg/dL. Serum lactate dehydrogenase was elevated at 684 IU/L. Urinalysis was significant for microscopic hematuria with 24 red blood cells/hpf. A computed tomography (CT) scan of the abdomen with contrast was obtained to rule out any acute intra-abdominal pathology, which demonstrated areas of non-enhancement involving

more than 50% of the right kidney predominantly involving the lower pole and also most of the spleen consistent with renal and splenic infarction (Figure 1A). Interestingly, the patient was noted to have an accessory right renal artery providing flow to the upper part and probably accounts for relative sparing of this portion of the kidney (Figure 1B).

Subsequently, patient's blood cultures grew *Streptococcus mitis* and *Streptococcus oralis*, which are common bacteria inhabiting human mouth. Also, trans-esophageal echocardiogram showed features suggestive of infective endocarditis of the prosthetic aortic valve with vegetations, which supports the diagnosis of renal and splenic infarction from septic emboli. The patient improved with antibiotic therapy and renal function remained relatively stable.

Discussion

Bacterial endocarditis is a potentially life-threatening infection of the endothelial surface of the heart, including valves. It usually occurs in patients who develop bacteremia and have underlying structural cardiac defects such as endothelial damage or

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Key words: Renal infarction; splenic infarction; endocarditis; prophylaxis.

Contributions: AK has drafted the manuscript; ML procured the images; VC has reviewed the manuscript for critical intellectual content.

Conflicts of interest: the authors declare no potential conflicts of interest.

Patient consent: obtained.

Received for publication: 25 February 2017.
Revision received: 15 September 2017.
Accepted for publication: 11 October 2017.

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Clinics and Practice 2017; 7:961
doi:10.4081/cp.2017.961

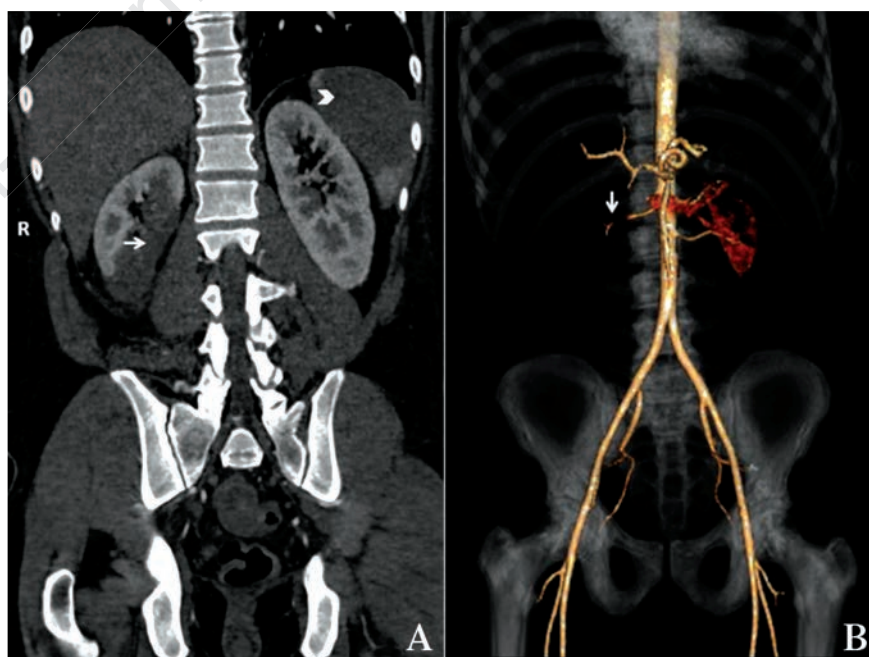


Figure 1. A) Computed tomographic (CT) scan of the abdomen with contrast showing areas of non-enhancement involving more than 50% of the right kidney predominantly involving the lower pole (arrow) and also most of the spleen (chevron) consistent with infarction; B) 3D reconstructed CT angiogram showing occluded renal artery (arrow) and an accessory renal artery above that supplying spared portion of the kidney.

prosthetic heart valves. Bacteremia can occur spontaneously by organisms introduced through activities such as food chewing and tooth brushing, or secondary to surgical and dental procedures involving mucosal surfaces or contaminated tissue. In addition, the risk of endocarditis is higher with some cardiac conditions than with others and antibiotic prophylaxis is indicated for use in patient population in whom endocardial infection would be most likely lead to severe morbidity or mortality.¹ According to the current guidelines, antibiotics before dental procedures are recommended for patients who have a prosthetic heart valve or who have had a heart valve repaired with prosthetic material, a history of endocarditis, a heart transplant with abnormal heart valve function and certain congenital heart defects such as cyanotic congenital heart disease that has not been fully repaired. Recommended regimen is oral amoxicillin 2 grams administered as a single dose administered 30-60 min prior to the procedure. Cephalosporins, clindamycin and azithromycin are reasonable alternatives in

those with penicillin allergy.²

On the other hand, endocarditis prophylaxis is not recommended for those with low-risk cardiac conditions such as surgical repair of atrial septal defect, ventricular septal defect or patent ductus arteriosus, previous coronary artery bypass grafting, mitral valve prolapse without regurgitation, functional heart murmur, history of rheumatic fever without valvular dysfunction.³

Conclusions

The learning point from our case is that thorough history taking before invasive procedures might prevent potentially life-threatening complications. Our patient had prosthetic valve and prior history of endocarditis, and appropriate antibiotic prophylaxis prior to the dental procedure could have evaded the complications he developed.

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