SCIENTIFIC LETTER

INFECTIVE ENDOCARDITIS CAUSED BY TOOTHPICK LODGED IN THE RIGHT VENTRICLE

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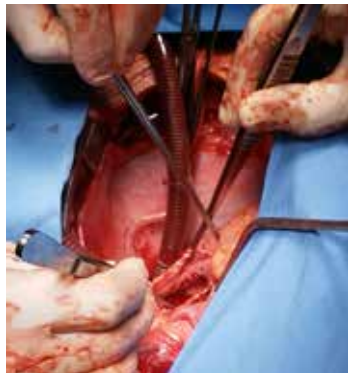
The ingestion of foreign bodies is a common cause of lesions in the gastrointestinal tract. Toothpicks and chicken and fish bones are sharp objects that may also damage other organs, migrate to other areas of the organism or generate an inflammatory mass in the intestinal tract. Papers reported 8,176 lesions by toothpicks in the United States from 1979 to 1982 occurring in 3.6 every 100,000 people a year. In all these cases, diagnosis was difficult and generally reached during the surgical procedure, and the patient usually does not remember having swallowed the toothpick. A rare case was reported of infective endocarditis by ingestion of a toothpick and migration to the right ventricle.

A 42-year-old male with a history of gastrointestinal bleeding at age 15 was admitted to the Emergency Room of the hospital on May 20, 2015 with 3-month febrile syndrome associated with a weight loss of 6 kg - 8 kg. He explained that he had consulted multiple institutions with different diagnoses and thus had received empiric antibiotic treatment without any improvement and with intermittent afebrile periods. He said that a few days earlier he had been admitted with an episode of hemoptysis to a hospital of Corrientes, where serology tests were performed for HIV, VDRL and hepatitis with negative results. Due to the persistence of symptoms, he returned to the hospital. PPD and HMC tests were performed isolating Pseudomona; he began treatment with meropenem+amikacin for 6 weeks. An echocardiography revealed a mass of 1.7 cm x 2.1 cm in RV, which was interpreted as thrombus or vegetations in the context of right-sided endocarditis. A new control echocardiography was performed after 27 days of antibiotic treatment, without evidence of the mass. An angio-CT evidenced septic embolism in the pulmonary parenchyma.

He completed an antibiotic treatment and was discharged from the hospital on July 7.

On July 31, he consulted the Infectology Service again due to a 48-hour febrile episode. Given his medical history, he was admitted to



the hospital. New HMC tests were performed and he was treated with meropenem+amikacin+colistin for a week. Upon admission, he was performed a new echocardiography evidencing a ragged hyperechogenic image of 2.30 cm x 1.7 cm at the vertex of the lateral leaflet of the tricuspid and the RV free wall, suggesting vegetation. Upon completion of ATB treatment, he was controlled by echocardiography revealing no mass. The patient was discharged from the hospital on August 11.

Ten days later, he returned to the hospital after having experienced 2 fever episodes of 39° C associated with a pyrogenic fever the day before. He was received by the infectious disease specialist of the Emergency Room, who admitted him to the hospital with a diagnosis of infective endocarditis. A new HMC test was performed and he was treated again with meropenem+amikacin+colistin.

A new control echocardiography performed on August 19 showed no differences in relation to the previous one. During hospital stay, multiple studies were conducted including ECG scan, scintigraphy, PET scan, and serial transthoracic and transesophageal echocardiographies, one of them revealing inside the right cavities a linear image of greater refringence with position and direction similar to the septomarginal trabecula going through the tricuspid ring and inside the atrium. Its morphology looked like a catheter. This echocardiography allowed to reach the diagnosis of infective endocarditis by a foreign body in the right ventricle. The patient continued with intravenous antibiotic treatment, and developing leukopenia and acute renal failure as a result of antibiotics. The antibiotic was adjusted for the renal function and changed to piperacilin-tazobactam.

A multidisciplinary medical panel agreed on the removal of the foreign body upon stabilization of the renal function.

First, there was an attempt to remove the echocardiographically detected foreign body endovascularly through the right internal jugular vein with a laparoscopy clip and ultrasound control (since it was radiopaque). As it was not possible to move it because it was firmly attached, it was decided to perform a median sternotomy with bicaval and aortic cannulation. He was connected to an extracorporeal circulation system, without developing cardiac arrest, and, by right auriculectomy, it was possible to see the object attached to the septum between the atrium and the ventricle and to determine that it was a whole toothpick. The patient tolerated the procedure, was extubated in the operating room and taken to the Coronary Unit without inotropic requirement. He evolved satisfactorily, received 3-week antibiotic treatment and was discharged from the hospital.

On 6-month follow-up, the patient is asymptomatic with full recovery after the procedure. When asked, he does not remember having ingested the toothpick. We suspect that the toothpick migrated through the thoracic esophagus, either through the atria or through the cava veins. We base on this assumption since the concentration of bacteria is quite larger in the infradiaphragmatic digestive tube and peritoneal innervation is more sensitive, and the patient mentioned that he never had painful digestive symptomatology and that the febrile syndrome symptoms began 4 months after ingestion. In addition, since the toothpick had its 2 tips intact, we suspect that the object made the perforation, caused the dilation, and its other sharp tip caused tissue closure.

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