

NON-BACTERIAL THROMBOTIC ENDOCARDITIS REVEALED BY PULMONARY EMBOLISM IN A PATIENT WITH A PANCREATIC CANCER

ENDOCARDITE THROMBOTIQUE NON BACTERIENNE REVELEE PAR UNE EMBOLIE CHEZ UNE PATIENTE AYANT UN CANCER DU PANCREAS

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Abstract

We herein report a case of a 66-year-old woman with a pancreatic cancer hospitalized for pulmonary embolism. Trans-thoracic echocardiogram (TTE) revealed mobile vegetation attached to the tricuspid valve. There were no stigmata of infective endocarditis. The diagnosis of non-bacterial thrombotic endocarditis was established and the patient was treated with low molecular weight heparin. Two weeks later, TTE and computed tomography showed a total disappearance of the vegetation.

Key words: pancreatic cancer; pulmonary embolism; nonbacterial thrombotic endocarditis

Résumé

Nous rapportons le cas d'une femme âgée de 66 ans avec un cancer du pancréas qui a été hospitalisée pour une embolie pulmonaire. L'échocardiographie trans-thoracique (ETT) a révélée une végétation mobile attachée à la valve tricuspide. Il n'y avait aucun stigmat d'endocardite infectieuse. Le diagnostic d'endocardite thrombotique non-bactérienne a été établi et la patiente a été traitée par de l'héparine à bas poids moléculaire. Deux semaines plus tard, l'ETT et le scanner thoracique ont montré une disparition totale de la végétation.

Mots clés : cancer du pancréas ; embolie pulmonaire ; endocardite thrombotique non bactérienne

ملخص

نقدم تقريرا عن حالة امرأة عمرها 66 سنة تعاني من سرطان المعثكلة و التي وقع إيوائها بالمستشفى لحصول انسداد رئوي . كشف تخطيط صدى القلب عبر الصدر وجود الغطاء النباتي المحمول تعلق على صمام ثلاثي الشرف . لم توجد أي علامة لالتهاب الشعاف الجرثومي. تم تأسيس تشخيص التهاب الشعاف الخثاري غير الجرثومي و عولج المريض بواسطة مصادات التخثر من نوع "الهيبارين" ذات انخفاض الوزن الجزيئي. بعد أسبوعين، أظهر الفحص بالصدى الصدري و الأشعة المقطعية اختفاء كامل للغطاء النباتي.

الكلمات المفاتيح: سرطان المعثكلة ; الانسداد الرئوي ; التهاب الشعاف الخثاري اللاجرثومي

BACKGROUND

Marantic endocarditis, known as non bacterial thrombotic endocarditis (NBTE), consists in a rare state of hypercoagulability that is associated with a variety of inflammatory manifestations including malignancy [1].

CASE PRESENTATION

We report a case of a 66-year old woman with a pancreatic cancer, hospitalized in the cardiology department for clinical suspicion of pulmonary embolism. The diagnosis was confirmed by the computed tomography (CT) that shows, by the way, liver metastasis with a thrombosis of portal vein, massive pulmonary embolism. Trans-thoracic ultrasound revealed an exuberant friable mass attached to the atrial surface of the tricuspid valve (figure 1 and 2). The vegetation prolapsed in the pulmonary artery (figure 3). Further evaluation for bacterial endocarditis was negative, including multiple sterile blood cultures. Her neutrophil count was negative and C-reactive protein was slightly high. Procalcitonine was negative. The diagnosis of marantic endocarditis was established and the patient was treated with low molecular weight heparin. Two weeks later, transthoracic ultrasound showed a total disappearance of the vegetation. The CT confirmed the absence of the vegetation. When last seen at his follow-up consultation 3 months after discharge, the patient was well.

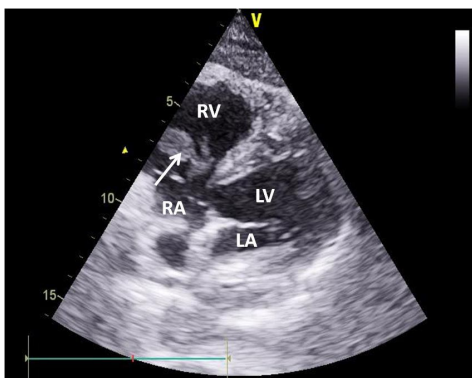


Figure 1: Trans-thoracic ultrasound revealed an exuberant mass (arrow) attached to the tricuspid valve

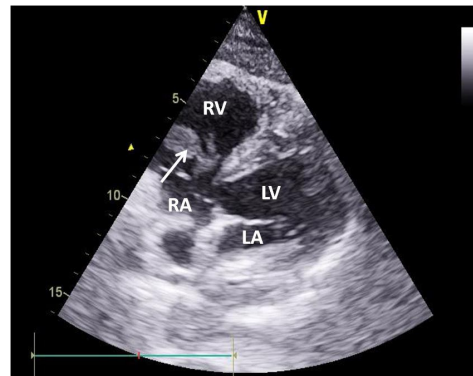


Figure 2: The apical four cavity view showing the vegetation (arrow) in the right ventricle.

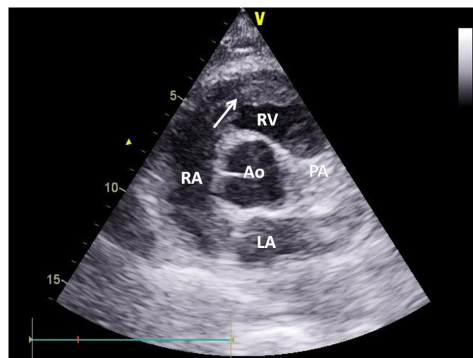


Figure 3: The parasternal short-axis view showing the vegetation (arrow) prolapsed in the pulmonary artery

DISCUSSION

NBTE was first reported in 1888 by Zeigler [2], who introduced “ thrombo-endocarditis” as a term describing deposition of fibrin on cardiac valves. In marantic endocarditis, the vegetations consisted in degenerating and agglutinated platelets inter weaved with strands of fibrin in the absence of bacterial infection in the bloodstream. The size of masses varies from microscopic to large and exuberant with a manifested tendency to detach, leading to an extensive infarction that is more frequently observed than the vegetations in infective endocarditis. The most commonly affected valves are the mitral valve, the aortic valve, and a combination of both of them. While less common, the involvement of the right-sided heart valves was also reported. Vegetations typically occur at the coapting edge of the leaflets and in general do not alter or impede valve function [3].

NBTE has been documented in patients with advanced stage malignancy, either at solid or haematological states. In a prospective echocardiography study of 200 non-selected patients with solid tumours, NBTE was noted in 19% compared to 2% in the control group. Among NBTE cases associated with malignancy, the most frequent underlying disease was lung cancer. Although cases of pancreatic cancer, stomach cancer, breast cancer, and ovarian cancer have also been reported. NBTE can also complicate other chronic diseases such as acquired immune deficiency syndrome, autoimmune disorders, tuberculosis, uraemia, connective tissue disorders, and hypercoagulable states [3].

The pathogenesis of NBTE is poorly understood. Nevertheless, several clues to the etiology of NBTE can be gleaned from the results of previous pathological studies in humans and animal models. The lesions of NBTE are classically found in areas of high flow on valvular leaflets; therefore, blood flow likely contributes to the location, if not the initiation of these valvular lesions [1]. On the other hand, elevated levels of circulating cytokines associated with cancers, such as tumor necrosis factor or interleukin-1 may also result in local tissue damage that instigates vegetation formation. Perhaps the most crucial factor in the formation of valvular vegetations is the hypercoagulable state associated with malignancy [4].

In the absence of contraindication, these patients should be anticoagulated with heparin although there are no prospective randomised studies to support this strategy. Lee et al, in a study of cancer patients with recurrent venous thromboembolism, compared low molecular weight heparin (LMWH) and oral anticoagulation. They found patients on LMWH to have less recurrent venous thromboembolism, and the probability of having a recurrent thromboembolism at 6 months to be reduced compared to oral anticoagulation [5]. There are no guidelines for surgical intervention in patients with NBTE. If the patient is in acute congestive cardiac failure (due to valvular dysfunction) or occurrence of

recurrent thromboembolism, despite therapeutic anticoagulation, then surgical intervention is warranted, provided the comorbid conditions and complications does not make the prospect of recovery remote.

NBTE has increasingly been recognized, over the years, as a prothrombotic serious source of thrombo-embolism [6].

Systemic emboli occur in nearly 50% of cases and potentially result in the presenting symptom, with coronary, cerebral, renal, pulmonary, and mesenteric circulations being frequently affected. Sudden neurological deficit was the most common clinical presentation, and certainly most devastating one [4]. Although hypercoagulability was often seen in patients with pancreatic cancer; surprisingly, marantic endocarditis has rarely been described ante-mortem in this population

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