



CHIRURGIE CARDIAQUE / CARDIAC SURGERY

CONSTRICTIVE PERICARDITIS MIMICKING RESTRICTIVE CARDIOMYOPATHY IN AN ADULT, A CASE REPORT.

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Summary

Heart diastolic dysfunctions are dominated by two categories of etiologies: constrictive pericarditis and restrictive cardiomyopathy. Constrictive pericarditis clinical diagnosis may be difficult to establish; therefore, Doppler tissue imaging can be useful. We report a case of constrictive pericarditis in an adult living in Sub-Saharan Africa who has been treated successfully via surgery.

Keywords: Constrictive pericarditis, restrictive cardiomyopathy, adult.

Résumé

Les dysfonctions diastoliques sont dominées par deux types d'affections: les péricardites constrictives et les myocardiopathies restrictives. Cliniquement, le diagnostic différentiel peut s'avérer difficile à établir ; d'où l'intérêt du Doppler tissulaire permettant de le faciliter ; de plus, dans certaines situations, le scanner thoracique, ou l'imagerie par résonance magnétique nucléaire peuvent être nécessaires. Nous rapportons le cas d'une péricardite constrictive chez un adulte, traitée chirurgicalement avec succès.

Mots clés : Péricardite constrictive, myocardiopathie restrictive, adulte.

Introduction

Constrictive pericarditis is a clinical feature characterized by an impaired cardiac diastolic function. Usually, it is difficult to make a distinction between a restrictive cardiomyopathy and a constrictive pericarditis. Since last decade, Doppler tissue imaging, especially the E' determination may clearly distinguish constrictive pericarditis from restrictive cardiomyopathy^[1, 2]. We report a case of constrictive pericarditis mimicking restrictive cardiomyopathy in an adult patient who has been successfully treated by a pericardiectomy.

Case report

A 48-year-old man, who lived in Republic of Congo (Central Africa), was admitted to our unit for a right heart failure. He has a medical history of recurrent right heart failure in the past. He has been treated by Diuretics, vitamin K antagonist. He has no medical history of tuberculosis. Clinical examination revealed blood pressure at 128/80 mmHg, irregular heart rhythm, with mean cardiac rate at 89 bpm. Peripheral signs of right heart failure, spontaneous internal jugular veins dilatation, edema, and hepatomegaly were present. There was no cardiac murmur. Recent biological data were normal. Electrocardiogram, revealed an atrial fibrillation. Transthoracic echocardiography showed: bi atrial dilatation, inferior vena cava dilatation, and a small left ventricle, the ratio E/A of mitral valve was up to 1.5 with a short deceleration time, and preserved ejection fraction.

(figure 1a). Chest computed tomography (figure 1b) and resonance magnetic imaging revealed veritable pericardium thickness and calcifications (figure 1c). After written consent, the patient is fully monitored in order to evaluate the hemodynamic impact of the pericardiectomy intraoperatively. We performed a median sternotomy, realized pericardiectomy from phrenic nerve to phrenic nerve (figure 2a), without cardiopulmonary bypass. Central venous pressure decreased from 24 to 11 mmHg. We have been totally liberated the heart, and restore its normal relaxation (figure 2b). Pathology revealed a pericardial fibrosis. No inotropic drugs were used in intensive care unit. Postoperative period was uneventful and the patient was discharged after six days of hospital stay.

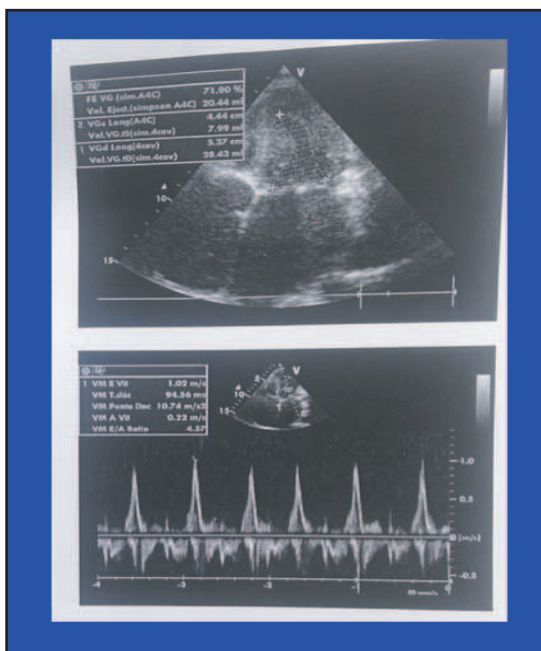


Figure 1a: Mitral Doppler echocardiogram
Restrictive filling (E/A>1.5) and short deceleration

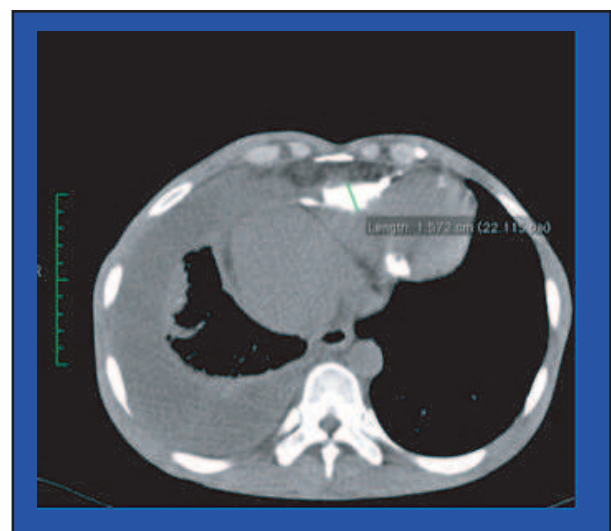


Figure 1b: Chest computed tomography, axial view:
Calcifications in atrioventricular groove.

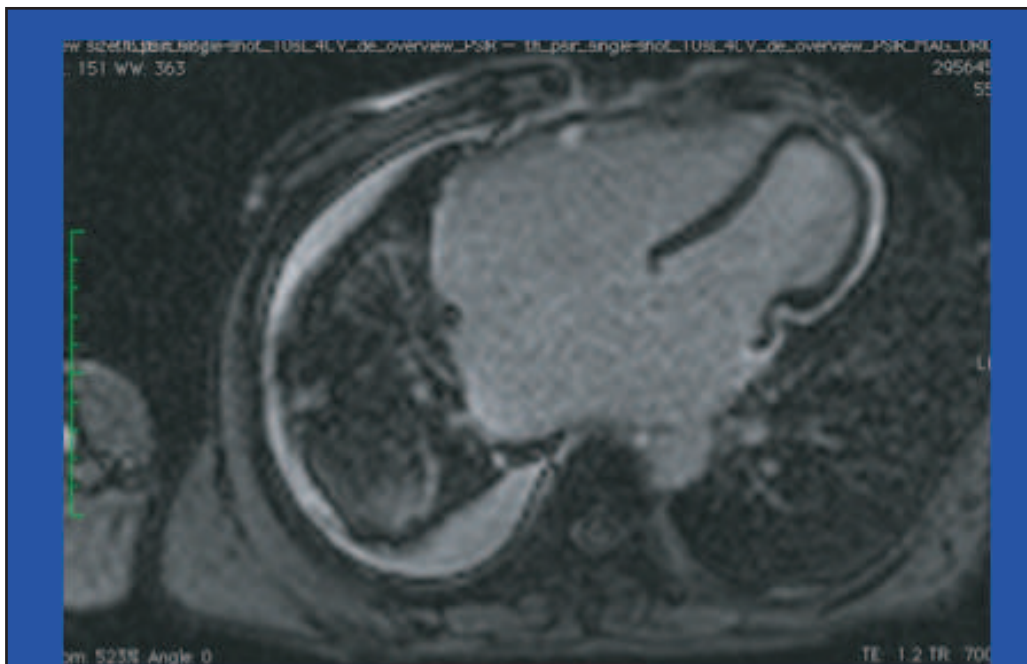


Figure 1c: Resonance magnetic imaging, after gadolinium injection:
Pericardial thickness and calcifications of the left ventricle.

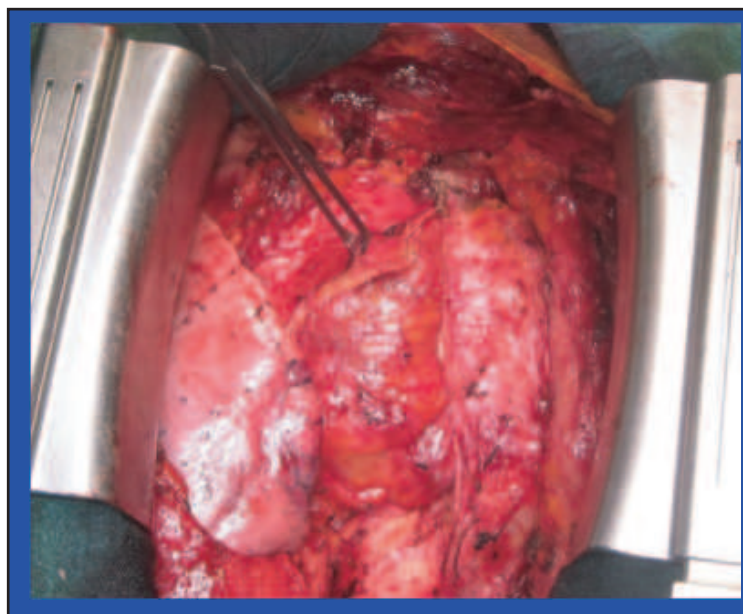


Figure 2a: Intraoperative view:
Anterior mediastinal dissection.

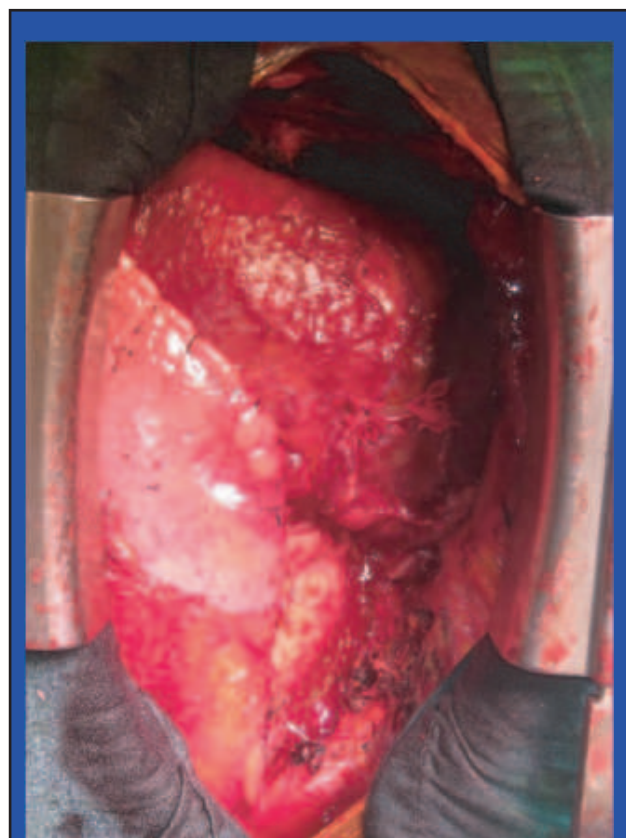


Figure 2b: Intraoperative view:
better diastolic relaxation of the heart after
removal of the fibrotic parietal pericardium.

Discussion

Anomalies of diastolic cardiac function assemble constrictive pericarditis and restrictive cardiomyopathy. Clinical features of these entities are often similar, dominated by right heart failure. Doppler tissue imaging has brought a distinctive sign: the “E’wave”, which may clearly distinguish constrictive pericarditis to restrictive cardiomyopathy⁽¹⁻³⁾. E’ wave is normal or accelerated in constrictive pericarditis, but decelerated in restrictive cardiomyopathy.

The greatest problem in developing countries is the lack of complementary data as E’ wave in Doppler tissue imaging. Despite, the elevation of E/A mitral valve, short deceleration time in continuous wave Doppler; the key data scientifically accepted for differentiation between constrictive pericarditis and restrictive cardiomyopathy is the E’wave of Doppler tissue imaging. Generally, our surgical patients are at NYHA stage III-IV, with sometimes, hepatic and renal dysfunction.

Tuberculosis in developing countries represents most often the first aetiology of constrictive pericarditis while in developed countries, post cardiectomy and post radiotherapy represent the first etiologies⁽⁴⁾. The long delay before surgery may be explained by the lack of imaging data in our context.

Most surgical teams in the world perform pericardiectomy through a median sternotomy without cardiopulmonary bypass⁽⁵⁾. Median sternotomy provides a good heart access with the possibility of a total pericardiectomy and an entire heart relaxation. Median sternotomy offers better access than left postero-lateral thoracotomy. Access to right heart cavities may be difficult through left postero-lateral thoracotomy making a complete pericardiectomy uneasy to achieve.

Generally, cardiopulmonary bypass is used in the case of constrictive pericarditis with an uncontrolled haemorrhage, or in case of an intracardiac anomaly which requires total correction.

Conclusion

Constrictive pericarditis is one of the most frequent etiology of cardiac diastolic dysfunction. Challenge for praticers in developing countries, is the lack of complementary Doppler tissue imaging data, which can establish a differentiation between constrictive pericarditis and restrictive cardiomyopathy; constrictive pericarditis may be successfully treated by pericardiectomy.

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