Clinical features, management and outcome of patients with constrictive pericarditis – Experience from a third world country

Fateh Ali Tipoo Sultan [a,*], Muhammad Umer Tariq [b]

[a] Aga Khan University Hospital, Karachi
[b] Medstar Georgetown University

[a]Pakistan
[b]USA

Objectives: To study the clinical features, management and outcome of patients with constrictive pericarditis, at a tertiary care hospital of Pakistan.

Design: Descriptive study.

Material & method: All consecutive patients with the final diagnosis of constrictive pericarditis, admitted at Aga Khan University Hospital Karachi, during the year 2005 to 2015 were included in the study.

Results: A total of 21 patients were diagnosed and managed as constrictive pericarditis during the above mentioned period. Mean age was 39 + 19.9 years. There was a male preponderance with a male to female ratio of 2.5:1.The most common clinical features were those of right heart failure. Only 2 (9.5%) patients showed pericardial calcification on X-ray chest. Dilated atria and septal bounce were the most common echo features present in 15 (71.4%). MRI/CT was done in only 11 patients, of which eight showed increased pericardial thickness. Three had normal pericardial thickness on MRI/CT but were proved to have constriction surgically. Cardiac catheterization was done in nine patients only. Elevated filling pressures and square root sign were the most common findings, present in all (100%). Pericardiectomy was performed in 12 (57%) patients. Five more patients were advised surgery but two died before the surgery and three were taken to other hospitals as they wanted to explore other options beside surgery. Pericardial tissue histopathology was available in only 11 patients. It revealed tuberculosis in three cases, while in 8 cases it was nonspecific. Six patients died with an overall mortality of 28.6%. Five patients died during hospitalization, four without surgery and one after the surgery. One patient died during follow up (was considered unfit for the surgery). Mean follow up duration was 7.3 + 9.3 months. No death occurred on follow up in surgically treated patients.

Conclusion: Features of right heart failure is the most common mode of presentation of CP. The most probable etiology in this part of the world is tuberculosis, although difficult to prove on histopathology. Pericardiectomy is the usual recommended treatment due to advanced disease at the time of presentation.

Keywords: Constrictive pericarditis, Pericardiectomy, Right heart failure

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* Corresponding author at: Cardiology section, Department of Medicine, Aga Khan University Hospital, Stadium Road, Karachi, Pakistan.
E-mail addresses: tipoo90@hotmail.com (F.A.T. Sultan), ut2087@gmail.com (M.U. Tariq).

P.O. Box 2925 Riyadh – 11461KSA
Tel: +966 1 2520088 ext 40151
Fax: +966 1 2520718
Email: sha@sha.org.sa
URL: www.sha.org.sa

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Abbreviations

CP	Constrictive pericarditis
TB	Tuberculosis
ICU	Intensive care unit
JVP	Jugular venous pressure
TDI	Tissue Doppler imaging
NYHA	New York Heart Association

Introduction

Constrictive pericarditis (CP) is defined as impedance to diastolic filling caused by a fibrotic pericardium [1]. In the past, tuberculosis (TB) was a very common etiology; however, due to control of this disease in the developed world, other causes such as prior cardiac surgery, radiation therapy, and idiopathic pericarditis have risen in importance [2–4].

The symptoms of the disease are a direct consequence of right sided heart failure. Diagnosis is usually difficult and multiple imaging modalities are used for making the diagnosis.

The treatment of CP can be divided in to medical and surgical treatments. Medical management applied generally is the administration of diuretics and supportive therapy for underlying conditions. In patients with transient CP, anti-inflammatory agents or steroids are indicated [5]. The surgical option is of pericardiectomy, which is the definitive treatment [6].

In countries such as Pakistan, the diagnosis of CP is usually delayed and results in poor outcomes. Literature from Pakistan does not exist on constrictive pericarditis. Considering that TB is still a great burden of disease in this part of the world, it is important to note the incidence of CP, its etiology, patterns of presentation and management options in Pakistan.

Therefore, we designed the study to analyze the clinical features, management and outcome of patients with constrictive pericarditis, at a tertiary care hospital of Pakistan.

Materials and methods

Medical records of all the patients admitted with the diagnosis of constrictive pericarditis, at Aga Khan University Hospital, Karachi, from January 2005 to December 2015 were reviewed. Only patients with the final diagnosis of CP were included. Aga Khan University Hospital is a 650-bedded, tertiary care hospital in a big city of Pakistan, giving admissions to all kinds of patients. It has a high referral rate of cardiac patients from all over the country. A predesigned questionnaire was used for data collection. Follow-up data were collected from the medical records. Analysis was done with SPSS software (nineteen, SPSS Inc., Chicago, IL, USA).

Results

A total of 21 patients were diagnosed and managed as CP during the 11-year period (2005–2015) at Aga Khan University Hospital. Clinical characteristics are shown in Table 1. Mean age was 39 ± 19.9 years. There was a male preponderance with a male to female ratio of 2.5:1. Past history of TB was present in eight patients (38%) while history of cardiac surgery was present in four patients (19%). The most common clinical features were those of right heart failure. Pulsus paradoxus was present in only six patients (28.6%) and pericardial knock in four patients (19%).

The most common electrocardiography findings were nonspecific ST-T changes present in 13 patients (61.9%) and atrial fibrillation in six patients (28.6%). Chest radiography revealed pleural effusion in 17 patients (81%), while pericardial calcification was present in only two patients (9.5%).

Echocardiogram performed for all patients. Table 2 shows the findings on echocardiogram. Dilated atria and septal bounce were the most common echo features present in 15 patients (71.4%) followed by increased E to A ratio in 13 patients (61.9%).

Magnetic resonance imaging/computed tomography was performed in only 11 patients, of whom eight showed increased pericardial thickness.

Table 1. Clinical characteristics.

Clinical characteristics	Number of patients (21)	Percentage
Age (±standard deviation)	39 ± 19.9	—
Males	15	71.4%
History of tuberculosis	8	38%
Prior cardiac surgery	4	19%
History of pericarditis	3	14%
Shortness of breath	15	71.4%
Chest pain	6	28.6%
Pedal edema	13	61.9%
Ascites	14	66.7%
Raised jugular venous pressure	21	100%
Palpable liver	13	61.9%
Pulsus paradoxus	6	28.6%
Pericardial knock	4	19%

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