

PERICARDECTOMIES AT SHARIATI HOSPITAL: A RETROSPECTIVE STUDY

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Abstract - Pericardectomy was first accomplished in Germany in 1913. It is obligatory when a pathologic condition in the pericardium increases pressure on the heart. The most common disease that causes this process is constrictive pericarditis. Tuberculosis was formerly the most common cause of the latter. A retrospective review of pericardectomy for constrictive pericarditis was undertaken in Shariati hospital. Forty patients (21 male, and 19 female) were operated on during a period of 8 years. Dyspnea, chest pain and fatigue were the most common symptoms. The etiology was not clear in 17 cases. Diagnosis of tuberculosis was confirmed in 10 patients. Chronic renal failure and diabetes mellitus were two important causes of comorbidity. After pericardectomy, 31 patients recovered without any complications, and 3 patients died. One patient developed heart failure, one patient pneumothorax and in 4 patients arrhythmias were encountered.

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trauma, cardiac surgery, and connective tissue disorders are incriminated (2,3). Previously, TB was the most common cause of constrictive pericarditis but today, it is responsible for only 20% of the cases reported from developed countries(5). The diagnosis of constrictive pericarditis is difficult but some clues such as hepatomegaly, high JVP, edema and ascites may exist(4). Definite treatment of constrictive pericarditis is surgery, but the diagnosis must be confirmed by cardiac catheterization, prior to surgery.

INTRODUCTION

Pericardectomy is necessary when a pathologic process in the pericardium increases the pressure on the heart and disturbs the hemodynamics (1). Partial pericardectomy was first performed by Rehn and Sauerbruch in Germany in 1913. Complete pericardectomy was finally advocated for the treatment of constrictive pericarditis by Holman in 1949. However, some relate this operation to Galen (3).

The most common pericardial disease which exerts pathologic pressure on the heart's chambers is constrictive pericarditis (3). Pericardial cysts and tumors are the other causes of this condition.

Constrictive pericarditis may follow any reactive process in the pericardium. Acute pericarditis with effusion and fibrin deposition is usually seen in the beginning (4). The cause of constrictive pericarditis is usually unknown but tuberculosis (TB), radiation to mediastinum,

MATERIALS AND METHODS

A retrospective review was undertaken in our department from May 1990 to March 1997. All the patients who had undergone pericardectomy were included in this study (n=40). Two patients had pericardial cysts, and in others, the diagnosis of constrictive pericarditis had been confirmed by means of catheterization. These patients were evaluated for etiology, signs/symptoms and comorbidity.

RESULTS

From a total number of 40 patients, 21 were male and 19 female (Table 1). The most common age group was 25-34 years (n=10, 25%, Table 2). Sixteen patients (40%) presented with dyspnea (Table 3). The other chief complaints included chest pain, fatigue, edema, faintness, icterus (Table 3). Dyspnea was also the most common symptom (n=25) followed by chest pain (n=11) and fatigue (n=9) (Table 4).

In physical examination, 19 patients had high JVP (47.5%), 15 patients had ascites (37.5%) and 12 patients had lower limb edema (30%, Table 5). Other findings included pericardial knock, friction rub, cyanosis, hepatomegaly and even gynecomastia in one case. Diagnostic cardiac catheterization demonstrated equalization of left and right sided end diastolic pressure in 30 patients (80%). Except for the 2 cases with pericardial cysts, no etiology could be found in 17 patients with constrictive pericarditis. Ten patients had documented TB. Other causes included cardiac surgery (n=8), uremia (n=2) and systemic lupus erythematosus (SLE) in one case (Table 2). Three patients died after the operation

Table 1

Sex	n	%
Male	21	52.5
Female	19	47.5
Total	40	100

Table 2

Age (y)	n	%
0-10	3	7.5
10-19	3	7.5
20-29	8	20
30-39	9	22.5
40-49	5	12.5
50-59	6	15
60-69	4	10
≥70	2	5

Table 3

Chief Complaint	n	%
Dyspnea	16	40
Fatigue	4	10
Chest Pain	5	12.5
Edema generalized	3	7.5
Abdominal swelling	2	5

(7.5%). The arrhythmias seen after operation included atrial flutter (n=1), atrial fibrillation (n=2) and bradycardia (n=1). One patient developed heart failure and another one developed pneumothorax. Important causes of

comorbidity included diabetes mellitus (n=4), chronic renal failure (n=5), valvular disease (n=6), and ischemic heart diseases (n=2).

The blood groups of the patients were also studied. (Table 6)

Table 4

Signs	n	%
Unidentified	11	24.5
High JVP	19	47.5
Hepatomegaly	5	12.5
Rales	4	10
Pericardial knock	6	15
Ascites	15	37.5
Gynecomastia	1	2.5
Lower limb edema	12	30
Cyanosis	2	5

Table 5

Symptoms	n	%
Palpitation	11	27.5
Dyspnea	25	62.5
Fatigue	9	22.5
Abdominal swelling	6	15
Orthopnea	5	12.5
Cough	3	7.5
Cachexia	3	7.5

Table 6

Blood group	n	%	Normal/Percent
O	14	35	47
A	13	32.5	41
B	12	20	9
AB	1	2.5	3
Unknown	4	10	--
Total	40	100	100

Table 7

Etiology	n	%
Unknown	17	42.5
TB	10	25
P.C.S	8	20
Cyst	2	5
Uremia	2	5
SLE	1	2.5
Total	40	100

DISCUSSION

Although none of our patients were treated exclusively by medical management, judging from their histories we guess that without surgery, they would have developed gradual debilitation. This progression may develop within a few months or over several years (2). Although some complications like arrhythmia, heart failure and even death may occur after operation, but surgery is always indicated (3). From the etiological point of view, our paper reveals that in Iran, most cases of constrictive pericarditis have an unknown etiology, followed by TB as the second cause (Table 7). In another study, TB was considered the most common cause of constrictive pericarditis (3). Because T.B is endemic in our country, a prophylactic regimen is recommended before operation. In our study, this regimen was employed for one week preceding the operation and proved beneficial. In this review, male cases were more than females and usually comprising young adults 25-35. The chief complaints of our patients were in accordance with some studies (4,6) but different from others (2). Although it has been indicated that the incidence of constrictive pericarditis after cardiac surgery is low (1,3), but in our survey, 8 patients (20%) had a history of cardiac surgery. Study of the blood groups did not reveal any significant points (4). Mortality following this operation was 7.5%, that is within the range reported by other investigators (2). Valvular disease was a common cause of comorbidity in our study. We must therefore select an approach of pericardectomy that renders additional operations or even bypass possible. Our review indicates that pericardectomy has its risks, but it is the only definite treatment of constrictive pericarditis.

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