Surgery for Chronic Pericarditis

— Thirty-years' Experience —

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During the past 3 decades, surgical treatment was performed on 75 cases with chronic exsudative or constrictive pericarditis, except for cases suffered from malignant tumor or trauma. Among 7 cases with chronic exsudative pericarditis, 5 underwent pericardiectomy and 2 had a fenestration of the pericardium. As for constrictive pericarditis, pericardiectomy was performed on 68 cases. Excellent surgical results were obtained. The ages of the cases with constrictive pericarditis, who underwent surgery, were significantly higher in the last decade, and the occurrence of pericardial tuberculosis significantly decreased in the last 2 decades. Although pericardiectomy has been performed for constrictive pericarditis without exception, it also plays an important role in the treatment of chronic exsudative pericarditis, especially for cholesterol or tuberculous pericarditis.

PERICARDIECTOMY is one of the important surgical procedures for chronic exsudative or constrictive pericarditis. Seventy-five cases with chronic exsudative or constrictive pericarditis were treated surgically at the University of Tokyo Hospital during the past 3 decades from April, 1952 to March, 1982, except for cases suffering from malignant tumor or trauma. They were 7 cases with chronic exsudative pericarditis and 68 with constrictive pericarditis.

Chronic Exsudative Pericarditis

In 7 cases with chronic exsudative pericarditis, there were 2 cholesterol pericarditis, one tuberculous pericarditis, one radiation pericarditis, and 3 of unknown origin. There were no cases with uremic or purulent pericarditis. The patients' age at the time of surgery ranged from 24 to 67 in 3

males and from 44 to 66 in 4 females. Surgical treatment was performed on medically intractable cases. Five cases underwent pericardiectomy and 2 fenestration of the pericardium. Although 2 cases succumbed in their early postoperative stage, the remainings became well in their late postoperative stage. Changes on the chest X-ray films in a case with cholesterol pericarditis are shown in Fig. 1.

Constrictive Pericarditis

During the past 3 decades pericardiectomy was performed on 68 cases with constrictive pericarditis. The patients' age at the time of surgery ranged from 6 to 61 (average age, 30.5) in 50 males, and from 15 to 47 (average age, 33.8) in 18 females. Chronologically, patients underwent surgery at a significantly earlier age in the first decade as compared with the last decade (Table I). Details of the preoperative findings, surgical procedures and results of most of these cases have been reported previously.¹

Surgical results are summarized in Table II. Surgical death in the early postoperative stage

Key Words:

Chronic exsudative pericarditis
Constrictive pericarditis
Cholesterol pericarditis
Pericardiectomy
Pericardial tuberculosis

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(A)

(B)

(C)

Fig.1. Changes on the chest X-ray films in a 48-year-old female with cholesterol pericarditis.

(A) before surgery; (B) partial pneumopericardium after pericardiocentesis (before surgery); (C) 3 months after surgery.

TABLE I PATIENTS' AGE AT THE TIME OF SURGERY

Decades	I	II	III
	April, 1952 March, 1962	April, 1962 March, 1972	April, 1972 March, 1982
Number of cases	34	21	13
Age at surgery (years)	27.8 ± 10.7	33.0 ± 11.5	38.0 ± 13.5

$p < 0.02$ (between I and III)

TABLE II RESULTS OF SURGERY

NYHA*	Total series (April, 1952-March, 1982)			A more recent series (April, 1966-March, 1982)		
	No. of cases	Early death	Late death	No. of cases	Early death	Late death
II	18	1 (6%)	1 (6%)	6	0	0
III	33	8 (24%)	4 (12%)	11	1 (9%)	0
IV	17	3 (18%)	3 (18%)	7	0	3 (43%)
Total	68	12 (18%)	8 (12%)	24	1 (4%)	3 (13%)

*Preoperative functional capacity according to the classification of the New York Heart Association

TABLE III INCIDENCE OF PERICARDIAL TUBERCULOSIS

	April, 1952 March, 1962	April, 1962 March, 1982	Chi-square
No. of cases	28*	34	
Pericardial tuberculosis	7 (25%)	1 (3%)	$p < 0.02$

*Excised pericardium was not studied in 6 cases.

occurred in 12 cases (18%) through the entire series, but it occurred in only one of the 24 cases (4%) who underwent surgery during the period between April, 1966 and March, 1982. Fifty-five surgical survivors were followed up for a maximum of 30 years (average 13.7 years). Among the cases who underwent surgery between April, 1966 and March, 1982, death in the later stage occurred only in the cases who showed class IV functional capacity preoperatively (Table II). In more than one half of the cases functional capacity was improved to class I after surgery. One patient required a 2nd operation due to the recurrence of symptoms 14 years after the first operation, and a satisfactory state has continued for 16 years after the 2nd operation. Late deaths occurred in 8 cases from 2 months to 13 years after surgery. Causes of death were infection in 2 cases, congestive heart failure in 2, a malignant tumor of the digestive organ in one, respiratory insufficiency in one and unknown in 2.

COMMENTS

Pericardiectomy performed for chronic exudative and constrictive pericarditis for the past 30 years has shown excellent results in both short- and long-term follow up studies. As for the etiology of the constrictive pericarditis, pathological studies revealed tuberculous changes in 8 cases. The excised pericardium was studied histologically in 27 out of 33 cases, who underwent surgery between 1952 and 1962, and pericardial tuberculosis was ascertained in 7 cases (26%). On the contrary, it was ascertained in only one out of 35 cases during the period between 1962 and 1982, showing a significant difference as compared with the incidence in the period between 1952 and 1962 ($p < 0.02$, Table III).

REFERENCES

1. MIZUNO A: Surgical treatment for chronic constrictive pericarditis. *Jpn Circ J* 42: 185, 1978