

활동성 심내막염 환자에서 판막륜 및 판막간 섬유체 재건의 외과적 수술 경험

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Surgical Experience of Reconstruction of the Annular and the Intervallular Fibrous Skeleton for Active Infective Endocarditis

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ABSTRACT

Background and Objectives : The treatment for active infective endocarditis (IE) with a paravalvular abscess results in a high morbidity and mortality. Recently, some good results with a reconstruction of the annulus or fibrous skeleton in active IE have been published. However, there are few papers on this subject reported in Korea. **Subjects and Methods :** The hospital records of 29 patients who had undergone surgery for active IE with a paravalvular abscess from Mar. 1995 to Jun. 2002 were retrospectively reviewed. The mean age was 43.8 ± 16.9 (range : 13 -69) years. The NYHA functional class was either III or IV in 11 cases (37.9%) and prosthetic valve endocarditis was present in 8 cases (27.6%). The mean duration of preoperative antibiotic treatment was 13.3 ± 11.9 days. **Results :** The aortic annulus was reconstructed in 7 patients, an aortic annulus + the aorto-mitral continuity was done in 8 cases, an aortic annulus + mitral annulus + aorto-mitral continuity was done in 1 case, and a mitral annulus was done in 13 cases. There was one (3.4%) early death due to a non-cardiac cause. The postoperative complications were as follows : additional surgery due to bleeding in 3 cases (10.3%), mediastinitis in 1 case (3.4%), a complete atrioventricular block in 1 case (3.4%), and a cerebral hemorrhage in 2 cases (6.9%) who had had a history of cerebral embolism. All patients (100%) were followed up with a mean follow-up duration of 22.0 ± 19.2 months. There was 1 late death (3.6%) and 2 additional procedures including one recurrence. **Conclusion :** Reconstruction of the annulus and intervalvular fibrous skeleton in these patients showed a relatively low morbidity and mortality, and recurrence rate. Therefore, it is recommended that these patients be treated aggressively. (**Korean Circulation J 2002;32(11):996-1003**)

KEY WORDS : Endocarditis ; Abscess ; Heart valves ; Surgery.

서 론

16 35%,

49~68%

1-4)

5)6)

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환 자

1995 3 2002 6

(Duke)

12)

4가

1) (4)

2)

3) 3

4)

29

가 18 (62.1%), 가 11 (37.9%) ,

43.8±16.9 (: 13~69) , NYHA

가 11 (37.9%) .

21 (72.4%),

8 (27.6%) ,

6 (20.7%) 4

(13.8%)

4 (13.8%),

13 (44.8%) ,

11 ,

1 , 1

대상 및 방법

가 2 ,

1 , (glomerulonephritis) 1 ,

가 1 , 1 (Table 1).

(emergent)

(urgent)

11) 13.3±11.9 ,

3 8 (27.6%) .

(median) 5 , 3

가 13 (44.8%) (Fig. 1).

Table 1. Characteristics of the patients

Variables	N = 29
Age	43.8±16.9
Range	13 - 69
Male : Female	18 : 11
NVE : PVE	21 : 8
Previous treatment	6 (4)*
NYHA Fc	
I or II : III or IV	18 : 11
Neurologic deficit	13
Peripheral embolization	4
Comorbidity	
Diabetes	2
ARF	1
Glomerulonephritis	1
Liver cirrhosis	1
Behet disease	1

ARF : acute renal failure, CRF : chronic renal failure, NVE : native valve endocarditis, NYHA Fc : New York Heart Association functional class, PVE : prosthetic valve endocarditis. * : the number of patients who had undergone operation for infective endocarditis previously

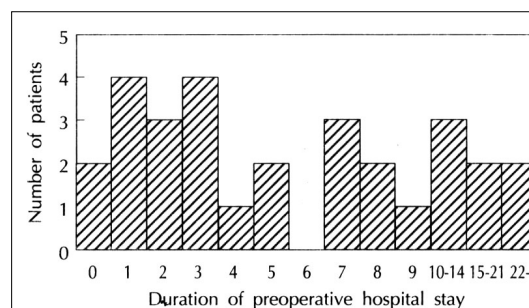


Fig. 1. Duration of preoperative hospital stay.

수술 적응증

(vegetation) 11 ,
9 , 가 가 7 ,
10 mm 3 ,
(prosthesis instability) 2 ,
2 , 1 (Table 2).

감염 균주

10 (34.5%),
7 (24.1%)
2 (6.9%) , 1 (3.4%),
1 (3.4%), 4 (13.8%) , 가
6 (20.7%) (Fig. 2).

수술 방법

(cold blood
cardioplegia)

(Supple Peri - Guard pericardium, Bio -

Table 2. Indications for surgery except paravalvular abscess

Indications	
Vegetation with embolization	11
On-going congestive heart failure	9
Uncontrolled infection	7
Large vegetation without embolization	3
Prosthesis instability	2
Recurrent infection	2
Fungal infection	1

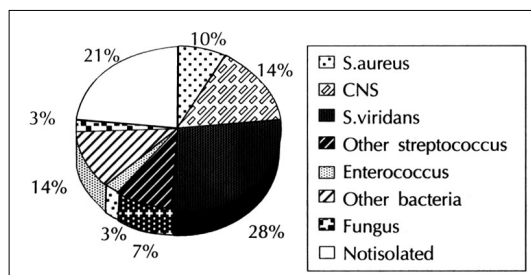


Fig. 2. Isolated organisms. CNS : coagulase-negative staphylococcus.

Vascular inc., St. Paul, MN) 가

4 6

자료 분석

결 과

수술 방법

7 (24.1%),
(27.6%),
1 (3.4%), 13 (44.8%)
(Fig. 3). (patch)
23 (79.3%), 3 (10.3%),
가 2 (6.9%)
(Table 3).
5
16 , 19 ,
2 , 1 ,
2 5 3 2 ,
가 (valved
conduit) 20 (69.0%) ,
가 7 (24.1%), 가 3
(10.3%)
(Table 4).

조기 사망

1 (3.4%) . Child cl-

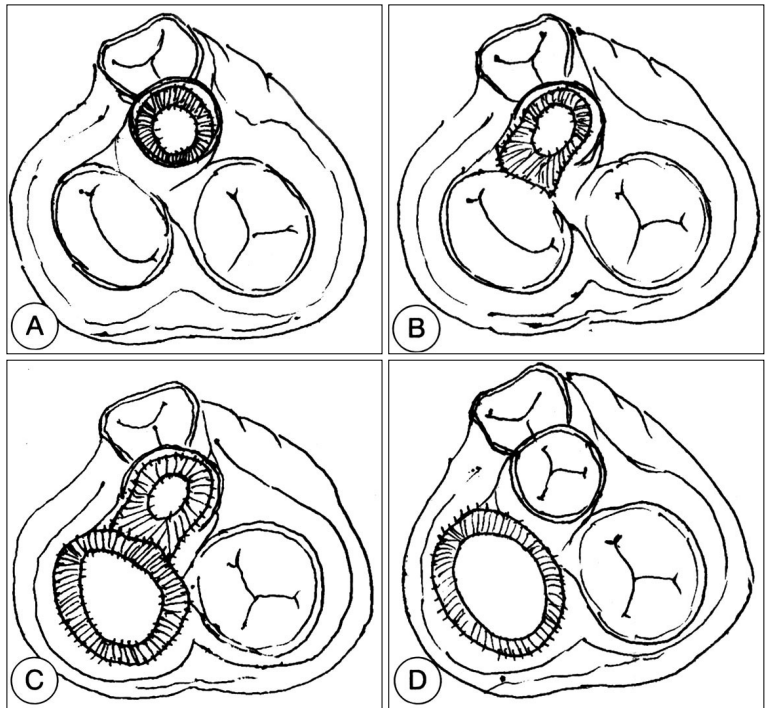


Fig. 3. Sites of annular reconstruction. A : aortic annulus (n = 7), B : aortic annulus and aorto-mitral continuity (n = 8), C : aortic annulus, aorto-mitral continuity and mitral annulus (n = 1) and D : mitral annulus (n = 13).

Table 3. Reconstruction of annular and intervalvular fibrous skeleton

N = 29	
Sites	
AA	7
AA + AMC	7
AA + AMC + LA roof	1
AA + MA + AMC + LA roof	1
MA	13
Whole	2
Posterior	10
Anterior	1
Materials	
Bovine pericardium	23
Autologous pericardium	3
Bovine + Autologous pericardium	2
None	1

AA : aortic annulus, AMC : aorto-mitral continuity, LA roof : left atrial roof, MA : mitral annulus

3	
14	
수술 합병증	
3 (10.3%),	
1 (3.4%),	가 1 (3.4%)
2 (6.9%)	
2 (6.9%)	
1	

ass B 52
6

재발 및 재수술
1 28 (100%)

Table 4. Type of operation and prosthesis

N = 29	
Operation	
AVR	5
AVR+MAP	2
AVR+MVR	4
Bentall	2 (1)*
Bentall+MVR	2 (1)*
Bentall+TVR	1
MVR	13 (5)*
Prosthesis	
Mechanical	18
Mechanical+Valved conduit	1
Valved conduit	1
Tissue	6
Homograft	2
Homograft+Tissue	1

AVR : aortic valve replacement, Bentall : Bentall operation, MAP : mitral annuloplasty, MVR : mitral valve replacement, TVR : tricuspid valve replacement. * : the number of patients who had undergone valve operation previously

10)15-17) 28)

가 , 가

1 , , 2~3 가

가 , Ergin 21) 가

40% Middlemost 22) 가 가

203 2 , 가 가

가 29 1 28)30)

1 가

가

가 (autograft) 가

23)가 24)

25) 가 - 가 가

26) 배경 및 목적 :

가

가 가

27) 방 법 :

1995 3 2002 6 29 43.8

d Udekem 10) David 28)29)

가 ±16.9 (: 13~69) , NYHA

가 11 (37.9%) ,

8 (27.6%) .

13.3 ± 11.9 .

결 과 :

7 , + - 8 ,

+ + - 1 ,

13 .

21 (72.4%), 6 (20.7%),

3 (10.3%) .

1 (3.4%) ,

3 (10.3%), 1 (3.4%),

가 1 (3.4%) ,

2 (6.9%)

1 (100%)

22.0

± 19.2 , 1 (3.6%) ,

1 2 (7.1%) .

결 론 :

중심 단어 : ; ; .

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