

임상 증상이 심하지 않은 심낭 삼출 환자의 장기 추적 결과

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Long-term Follow-Up Results of the Patients with
Clinically Inapparent Pericardial Effusion

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ABSTRACT

Background : Pericardiocentesis is not routinely recommended in most patients with pericardial effusion (PE), except for patients with cardiac tamponade. However, the long-term follow-up results in patients with clinically not significant PE are few. **Methods :** Sixty-five consecutive patients (mean age ; 57 yrs, 26 males) out of 87 patients with PE, who were clinically not serious, were studied prospectively once in every two month for mean 6 months (2 -12 months) without any specific treatment. The amount of PE was measured at the enddiastole period of parasternal long axis view and apical four chamber view. **Results :** The incidence of insignificant PE in our echocardiographic laboratory is 3.4% (n = 87 from 2461). The maximal accumulation site of PE was posterior (n = 51, 79%). The next is anterior (n = 11, 17%) and right ventricular side (3, 5%). The amount of PE is less (0.37 ± 0.17 cm vs 0.64 ± 0.54 cm, $p = 0.018$) in localized PE (n = 24, 37%) than that of diffuse form (n = 41, 63%), which spreads to more than 2 chambers. The presumptive etiologies of PE were unknown (n = 41), heart failure (n = 5), myocardial infarction (n = 6), viral (n = 3), and others (n = 10). The amount of PE was decreased from 0.54 ± 0.46 cm to 0.30 ± 0.26 cm, 0.23 ± 0.24 cm, and 0.21 ± 0.23 cm 2, 4, and 6 months after initial evaluation, respectively, without any complication. **Conclusion :** The patients with PE, not combining with cardiac tamponade, can be followed by regular echocardiographic examination without any specific treatment. (Korean Circulation J 1999; 29(7):712-721)

KEY WORDS : Pericardial effusion · Treatment · Echocardiography.

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: , 700 - 712

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서 론

102 (4%)

8 15%

15 (0.6%)

87 (3.4%)

가 .¹⁾²⁾ Miralda³⁾ 59 ± 14 ($\pm$)

가 32

231

1

(37%), 가 55 (63%)

11

, 7

, 4

가 76 (33%)

1

20%

, 1

2

65 가

57

 ± 13 ($\pm$)

가 26 (40%),

.⁴⁾

가

가 39 (60%)

가

방 법

, ,

VingMed CFM 800

가

.⁴⁾

, 2.25 MHz

(parasternal long

axis view)

(apical four chamber

view)

,

M - mode 50 mm/s

가

가

Horowitz⁵⁾

대상 및 방법

Horowitz⁵⁾

D

대 상

가 0.1

cm

M - mode

가

1997 6

1997 12

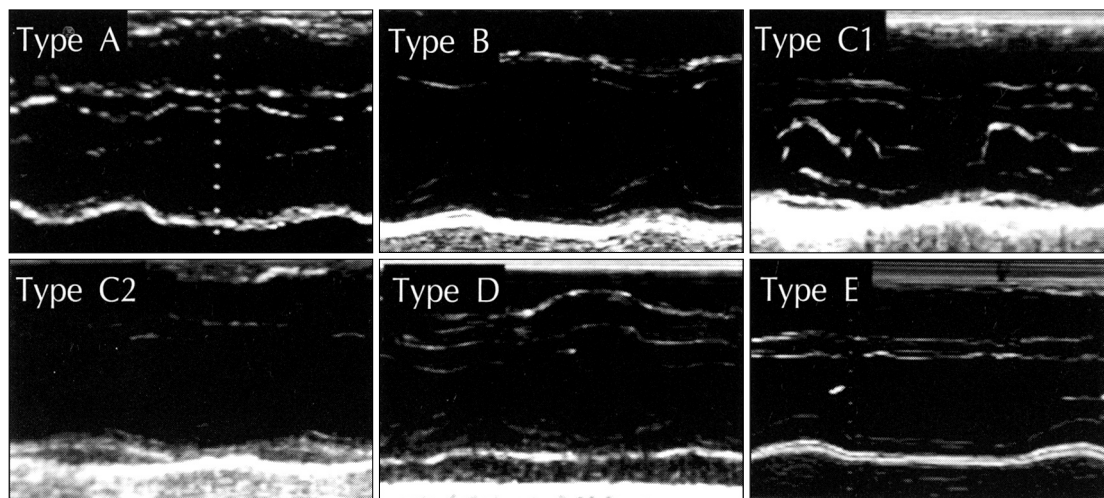


Fig. 1. Pattern of the pericardial effusion by Dr.Horowitz.

A , 2 ,

B ,

가 C1 ,

C2 ,

가

D ,

65

41 (63%)

E , C2 D

(Fig. 1).

2

M - mode

가

2

0.1 cm

M - mode 가

가

가

2

, 1

가 , , , , ,

통계 처리

±

SPSS 7.5

ANOVA

paired t - test

결 과

임상 특성

87
59 ± 14, (55 ± 14, 63%)가
9 (10%)
QRS 가 7 mm
(low voltage tendency) 11 (13%)
(cardiothoracic
ratio)가 0.5 39 (45%)

Table 1. Clinical characteristics of the study patients

	Total patients	F/U patients
Nynber	n = 87	n = 65
Age (yr)	59 ± 14	57 ± 13
Sex (male)	32 (37%)	26 (40%)
Rhythm		
NSR	78 (90%)	58 (89%)
AF	9 (10%)	7 (11%)
Low voltage tendency	11 (13%)	8 (12%)
CT ratio	0.53 ± 0.07	0.53 ± 0.07
CTR > 0.50	39 (45%)	28 (43%)

NSR : normal sinus rhythm, AF : atrial fibrillation
CTR : cardiothoracic ratio

Table 2. Underlying disease of the study patients

	Total patients (n = 87)	F/U patients (n = 65)
None	18 (21%)	15 (23%)
Hypertension	14 (16%)	11 (17%)
Angina	11 (13%)	9 (14%)
Acute myocardial infarction	8 (9%)	6 (9%)
Valvular heart disease	6 (7%)	5 (8%)
Arrhythmia	8 (9%)	3 (5%)
Rheumatic heart disease	5 (6%)	1 (2%)
Duabetes	2 (2%)	2 (3%)
Malignancy	4 (4%)	3 (5%)
Stroke	2 (2%)	2 (3%)
Rheumatologic disease	2 (2%)	2 (3%)
Renal failure	2 (2%)	2 (3%)
S/P CV operation	3 (3%)	2 (3%)
Iatrogenic cushing syndrome	1 (1%)	1 (2%)
GERD	1 (1%)	1 (2%)

CV : cardiovascular
GERD : gastroesophageal reflux disease

65
(Table 1).

87

가 18 (21%) 가
14 (16%), 11 (13%),
8 (9%), 6 (7%),
8 (9%), 5 (6%)

(Table 2). 87

가 55 (63%) 가
가 7 (8%), 가 8 (9%),
가 4 (5%), 가
3 (3%), 3 (3%),
(Table 3).

심초음파도 소견

87
45%(39),
30%(26), 가
가 8%(7),
가 17%(15)

Table 3. Presumptive etiology of the pericardial effusion in study patients

	Total patients (n = 87)	F/U patients (n = 65)
Unknown	55 (63%)	41 (63%)
Myocardial infarction	8 (9%)	6 (9%)
Congestive heart failure	7 (8%)	5 (8%)
S/P Intervention	4 (5%)	2 (3%)
S/P CV operation	3 (3%)	2 (3%)
Viral	3 (3%)	3 (5%)
Malignancy	2 (2%)	1 (2%)
CRF	2 (2%)	2 (3%)
Rheumatologic disease	2 (2%)	2 (3%)
Pregnancy	1 (1%)	1 (2%)

CV : cardiovascular, CRF : chronic renal failure

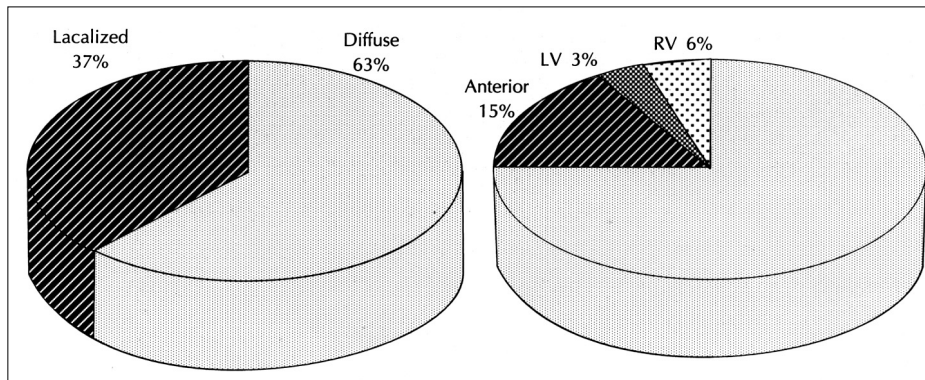


Fig. 2. The pattern and the maximally accumulated site of pericardial effusion in study patients (total numbers : 87. LV ; left ventricular side in the apical 4-chamber view, RV ; right ventricular side in the apical 4-chamber view, Anterior ; anterior to the right ventricular side in the parasternal long-axis view, Posterior ; posterior to the left ventricular side in the parasternal long-axis view).

Table 4. Echocardiographic findings of the study patients

	Total patients	F/U patients
EF (%)	69 ± 15	69 ± 15
FE < 55%	16 (18%)	13 (20%)
RVDd	2.13 ± 0.58	2.08 ± 0.53
LVDd	5.02 ± 0.76	5.09 ± 0.77
LVDs	3.31 ± 0.92	3.35 ± 0.92
IVS	0.98 ± 0.25	1.01 ± 0.25
LVPWd	0.96 ± 0.21	0.97 ± 0.21
Aorta	3.03 ± 0.50	3.04 ± 0.48
LAD	3.80 ± 0.65	3.77 ± 0.65
Diastolic dysfunction		
Relaxation abnormality	19 (22%)	16 (25%)
Pregnancy	1 (1%)	0 (0%)

EF : ejection fraction, RVDd : enddiastolic right ventricular dimension, LVDd/s : enddiastolic (endsystolic) left ventricular dimension, IVS : interventricular septum, LVPW : left ventricular posterior wall, LAD : left atrial dimension

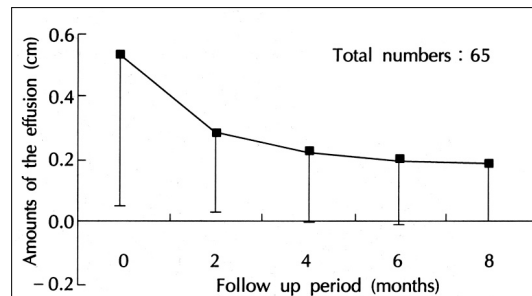


Fig. 3. Serial changes of the amounts of pericardial effusion in study patients.

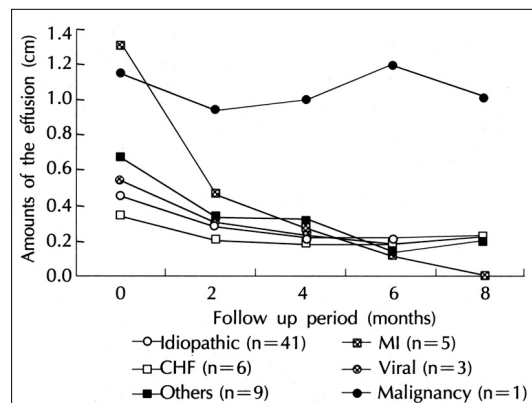


Fig. 4. Serial changes of the amounts of pericardial effusion according to the etiology of the effusion. MI : myocardial infarction, CHF : congestive heart failure, Others : S/P Intervention and cardiovascular operation, rheumatologic disease, and pregnancy.

87
37%(32), 63%(55)
가
가 76%(66),
가 15%(13), 가 6%(5
) , 가 3%(3) (Fig. 2).
0.54 ± 0.45 cm

가 22%(19
87 69 ± 15% , 가 1%(1)
55% 18%(16) (Table 4).

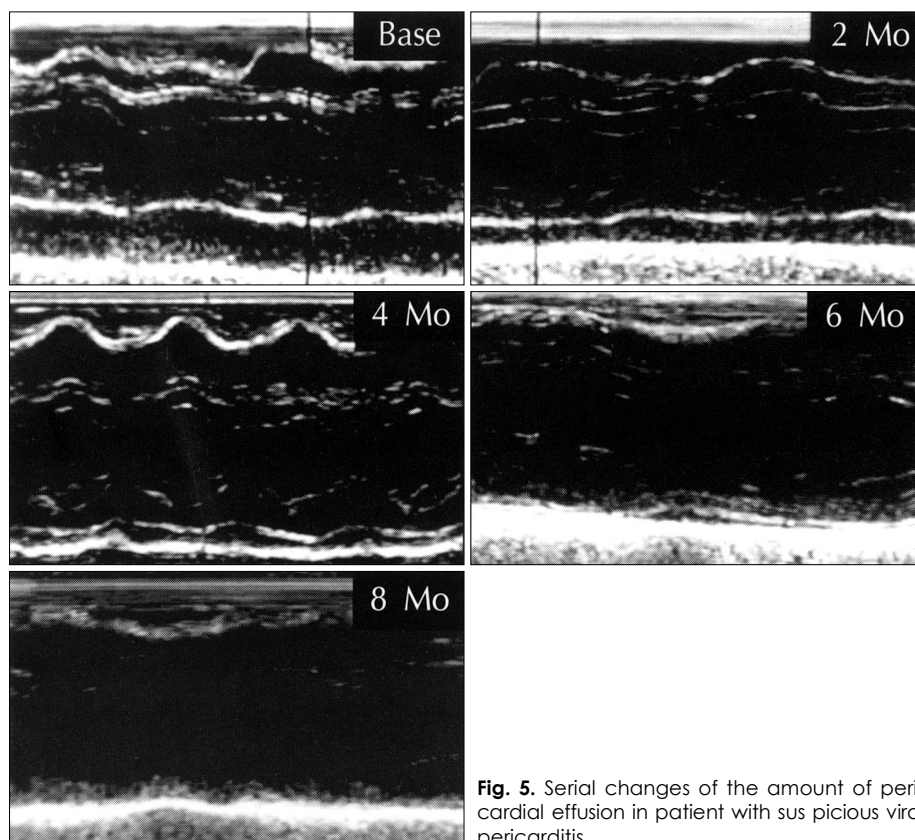


Fig. 5. Serial changes of the amount of pericardial effusion in patient with suspicious viral pericarditis.

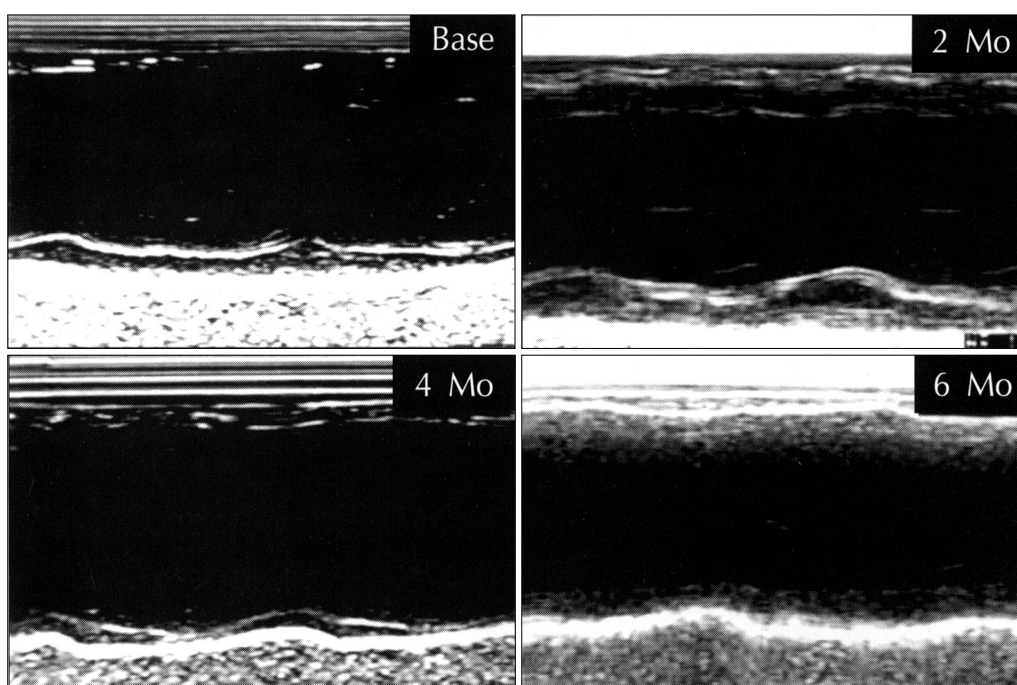


Fig. 6. Serial changes of the amount of pericardial effusion in patient with acute myocardial infarction.

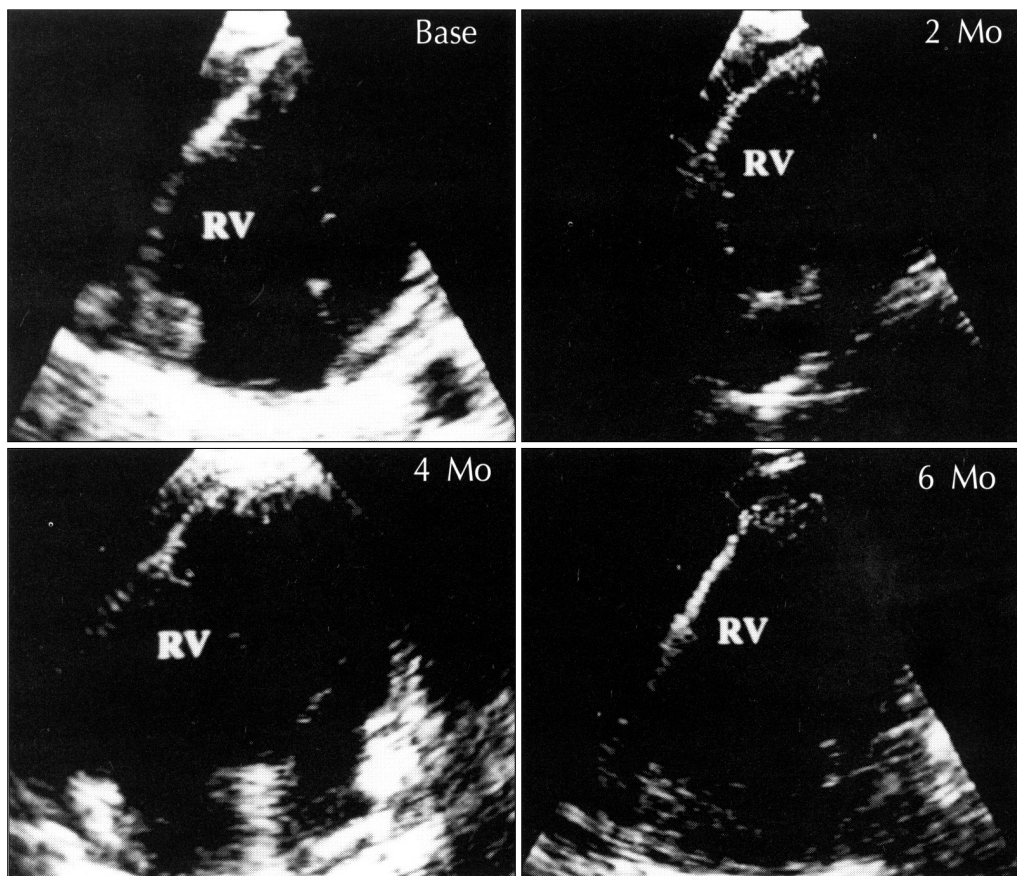


Fig. 7. Serial changes of the amount of pericardial effusion in patient with lung cancer, being treated with chemotherapy.

추적 심초음파도 소견

65
 6 ± 3 ($\pm$)
 1
 2, 4, 6, 8 가
 0.54 ± 0.46 cm,
 0.30 ± 0.26 cm, 0.23 ± 0.24 cm, 0.21 ± 0.23 cm,
 0.23 ± 0.23 cm (Fig. 3).
 (41, 63%) , 2, 4, 6
 가
 0.48 ± 0.34 cm, 0.28 ± 0.18 cm,
 0.20 ± 0.16 cm, 0.21 ± 0.17 cm .
 0.38 ± 0.08 cm, 0.21 ± 0.14 cm,
 0.17 ± 0.22 cm, 0.16 ± 0.19 cm ,
 0.70 ± 0.67 cm, 0.33 ± 0.33 cm, 0.31
 ± 0.47 cm, 0.13 ± 0.12 cm ,
 1.31 ± 1.25 cm, 0.44 ± 0.59 cm, $0.25 \pm$
 0.21 cm, 0.10 cm , 1.15
 cm, 0.95 cm, 1.01 cm, 1.20 cm ,
 (, , , , ,
) 0.47 ± 0.28 cm, 0.31 ± 0.35 cm, $0.20 \pm$
 0.08 cm, 0.15 ± 0.06 cm (Figs. 4 - 7).
 65
 , 2, 4, 6
 가
 0.37 ± 0.17 cm, 0.25 ± 0.17
 cm, 0.15 ± 0.07 cm, 0.10 ± 0.07 cm ,

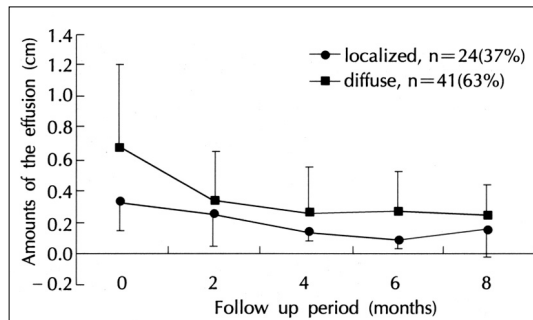


Fig. 8. Serial changes of the amounts of pericardial effusion according to the pattern of the effusion.

0.64 ± 0.54 cm, 0.33 ± 0.30 cm, 0.27 ± 0.28 cm, 0.28 ± 0.26 cm (Fig. 8).

(p=0.018)

고찰

2 (inner serious membrane) (mesothelial cell) (visceral pericardium) (fibrous outer layer) (collagen fibers) (elastic fibers) (parietal pericardium) (ultrafiltrate) (thoracic duct) (right pleural space) Elias⁶⁾ 20 60 ml(20 25 ml) , Horowitz⁵⁾ 16 ml 16 ml 가 Oh⁷⁾ 25 ml 가 (echo - free space)

mm⁴⁾ Horowitz C2 , D 0.1 cm 8 15% 3.4% 가 1)2) 가 Horowitz 1)2) 가 4) 1) 가 가 (63%), 37% 59 , 1 mm 가 1978 Berger²⁾ 171 32 (24%) 1984 Spodick⁸⁾ 24 가

10% Berger 3.4%

2)

2 6

가

가

가

4)

1

9) Sauleda 10)

9%

요 약

30

가 3

1986 Galve 11) 138

28%

10%

6

연구배경 :

대상 및 방법 :

65 1997 6 12

2563 102

15

2 87 (59 , 32)

가 4

6 (2 12) 2

가 6

가 1

결 과 :

87 11

, 7 가 , 4

2 8 65 가

6

9 (10%), 11 (13%)

가 39

(45%)

가 55 (64%), 8 (9%),

7 (8%), 4 (5%), 3

4% (3%), 3 (3%)

가

1 . , 2, 4, 6,
8 가
0.54±0.46 cm, 0.30±
0.26 cm, 0.23±0.24 cm, 0.21±0.23 cm, 0.23±
0.23 cm 65

2
4 가 6

결 론 :

가

2

4

중심 단어 :

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