

### Manometric Investigation of Anorectal Dysfunction in Patients with Progressive Systemic Sclerosis

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**Purpose :** The aim of this study was to investigate the  
rectal function in patients with progressive systemic  
(PSS), thus to define the clinical role of anorectal m  
in the earlier diagnosis of anorectal involvement

**Methods :** Seventeen consecutive patients (all female  
PSS) were evaluated with anorectal manometry by the st  
nary pullthrough technique using the 8-channel hy  
capillary infusion system for anorectal function.  
parameters of the manometry were compared between pa  
tients with PSS and 20 normal control subjects, match  
age and sex.

**Results :** The mean resting pressure over the high pr  
zone (HPZ) in patients with PSS was significantly low  
that in the control group (70.8 ± 3.4 mmHg vs. 81.5 ±  
mmHg; P=0.046). The HPZ in patients with PSS was als  
significantly reduced compared with that in the cont  
± 0.1 cm vs. 2.5 ± 0.1 cm; P=0.002). The rectoanal in  
tory reflex (RAIR) was detected in only 10 patients  
in the PSS group, but was present in all except one  
in the control (P=0.022). More interestingly, RAIR  
tients with PSS responded at a higher volume of the a  
sufflated than that in the control (74% vs. 30% at  
21% vs. 30% at 30 cc, and 0% vs. 40% at 50 cc, respec  
tively; P=0.031). Other functional parameters, i  
maximal squeeze pressure, minimal sensory and maximal  
erale volume of the rectum and rectal compliance

not significantly different between two groups.

**Conclusions :** Anorectal involvement reflected by th  
rectal manometric dysfunction may be rather an ea  
event in patients with PSS. An awareness to perform an  
rectal manometric study in every case of PSS may be ne  
sary for earlier subclinical detection of anorectal i  
by the disease. **J Korean Soc Coloproctol 2002;18 :**

**Key Words :** Progressive systemic sclerosis, Anorectal  
etry, Rectoanal inhibitory reflex

(progressive systemic sclerosis)

1-3

50%

90%

가

3가 1  
( : 602-715)

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2001 21

2000 ( )

50 70%

fusion system (Arndorfer, Inc., Greendale, WI, USA)  
(stationary pull-through technique)  
1 1 ( )  
®; ( ) , )  
4.8 mm  
(Arndorfer, Inc., Greendale, WI, USA)  
( ) 가 6 cm  
(anorectal 1 cm  
manometry) 1 cm (resting  
가 pressure)  
가 1 cm  
(squeeze pressure)  
Polygram for Windows version 2.04  
software (Medtronic Gastrointestinal, Stockholm, Sweden)가

1) 6 cm  
2000 4 1 ml/  
가 ( ; ,  
17 20 ) (mini-  
mal sensory volume: MSV)  
(American 가  
Rheumatism Association) 9 (maximal tolerable volume, MTV)  
(major criterion) 가 ,  
(minor criterion) , 가 , 가 2 cm 20 ml 2  
, , 가 가 , , 3 20 ,  
2 가 (rectoanal inhibitory reflex, RAIR)  
가  
Raynaud 30 ml 50 ml 가  
(compliance)  
( V/ P).  
(high pres-  
sure zone, HPZ)  
(mean resting pressure, MRP)  
(maximal squeeze pressure, MxRP)

2) 20 가  
3) GraphPad InStat® Version 3.00 (GraphPad  
Software Inc, San Diego, CA, USA)  
8-channel hydraulic capillary in- (unpaired mean) ± (standard error of

**Table 1.** Anorectal manometric profiles

Parameter	PSS	Normal control	P
Mean resting pressure (mmHg)	70.8±3.4	81.5±3.2	0.046
Maximal squeeze pressure (mmHg)	217±16.9	187.6±10.5	0.217
High pressure zone (cm)	1.5±0.1	2.5±0.1	0.0002
Minimal sensory volume (ml)	29.7±3.6	29.5±2.3	0.794
Maximal tolerable volume (ml)	143.5±10.8	147±4.7	0.988
Rectal compliance (mL H <sub>2</sub> O/mmHg)	7.8±0.8	9±1.1	0.573
Rectoanal inhibitory reflex			0.022
Present	10	19	
Absent	4		
Equivocal	3	1	

PSS = progressive systemic sclerosis.

mean, SEM)

Mann-Whitney test ,

chi-squared test

chi-

. P < 0.05

**Table 2.** Volume of insufflated air for rectoanal inhibitory reflex

Volume of air (ml)*	PSS	Normal control
20	3 (30%)	14 (74%)
30	3 (30%)	4 (21%)
50	4 (40%)	1 (5%)

PSS = progressive systemic sclerosis.

\*P=0.031 between PSS and control.

17

46.5 ( : 26 72)

2.5 ( : 0.9 8) .20

46.9 ( : 28 70)

Table 1

70.8±3.4 mmHg

81.5±3.2 mmHg

(P=0.046).

217

± 16.9 mmHg

187.6±10.5 mmHg

(P=0.022). Table 2

가

14 가 20 ml

4

1

30

ml 50 ml

가

1.5±0.1 cm,

2.5±0.1 cm

20 ml 30 ml

3

(P=0.0002).

, 4 50 ml

가

29.7±3.6 ml

29.5±2.3 ml,

가

143.5±10.8 ml

(P=0.031).

147±4.7 ml

(2.5

7.8±0.8 mL H<sub>2</sub>O/mmHg

9±1.1 mL H<sub>2</sub>O/

mmHg

1

가





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