

## 20 Years - experience of 1000 Consecutive Vasovasostomy

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### =Abstract=

Since the male sterilization(vasectomy) has been performed on a large scale as an accepted family planning in Korea on 1980s and this, in turn, has been followed by an increase in the number of patients requesting vasovasostomy. We studied 1000 consecutive cases of vasovasostomy performed from January 1975 to July 1995 in Pusan National University Hospital. In this report, we are going to present serial studies of vasovasostomy through which we attempted to find out what factors are of impotence in influencing the successful outcome of vasovasostomy operation. We inquired the operative results data through the questionnaire and telephone interview with survey of medical records. A total of 259 cases was excluded due to the loss of follow-up. The overall patency and pregnancy rates of 741 cases were 86.9% and 51.1%, respectively. The age of man at the time of anastomosis ranged from 23 to 57 years old with an average of 34.9. The most frequent reason for requesting vasovasostomy was the desire to have more children(43.4%). The average obstructive interval was 60.6 months with range from 1 to 264 months. If the obstructive interval had been less

than 5 years patency rate was 92.4% and pregnancy rate 64.8%, but 6 years or more 84.1% and 48.5% ( $p < 0.01$ ,  $p < 0.01$ ). Patency and pregnancy rates according to intraoperative vas fluid were 93.1% and 62.8% for presence and 83.7% and 53.1% for absence ( $p < 0.01$ ,  $p < 0.05$ ). Patency and pregnancy rates according to histologically proven sperm granuloma at vasectomy site were 87.7% and 49.2% for presence and 86.9% and 50.6% for absence ( $p > 0.05$ ,  $p < 0.05$ ). Patency and pregnancy rates were not significantly different between microscopic standard vasovasostomy (88.4%, 64.3%) and modified vasovasostomy (89.5%, 56.3%) ( $p > 0.05$ ,  $p > 0.05$ ). Both patency and pregnancy rates according to level of anastomosis were 89.8% and 59.8% in cases of straight vas and 91.5%, 60.1% in cases of convoluted vas ( $p > 0.05$ ,  $p > 0.05$ ). Patency and pregnancy rates according to the kind of suture materials were 91.5% and 56.2% for absorbable, 91.0% and 64.2% for non-absorbable and 93.3% and 53.3% for absorbable plus non-absorbable, respectively ( $p > 0.05$ ,  $p < 0.05$ ). Thus it is suggested that the important factor influencing the success rate of vasovasostomy is the interval of obstruction and vasal ooze with surgical skills.

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**Key Words** : Vasectomy, Vasovasostomy.

1900 ( , 1991).

4000 ( , 1991).

1960 가 1980

10 150

(Fig. 1.). 1985 327,750

2/3 1/3 ( , 1991). 1980

가 1.0%

5-10

1980 가 가

가 가

1-3% 가

( , 1996).

74-96% ,

44-81% 85% (Hendry, 1994).

가 (Derrick at al., 1973; Hagan & Coffey, 1977).

1975 1 20

1000

,

.

1. : 1975 1 1995 7 20 5  
1000 .

2. : 126 가 1986 5  
1986 6 874 bupivacaine lidocaine  
(1989) . 4 1978 23  
nylon splint , 6 loupe  
(Nagashima, Wild) , 1986 10 (Wild, Carl-Zeiss)  
2cm 가  
Allis  
가  
bulldog clamp 2 vasal approximator (ASSI, Edward & Co., INC., USA)  
2 10-0  
nylon 4 , 10-0 9-0 nylon 6-8  
1 8-0 vicryl 4  
4 .  
3. : 1-2 3

4. (Fig. 2.): 1-2 가  $20 \times 10^6/\text{ml}$

1 . 1

3-12 HCG, HMG clomiphene citrate

6, 12

2

. 6, 12

3-12

가

n

5.

:

$\pm$

SPSS/Win

*Chi-square test*

p

0.05

1. : (n=982) 34.9 (23-57 ) 20 72 (7.3%), 30 781 (79.5%), 40 119 (12.1%) 50 10 (1%) 30 가 가 . (n=692) 32.1 (21-52 ) 20 172 (24.9%), 30 495 (71.5%), 40 22 (3.2%) 50 3 (0.4%) 30 가 가 .

2. (n=867); 가 376 (43.4%) 가 가 205 (23.6%), 129 (14.9%), 122 (14.1%), 28 (3.2%) 가 1 (0.1%) (Fig. 3).

3. (n=809); 가 475 (58.7%) 가 268 (33.1%), 30 (3.7%), 27 (3.3%), 9 (0.1%) (Fig. 4).

4. (Table 1.); 가 가 741 (74.1%)

86.9% 51.1% .

1) (n=841); 60.6 (1-264

) . 5 504 (59.9%) 가 6-10 301 (35.8%) 10

36 (4.3%) 5 .

5 , 6-10 10 92.4% 64.8%, 85.4% 51.1%,

73.1% 29.2% 5

( $p < 0.01$ ,  $p < 0.01$ ).

2) (n=822);

549 (66.8%), 273 (33.2%) .

93.1% 62.8%, 83.7% 53.1%

( $p < 0.01$ ,  $p < 0.05$ ).

3) (n=551);

가 551 235 (42.6%), 316  
(57.4%) . 87.7% 49.2%, 86.9%  
50.6% (p>0.05),  
(p<0.05).

4) (n=848); 2 1 122  
(14.4%) 696 (82.1%), 23 (2.7%) 7 (0.8%)  
. 69.7% 30.4%  
. 2  
1 88.4% 64.3%,  
89.5% 56.3% 2 1  
(p>0.05, p>0.05).

5) (n=688); 528 (76.7%) 160  
(23.3%) . 89.8%  
59.8%, 91.5% 60.1% (p>0.05, p>0.05).

6) (n=150); 가 113 (75.3%)  
가 37 (24.7%) .  
91.5% 56.2%, 91.0% 64.2%  
(p>0.05, p>0.05).



O'Conor(1948)가 420

45%

Derrick

(1973) 1600

38% 19%

39%

75-96%,

46-82% (Lee & McLoughlin, 1980; Sharlip, 1981; Cos et al,

1983)

가

가

가

(Table 2.). 1964

(1985)

90% 51%, (1993)

90.2% 50.8%, (1996)

80% 53%, (1988)

2

85.7% 49.5%

86.9% 51.1%

가

3/4

가

5, 6, 9, 10

가 (Silber et al., 1977; Silber, 1978; Lee, 1980).

가

가

가

가

10 Silber (1977) 10 90% ,  
 38%  
 (1980) 6 70%  
 , 9 30% 가  
 61 (1-264 ) 5 , 6-10 10 3  
 (p<0.01, p<0.01).

watery, milky, creamy

, , , , ,

7

milky creamy

watery

(Silber

et al., 1977).

Sharlip (1948)

(p<0.01, p<0.05).

, optical loupe

3가 ,

2

1

. 1

2

가

optical loupe

. 2

. 1

. Sharlip(1981)

가

2

1

( $p > 0.05$ ,  $p > 0.05$ ).

2

6

$15 \times 10^6/ml$

가

가

가 (transient fertility)

가

. Belker (1985)

3-4%

1

가

3

가 2

가

가

,

,

가

가

20-60%

(Amelar &

Dubin, 1979; Belker et al., 1978; Silver, 1977). Silber (1977)

blow out

가 551 42.6% 53.4%

가

가

가

가

가

(1985)

89.0% 43.9%, 82.8% 41.7%

89.8% 59.8%, 91.5% 60.1% (p>0.05, p>0.05)

2

Silber (1978)

50%

stent

stent

23 nylon stent

fibrin

(surgical glue)

( & , 1994).

1000

,

,

가

가 .

1975 1 1995 7 20

1000

1) (n=982) (n=692) 34.9 (23-57 ) 32.1 (21-52 )

, 30 가 3/4 .

2) (n=867) 가 376 (44%) 가

가 205 (24%), 129 (15%), 122 (14%), 28 (3%) .

3) (n=809) 가 475 (59%) 가 268 (33%),

30 (4%), 27 (3%), 9 (1%) .

4) (n=841) 61 (1-264 ) 5 가 504 (59.9%) 가

6-10 301 (35.8%) 10 36 (4.3%) 5 가 2/3 .

5) 가 741 (74.1%) 86.9%

51.1% .

( p<0.01, p<0.01 p<0.01, p<0.05)

, 가 ( p>0.05,

p>0.05).

, : bupivacaine lidocaine .  
1989, 25, 17-21.

, , , : , 1996, 37, 88-93.

, , : 87 .  
1993, 34, 904-908.

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Table 1. Success rates according to various clinical parameters including obstructive interval, ooze, sperm granuloma, anastomotic technique, level of anastomosis and suture materials

Parameters	Patency rate(%)	Pregnancy rate(%)
<b>Interval(yrs)</b>		
5	366/396 (92.4)	226/349 (64.8)
5< 10	182/213 (85.4)	91/178 (51.1)
10	19/26 (73.1)	7/24 (29.2)
p value	p<0.01	p<0.01
<b>Ooze</b>		
Present	310/330 (93.1)	186/296 (62.8)
Absent	231/276 (83.7)	121/228 (53.1)
p value	p<0.01	p<0.05
<b>Sperm granuloma</b>		
Present	135/154 (87.7)	63/128 (49.2)
Absent	185/213 (86.9)	88/174 (50.6)
p value	p>0.05	p>0.05
<b>Anastomotic technique</b>		
Standard two-layer	107/121 (88.4)	72/112 (64.3)
Modified one-layer	443/495 (89.5)	242/430 (56.3)
p value	p>0.05	p>0.05
<b>Level of anastomosis</b>		
Straight vas	345/384 (89.8)	199/333 (59.8)
Convolutd vas	172/180 (95.6)	102/168 (60.7)
p value	p>0.05	p>0.05
<b>Suture material</b>		
Absorbable	237/259 (91.5)	123/219 (56.2)
Nonabsorbable	172/189 (91.0)	104/162 (64.2)
p value	p>0.05	p>0.05

Table 2. Significance of each parameter related to success rate according to authors

Parameter	Significance	No significance
Obstructive interval(yrs)	Silver(1978), Lee(1980), Cos(1983) Tobn(1991), Fox(1993)	
Ooze	Mo(1991)	Sharlip(1948)
Sperm granuloma	Silver(1977), Mo(1991)	
Operative methods	Silver(1978)	Sharlip(1981), Mo(1991)
Level of anastomosis	Lee(1985)	
Sperm quality of vasal fluid	Lee(1995), Belker(1991)	Mo(1991)