

Surgical Treatment of Anal Fistula

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Most anal fistulas are either intersphincteric or I sphincteric and are treated by fistulotomy with a few rrence and minimal risk of incontinence. In high and cated fistulas, fistulotomy should not be used beca high chance of incontinence. High transsphincteric o sphincteric fistulas, anterior fistulas in female, coexisting inflammatory bowel disease, elderly patie poor sphincter function, multiple simultaneous fis patients with multiple prior sphincter injuries ne native technique to minimize the incidence of incont The alternative techniques include seton placement, cement flap closure, muscle filling procedure, fib etc. depending on the status of fistula and patien various sphincter sparing techniques used widel reviewed. J Korean Soc Coloproctol 2002;18:141-14

Key Words: Anal fistula, Surgical treatment

Chiari,³ Herrmann Desfosses⁴가 , Eisenhammer⁵ , Parks⁶ 가 Milligan Morgan⁷ (anorectal ring) , Goligher⁸ ischi- orectal infralevator pelvirectal supralevator . Thompson⁹ . Parks¹⁰ Stelzner¹¹ , Sumikoshi¹²

가 가 가 Hippocrates (BC 460)가 (seton) ,¹ 1376 John of Arderne 가 (St. Mark, 1835) Freder- ick Salmon

1) (Fistulotomy) (curettage) (fistu- lectomy) 가

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10% (Table 1)¹³ , 0 26% (Table 2)¹³

, 가 (soiling) 24% 가 , 가 가? 가 Lunniss¹⁴ (puborectalis muscle) continence scoring system (resting pressure)

Table 1. Recurrence after treatment of fistula-in-ano (most reports confined to low fistulas)

Authors	n	Method	Recurrence (%)
Bennett (1962)	108	Lay open	2 (2)
Hill (1967)	626	Lay open	6 (1.0)
Mazier (1971)	1000	Lay open	39 (3.9)
Ani and Solanke (1976)	82	Lay open	14 (17)*
Parks and Stitz (1976)	16	Lay open	1 (6.3)
	15	Internal sphincterotomy and curettage only	5 (33)
Adams and Kovalcik (1981)	53	Lay open	5 (9)
	80	Excision	0
Kuijpers (1982)	51	Lay open	2 (4)
Gingold (1983)	74	Lay open	1 (1.3)
Khubchandani (1984)	68	Excision	4 (5.8)
	69	Internal sphincterotomy and curettage only	0
Vasilevsky and Gordon (1984)	160	Excision	10 (6.3)
Kronborg (1985)	26	Lay open	3 (11)
Denecke et al (1985)	57	Lay open	0
Lilius (1986)	150	Lay open	8 (5.5)
Shouler et al (1986)	115	Lay open	8 (6.9)

Values in parentheses are percentages.

*Stenosis in nine.

Table 2. Percentage of incontinence after treatment of low fistula-in-ano

Author	n	Incontinence		Soiling
		Faecal	Flatus	
Bennett (1962)	129	12	16	24
Parks and Stitz (1976)	66	26	0	26
Marks and Ritchie (1977)	204	17	25	31
Vasilevsky and Gordon (1984)	151	1	3	NS
Kronborg (1985)	47	0	10	NS
Denecke et al (1986)	57	17	5	7
Shouler et al (1986)	115	2	2	12

NS = not stated.

(squeeze pressure)

가

가

2) (seton)

(seta bristle)

loose, tight cutting, chemical

(1) Loose seton: Loose seton

가 가

¹⁵ Parks ¹⁶ Stitz

2 3

가

Thompson Ross¹⁷ 44%,

Kennedy Zegarra¹⁸ 78%

(staged fistulotomy). Kuypers¹⁹

3 , Ramanujan ²⁰ 7 8

(2) Tight cutting seton:

가

, Misra Kapur²¹

3.6 , Williams ²²

16 . Christensen ²³ 21 2

14

62%

. Hanley²⁴

3 4

6 8

Cirocco Rusin²⁵ Barron

2 4

Tight cutting seton seton
staged fistulotomy

가

(3) Chemical seton: Kshara sutra ()

Sushruta가

가

1

6 1 cm

²⁶

²⁷ 가

Seton

. Pearl ²⁸ 116

staged fistulotomy 3% 5%

(Table 3)²⁸

가

Williams ²² 54%

. Garcia-Aguilar ²⁹ 59

staged fistulotomy cutting seton

가

3) Advancement flap

(1) (mucosal flap): Noble³⁰

Elting³¹

coring out

Table 3. Literature review of incontinence and recurrence after staged fistulotomy using a seton

Series	Incontinence (%)	Recurrence (%)
Ramanujam et al (1983)	1/45 (2)	1/45 (2)
Kuypers (1984)	1/10 (1)	0/10 (0)
Culp (1984)	0/20 (0)	0/20 (0)
Christensen et al (1986)	6/21 (29)	0/21 (0)
Held et al (1986)	0/7 (0)	0/7 (0)
Fasth et al (1990)	0/7 (0)	0/7 (0)
Williams et al (1991)	1/24 (4)	2/24 (8)
Total	9/134 (6.7)	3/134 (2.2)

가 , Nelson ³⁶ 65 13 20%, Robertson ³⁷ 14 3 21%, Robertson 6 3 50% . Ro- bertson 20 19

② Advancement flap with skin pedicle; island flap ³⁸

가

(2.5 cm) () 40 1 (2.5%) . 가

Aguilar ³² 2% 가

(Table 4)³³ Schouten ³³ 25

% Lunniss ³⁹

35 (40%) Mizrahi ³⁴ 93 50%, 가

30% . 가 가 , flap

Parks retractor

4) (muscle filling procedure)

(2) (anocutaneous flap) (horseshoe) (Hanley)

① Island flap; (ectropion)

island flap pear (deep postanal

, diamond house . space) 가

Table 4. Recurrence rates and incidence of disturbed continence after transanal advancement flap repair in patients with high transsphincteric fistulas of cryptoglandular origin

Author	Year	No. patients	Follow-up	Recurrence rate (%)	Disturbed continence (%)
Oh	1982	15	N.S.	13	N.S.
Aguilar et al.	1985	151	8 months to 7 years	2	10
Wedell et al.	1987	27	18 months to 4 years	0	0
Shemesh et al.	1988	8	Up to 5 years	13	0
Kodner et al.	1993	31	Mean: 7 months	13	N.S.
Ozuner et al.	1996	19	Median: 31 months	32	N.S.
Schouten et al.	1998	44	Median: 12 months	25	35

N.S = not stated.

sliding method 가 1
 one flap method, 2
 two flap method, (gluteus maximus muscle)

Iwadare⁴⁰

328 5 (1.5%)

5) Fibrin glue

Fibrinogen thrombin (fibrin clot)
 (surgical sealant)

가

HIV

가

1 cm

Cintron^{41,42} (3.5)

가 26 22 (85%)
 (18) 79

14 (54%), 53 34 (64%)

가

seton , , fibrin glue

가

가

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