

Original Article

# Ligation of Intersphincteric Fistula Tract (LIFT) for Anal Fistula and Abscess: A Single Surgeon Experience

Wei-Ting Lin  
Bo-Wen Lin  
Chun-Hsien Wu  
Ren-Hao Chan  
Shao-Chieh Lin  
Jenq-Chang Lee  
Po-Chuan Chen

Division of Colorectal Surgery, Department of Surgery, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan.

## Key Words

Ligation of intersphincteric fistula tract;  
Anal fistula;  
Anal abscess

**Purpose.** The purpose of our study here was to present a retrospective review of our experience of LIFT procedure in the treatment of anal fistula or abscess.

**Methods.** A retrospective review of patients who underwent the LIFT procedure for anal fistula or abscess from May 2013 to October 2017 was performed. A total of 91 patients with anal fistula or anal abscess were treated under elective or emergency settings by one colorectal surgeon. Patients' demographic data, comorbidities, and follow-up data were collected for analysis.

**Results.** A total of 77 LIFT procedures for anal fistula and 20 LIFT procedures for anal abscess were analyzed. The most frequent type of anal fistula was low transsphincteric fistula (52.5%). The operation time for anal abscess is significantly higher than that for anal fistula (50 minutes versus 35 minutes,  $p < 0.05$ ). The overall primary healing rate of LIFT procedure was 92.8% at a median follow-up of 4.2 weeks. The recurrence rate of our study was 17.5%.

**Conclusions.** For treatment of anal fistula or abscess, LIFT procedure is safe and effective. Low recurrence rate and high primary healing rate were proven in our study.

[J Soc Colon Rectal Surgeon (Taiwan) 2018;29:106-113]

Anal fistula and abscess are characterized by either chronic purulent drainage or acute abscess formation.<sup>1</sup> The disease had an incidence of 8.6 per 100 thousand people and nearly 20000 to 25000 fistulas are treated annually in the United States.<sup>3</sup> In most patients with anal fistula, the fistula is simple and can be treated satisfactorily by fistulotomy (ie. by laying open the primary fistula tract). Similarly, anal abscess can be dealt with by simple incision and drainage or concurrent fistulotomy if the internal orifice can be found during the surgery. Fistulotomy, with or without

marsupialization, generally has high success rates for about 95%<sup>28</sup> but brings a variable incontinence risk of about 10 to 45%.<sup>8</sup> When the fistula traverses a significant portion of sphincter muscle or is extra- or supra-sphincteric in nature, fistulotomy is not recommended for fear of possible postoperative anal incontinence. To deal with this problem, several sphincter-preserving procedures have been described, including advancement flap, fibrin glue sealant, collagen plug, and ligation of intersphincteric fistula tract (LIFT) procedures.<sup>12</sup> Until now, no single technique has been shown

Received: January 26, 2018.

Accepted: March 12, 2018.

Correspondence to: Dr. Po-Chuan Chen, Division of Colorectal Surgery, Department of Surgery, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, No. 138, Sheng-Li Road, Tainan City 704, Taiwan. Tel: 886-6-235-3535 ext. 5181; Fax: 886-6-276-6676; E-mail: cpc324@gmail.com

to be suitable for all types of anal fistulas<sup>11</sup> because proper management of anal fistula requires correct knowledge of the etiology and an understanding of the relevant anatomy.

An intersphincteric approach to the primary fistula tract was first described by Matos et al.<sup>4</sup> in 1993 but was not popularized due to high recurrence rates. Based on this concept, in 2007, Rojanasakul et al.<sup>2</sup> developed a technique called ligation of the intersphincteric fistula tract (LIFT). The core idea of the procedure is to ligate the intersphincteric segment of the fistula tract to block the entrance of fecal particles into the fistula tract, thereby to eliminate the septic nidus.<sup>2</sup> Since first reported in 2007, LIFT has gained increasing popularity, mainly due to the initial high success rates and relatively simple procedure. Many reports showed short term success rates ranging from 40% to 94% with minimal morbidity.<sup>2,5-7</sup>

In our hospital, we have started to perform LIFT procedure to both anal fistula and abscess since May 2013. Therefore, the purpose of our study here was to present a retrospective review of our experience of

LIFT procedure in the treatment of anal fistula or abscess.

## Materials and Methods

A retrospective review of patients who underwent the LIFT procedure for anal fistula or abscess from May 2013 to October 2017 at National Cheng Kung University Hospital was performed. A total of 91 patients with anal fistula or anal abscess were evaluated in the outpatient setting or emergency room by colorectal surgeons. A history was taken and a physical examination including digital rectal examination and anoscopy were performed. For image studies, computed tomography exams, endorectal ultrasound, fistulography exam and magnetic resonance imaging exams were arranged by the discretion of the primary care doctors (Table 1). A single colorectal surgeon experienced with the LIFT procedure performed all the operations.

All fistulas were classified by the use of the Arun-

**Table 1.** Demographic and clinical data

Diagnosis	Anal fistula	Anal abscess	Total
Patient numbers	71	20	91
LIFT procedures	77	20	97
Gender			
Male	66	18	84
Female	5	2	7
Age, median (range)	41 (19-69)	49 (23-71)	
Previous operation	21 (27.3%)	5 (25%)	
Pre-operation image			
CT	9 (11.69%)	14 (70%)	
Endoanal ultrasound	33 (42.86%)	0	
Fistulography	2 (2.6%)	0	
MRI	7 (9.09%)	0	
Fistula type			
Intersphincteric type	7 (7.21%)	0	7 (7.2%)
Low transphincteric type	48 (62.34%)	3 (15%)	51 (52.6%)
High transphincteric type	13 (16.88%)	2 (10%)	15 (15.5%)
Semi-horseshoe or horseshoe ischioanal type	9 (11.69%)	15 (75%)	24 (24.7%)
Comorbidity			
Hypertension	11	4	
Diabetes mellitus	6	6	
Liver cirrhosis	1	1	
HIV	1	0	
Morbid obesity	1	0	

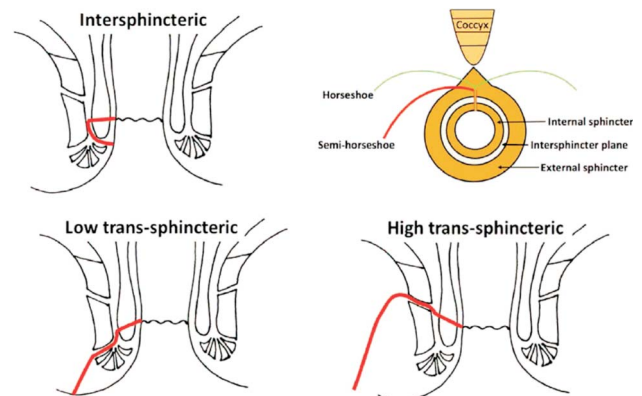
Rojanasakul classification (Fig. 1). Fistulas were categorized both by imaging studies and intraoperative findings by the operating colorectal surgeon based on this classification, as follows:<sup>10,25</sup>

1. Intersphincteric type: the fistula tract passed through the internal sphincter and lies in the intersphincteric plane.
2. Low transsphincteric type: the fistula tract passed between the subcutaneous external sphincter and the superficial external sphincter
3. High transsphincteric type: the fistula tract passed between the superficial external sphincter and the puborectalis muscle.
4. Semi-horseshoe or horseshoe ischioanal type: the fistula tract passed through the deep posterior intersphincteric space or deep postanal space to ipsilateral or bilateral ischioanal fossa with internal opening at the posterior midline.

### Operative technique

The LIFT technique used was similar to that described in the literature.<sup>5</sup> Patients with chronic anal fistula underwent LIFT in a regular schedule and would receive a rectal enema preparation at the early morning of the surgery day. Patients with anal abscess usually underwent emergency surgery and received no rectal enema preparation at all. No routine mechanical bowel preparation was given. Patients were placed in the prone jack-knife position with the buttocks taped widely apart. General or spinal anesthesia method was chosen based on patient's condition and anesthesiologists' preference.

An anal retractor was gently inserted to expose the anus. The location of the internal opening was identified by injection of hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) through the external opening or by gently probing the fistula tract. An incision (2-3 cm) was made directly into the intersphincteric plane based on the direction of the internal opening. The intersphincteric space is entered first and with the external sphincter retracted laterally and the internal sphincter retracted medially, dissection is made in the intersphincteric plane down to and around the fistula tract. LIFT retractors (courtesy of Dr. Rojanasakul, Chulalongkorn University, Bang-



**Fig. 1.** Diagrams of the coronal section of the pelvic showing layers of anal sphincter complex and fistula classification.<sup>25</sup>

kok) were used to assist in the exposure. The intersphincteric tract was gently dissected out and hooked with a right-angled clamp. Secure ligation of the intersphincteric tract abutting the internal opening was the key to success. A 3-0 polyglactin suture (Vicryl) was used to suture at the point where the intersphincteric tract passes into the internal sphincter muscle. The tract next to the suture site was divided, and the remnant of the intersphincteric tract or the infected gland was removed. All specimens were sent for pathological exam. After excision of the intersphincteric tract, H<sub>2</sub>O<sub>2</sub> injection or probing through the external opening was again performed to confirm that the correct fistula tract was removed. Infected granulation tissues in the rest of the fistulous tracts and cavity were thoroughly removed with curettages. The open defect at the external anal sphincter was suture-closed with 3-0 polyglactin through the intersphincteric wound. Finally, the incision wound was closed with a few interrupted stitches of 3-0 polyglactin.

### Post-operative care

All patients were prescribed oral antibiotics, stool softener and analgesic medications for one week. Patients were instructed not to perform sitz bath but only wound cleansing with water or wet cotton swabs. All patients were followed in the outpatient clinic 1 or 2 weeks after the surgery. Subsequent follow-up was performed at 2-4 weeks intervals until the wound was

completely healed. Any complications, fistula recurrence or incontinence were recorded in the medical charts.

Primary wound healing was recorded at follow-up by the operating surgeon and defined as: healed, complete healing with the absence of an external opening within 12 weeks, or unhealed, persistence of an external opening after 12 weeks, or recurrence of symptoms after 12 weeks.<sup>25</sup> Early recurrence was defined as persistently unhealed intersphincteric wound for over 12 weeks, recurrent pustulous discharge either from the intersphincteric wound or the same external opening. Late recurrence was defined as the resolution of symptom in the early period but recurrence of symptoms after 12 weeks (Fig. 2).

### Result

From May 2013 to October 2017, 97 LIFT procedures were performed on 91 patients with anal fistula or abscess. Of 71 patients who were diagnosed as anal fistula, 66 were male and 5 were female; of 20 patients who were diagnosed as anal abscess, 18 were male and 2 were female. The median age of these patients was 42 (range, 19-71) years. 21 (23.1%) patients had previous surgeries for abscess or fistula. An incision and drainage of abscess cavity was the most frequent previous surgical procedures (18/21). Patient demographics and prior surgical history were shown in Table 1.

Comorbidities were present in 25.3% (23/91) of patients and included hypertension, diabetes mellitus, liver cirrhosis, HIV and morbid obesity (Table 1). According to Arun Rojanasakul classification of anal fistula, the low transsphincteric type (52.6%; 51/97) was the most frequent type of anal fistula. The intersphincteric type was 7.2% (7/97); the high transsphincteric type was 15.5% (15/97). The semi-horseshoe and horseshoe ischioanal type were 24.7% (24/97). Of 24 patients with semi-horseshoe or horseshoe ischioanal type, 15 patients were diagnosed to have complicated anal abscess as the initial presentation.

The median operation time was 42 minutes. The median operation time for anal fistula was 35 minutes (range from 13 to 100 minutes); the median operation

time for anal abscess was 50 minutes (range from 17 to 120 minutes). The operation time for anal abscess is significantly higher than that for anal fistula ( $p < 0.05$ ). There were no intra-operative complications. The post-operative hospitalization day ranged from 2 to 17 days, with a median of 2 days. Twenty postoperative complications were observed. Two patients had post-operation bleeding from external orifice and received conservative treatment by using oral form transamine. Two patients had stitch abscess, in whom one patient received stitch removal and oral antibiotics and the other patient received fistulectomy. Sixteen patients with intersphincteric wound dehiscence were noticed. In this group of patients, 11 patients spent an average of 54.2 days for secondary wound healing (range from 23 to 121 days); the other 5 patients were proven to have early recurrence of anal fistula. Late recurrences were noted in 10 patients (Table 2, Fig. 2).

During outpatient clinic follow-up, a median follow-up time was 30 days (7-381 days). Of the 91 patients in the study, 84 patients (92.3%) healed successfully after 1<sup>st</sup> LIFT procedure. There was a total of 17 recurrences (17.5%) during outpatient clinic follow up. The median time to develop recurrence was 4.7 months. To manage these recurrences, two patients received re-LIFT procedure, with only one success (50%). One female patient with intersphincteric type fistula received four times of LIFT procedures and recurred three times. One patient received continued wound care and healed spontaneously. 6 patients re-

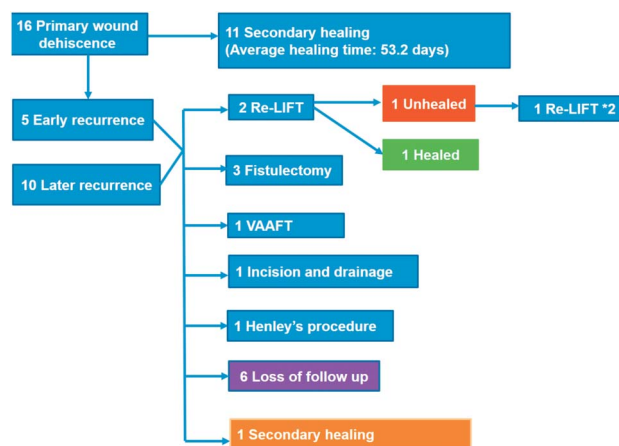


Fig. 2. Flow diagram showing the outcome of wound healing after a LIFT procedure.

**Table 2.** Outcomes of LIFT procedure

Diagnosis	Anal fistula	Anal abscess	<i>p</i> value
Median operation time (range)	35 (13-100)	50 (17-120)	0.0238
Median hospital stay (days) (range)	2 (2-6)	4.5 (2-17)	< 0.0001
Median follow up period (days)	30	27	0.9124
Primary healing failure	7	0	
Primary healing rate	90.9% (70/77)	100% (20/20)	0.084
Number of patients with intersphincteric wound dehiscence and healed secondarily	10	1	
The secondary healing time for intersphincteric wound dehiscence (days)	57	26	
Recurrence rate	19.5% (15/77)	10% (2/20)	0.322
Median recurrence time (months)	4.7 (1-39)		
Type for recurrence			
Intersphincteric	3 (42.9%)	0	
Low transphincteric	4 (8.3%)	0	
High transphincteric	5 (38.5%)	0	
Semi-horseshoe or horseshoe ischioanal	3 (33.3%)	2 (13.3%)	
Post-operative complications			
Bleeding	2		
Intersphincteric wound dehiscence	16		
Stitch abscess	2		

ceived other procedures, including fistulectomy, incision and drainage, modified Henley's procedure and video-assisted anal fistula treatment (VAAFT). The rest of the patients lost to follow-up (Fig. 2).

## Discussion

In this retrospective, single surgeon experience study, we showed that LIFT procedure was safe and effective, especially for low transsphincteric anal fistula and also quite effective to deal with anal abscess.

In our study, the overall primary healing rate of LIFT procedure was 92.8% at a median follow-up of nearly 30 days. This result compares favorably to the previously published LIFT series that have shown primary healing rates ranging from 40% to 94% with variable follow-up periods (Table 4). Our result also showed that the average wound healing time of LIFT procedure is comparable to that of the traditional fistulotomy or fistulectomy procedures.<sup>30,31</sup> We share the same idea that the LIFT procedure appears to be safe, effective and cost effective<sup>17</sup> and the biggest advantage of the LIFT procedure is the preservation of the sphincter mechanism with low rates of incontinence. In our study, no cases of incontinence were reported,

**Table 3.** Relationship of previous operations with LIFT success

	Success	Recurrence	
0 operation n = 71	67	4	
1 operation n = 26	13	13	
	80	17	<i>p</i> < 0.00001

although a systematic assessment of incontinence was not performed.<sup>10</sup> Another advantage of LIFT is the very low cost of the procedure since no foreign infill or plug materials are used. Our experience and the initial literature evidence support the cost effectiveness of LIFT procedure with superior results compared to plug or fibrin glue use alone.<sup>17</sup>

Multiple factors affected the healing and recurrence rate of anal fistula, including possible complexity of the original fistula, incorrect manipulation of the operative field, patients' comorbidities, previous operations, and the surgeon's proficiency with the procedure.<sup>13</sup> Abcarian et al.<sup>18</sup> and Xu et al.<sup>13</sup> both reported that the patient with one more previous surgery had a lower success rate than the patient without previous surgery for anal fistula or abscess. Our result is similar to the finding of previous report and shows that recurrence rate of the patients without previous surgical history is very low than those with more than one previous surgical history (5.6% vs 50%, *p* < 0.05) (Table 3).

**Table 4.** Worldwide experience with LIFT

Paper	Country	Year	N	Healing rate	Recurrence	Median age	Incontinence
Rojanasakul et al. <sup>5</sup>	Thailand	2007	18	94% (17/18)	-	-	0%
Bleier et al. <sup>15</sup>	USA	2010	35	57% (20/35)	10.3%	49	0%
Shanwani et al. <sup>6</sup>	Malaysia	2010	45	82% (37/45)	17.7%	41.5 (27-56)	No record
Aboulian et al. <sup>7</sup>	USA	2011	25	68% (17/25)	12%	39	No record
Ooi et al. <sup>16</sup>	Australia	2011	25	68% (17/24)	28%	40	0%
Sileri et al. <sup>17</sup>	Italy	2011	18	83% (15/18)	-	39 (4-62)	0%
Abcarian et al. <sup>18</sup>	USA	2012	39	74% (29/39)	-	43	0%
Liu et al. <sup>21</sup>	USA	2012	38	61% (23/38)	-	42 (26-58)	0%
Van onkelen et al. <sup>22</sup>	Netherlands	2013	22	82% (18/22)	-	45	0 (RFISI)
Wallin et al. <sup>19</sup>	USA	2012	93	40%	26%	43	8 (25%)
Tan et al. <sup>11</sup>	Singapore	2011	93	86% (80/93)	6.5%	40 (16-71)	No record
Lehmann et al. <sup>20</sup>	Sweden	2013	17	65% (11/17)	17.6%	49	No record
Lo OSH et al. <sup>24</sup>	Hong Kong	2012	25	89%	11%	48 (22-64)	No record
Xu et al. <sup>13</sup>	China	2017	55	60%	40%	46 (17-62)	2 (3.6%)
Malakorn et al. <sup>25</sup>	Thailand	2017	251	87.4% (220/251)	-	41	0
Our study	Taiwan	2017	97	92.8%	17.5%	42.6	0

N: case number of patient; ref. no., number in list of references.

In our study, we found that recurrence rate of the patients with semi-horseshoe or horseshoe ischioanal fistula (33.3%; 3/9) and high transsphincteric fistula (38.5%; 5/13) were higher than other types of fistula. Compared with other types of anal fistula, management of the semi-horseshoe or horseshoe ischioanal fistula is more difficult for colorectal surgeons. In our opinion, incorrect understanding of the fistula anatomy before surgery could be the main reason of LIFT procedure failure in this group of patients. In the literature and with our experience, magnetic resonance imaging (MRI) has been shown to demonstrate accurately the anatomy of the perianal region, the anal sphincter mechanism, the relationship of fistulas to the pelvic diaphragm and the ischioanal fossa.<sup>26,27</sup> Vittorio et al.<sup>29</sup> recommends that MRI should be considered as the first-line imaging study before surgery, especially for complicated anal fistula (ie. Semi-horseshoe and ischioanal horseshoe fistula) and we share the same opinion.

Intersphincteric type of anal fistula is the simplest type of anal fistula and traditionally, fistulectomy is the gold standard. In our study, we tried to perform LIFT procedure for this group of patients, but the result was poor. We think that secure ligation over the edge of internal sphincter after core-out fistulectomy from the external opening through the intersphincteric groove is difficult to execute because we usually ligated over the ischemic fistula tissue after dissection. Therefore, we abandoned LIFT procedure in this group

of patients and shifted back to traditional fistulectomy for the intersphincteric anal fistula.

Compared to previous studies, our study showed that the use LIFT procedure for anal abscess was quite encouraging. The primary healing rate of anal abscess in our study was about 90% although the sample size was small (n = 20). Besides, 75% of the anal abscess patients had either complicated semi-horseshoe or ischioanal horseshoe abscess formation. According to our experience, we believe that LIFT procedure is also suitable for most anal abscess patients.

Our study has several limitations. First, this is a retrospective study that predisposes to significant selection bias. Second, all surgeries were performed by a single colorectal surgeon. Therefore, the clinical outcomes were closely related to the surgeon's technique and experience. The learning curve of LIFT procedure may affect the prognosis of the patient, although the primary healing and recurrence rates of our study is similar to previous studies.

## Conclusion

The LIFT procedure for anal fistula is safe to perform, has a high healing rate and appears to be of low complication and minimal impact on continence after surgery. LIFT procedure is also a feasible surgical method to deal with anal abscess with high primary heal-

ing rate and low recurrence rate.

## Sources of Financial Support

None.

## References

- Whiteford MH, Kilkenny J III, Hyman N. Practice parameters for the treatment of perianal abscess and fistula-in-ano (revised). *Dis Colon Rectum* 2005;48(7):1337-42.
- Rojanasakul A, Pattanaarun J, Sahakitrungruang C. Total anal sphincter saving technique for fistula-in-ano: the ligation of intersphincteric fistula tract. *J Med Assoc Thai* 2007;90(3):581-6.
- Blumetti J, Abcarian A, Quinteros F. Evolution of treatment of fistula in ano. *World J Surg* 2012;36(5):1162-7.
- Matos D, Lunniss PJ, Phillips RK. Total sphincter conservation in high fistula in ano: results of a new approach. *Br J Surg* 1993;80(6):802-4.
- Rojanasakul A. LIFT procedure: a simplified technique for fistula-in-ano. *Tech Coloproctol* 2009;13(3):237-40.
- Shanwani A, Nor AM, Amri N. Ligation of the intersphincteric fistula tract (LIFT): a sphincter-saving technique for fistula-in-ano. *Dis Colon Rectum* 2010;53(1):39-42.
- Aboulian A, Kaji AH, Kumar RR. Early result of ligation of the intersphincteric fistula tract for fistula-in-ano. *Dis Colon Rectum* 2011;54(3):289-92.
- Ramanujam PS, Prasad LM, Abcarian H. The role of seton in fistulotomy of the anus. *Surg Gynecol Obstet* 1983;157(5):419-22.
- Alasari S, Kim NK. Overview of anal fistula and systematic review of ligation of the intersphincteric fistula tract (LIFT). *Tech Coloproctol* 2014;18(1):13-22.
- Malakorn S, Wanitsuwan W, Chowchankit I. Simplified anal sphincter anatomy. *Int J Colorectal Dis* 2016;31(8):1567.
- Tan KK, Tan IJ, Lim FS. The anatomy of failures following the ligation of intersphincteric tract technique for anal fistula: a review of 93 patients over 4 years. *Dis Colon Rectum* 2011;54(11):1368-72.
- Kontovounisios C, Tekkis P, Tan E. Adoption and success rate of perineal procedures for fistula-in-ano: a systemic review. *Colorectal Disease* 2016;18(5):441-58.
- Xu Y, Tang W. Ligation of intersphincteric fistula tract is suitable for recurrent anal fistulas from follow-up of 16 months. *Biomed Res Int* 2017;2017:3152424.
- Sirikurnpiboon S, Awapittaya B, Jivapaisarnpong P. Ligation of intersphincteric fistula tract and its modification: result from treatment of complex fistula. *World J Gastrointest Surg* 2013;5(4):123-8.
- Bleier JI, Moloo H, Goldberg SM. Ligation of the intersphincteric fistula tract: an effective new technique for complex fistulas. *Dis Colon Rectum* 2010;53(1):43-6.
- Ooi K, Skinner I, Croxford M. Managing fistula-in-ano with ligation of the intersphincteric fistula tract procedure: the Western Hospital experience. *Colorectal Dis* 2012;14(5):599-603.
- Sileri P, Franceschilli L, Angelucci GP, et al. Ligation of the intersphincteric fistula tract (LIFT) to treat anal fistula: early results from a prospective observational study. *Tech Coloproctol* 2011;15(4):413-6.
- Abcarian AM, Estrada JJ, Park J. Ligation of intersphincteric fistula tract: early results of a pilot study. *Dis Colon Rectum* 2012;55(7):778-82.
- Wallin UG, Mellgren AF, Madoff RD. Does ligation of the intersphincteric fistula tract raise the bar in fistula surgery? *Dis Colon Rectum* 2012;55(11):1173-8.
- Lehmann JP, Graf W. Efficacy of LIFT for recurrent anal fistula. *Colorectal Dis* 2013;15(5):592-5.
- Liu WY, Aboulian A, Kaji AH. Long-term results of ligation of intersphincteric fistula tract (LIFT) for fistula-in-ano. *Dis Colon Rectum* 2013;56(3):343-7.
- van Onkelen RS, Gosselink MP, Schouten WR. Ligation of the intersphincteric fistula tract in low transsphincteric fistulae: a new technique to avoid fistulotomy. *Colorectal Dis* 2013;15(5):587-91.
- Sharma A, Chinn B, Einsenstat T, et al. Ligation of intersphincteric fistula tract for the treatment of fistula-in-ano: early experience of an institution. *Dis Colon Rectum* 2013;56(4):e151.
- Lo OSH, Wei R, Foo DCC. Ligation of intersphincteric fistula tract procedure for the management of cryptoglandular anal fistulas. *Surgical Proceedings* 2012;16:120-1.
- Malakorn S, Sammour T, Khomvilai S. Ligation of intersphincteric fistula tract for fistula in ano: lessons learned from a decade of experience. *Dis Colon Rectum* 2017;60(10):1065-70.
- de Miguel Criado J, del Salto LG, Rivas PF. MR imaging evaluation of perianal fistulas: spectrum of imaging features. *Radiographics* 2012;32(1):194-7.
- Daabis N, Shafey RE, Zakaria Y. Magnetic resonance imaging evaluation of perianal fistula. *Egypt J Radiol Nucl Med* 2013;44:705-11.
- Vasilevsky CA, Gordon PH. The incidence of recurrent abscesses or fistula-in-ano following anorectal suppuration. *Dis Colon Rectum* 1984;27(2):126-30.
- Vittorio P, Marco C, Luigi F. Practical MR imaging of anal fistula disease: how we do it. *International Journal of Collaborative Research on Internal Medicine & Public Health* 2016;8(9).
- Jain BK, Vaibhaw K, Garg PK. Comparison of a fistulectomy and a fistulotomy with marsupialization in the management of a simple anal fistula: a randomized, controlled pilot trial. *J Korean Soc Coloproctol* 2012;28(2):78-82.
- Ho YH, Tan M, Leong AF. Marsupialization of fistulotomy wounds improves healing: a randomized controlled trial. *Br J Surg* 1998;85(1):105-7.

原 著

## 治療肛門瘻管和膿瘍之括約肌間瘻管 (LIFT) 結紮術：單一外科醫生經驗

林威廷 林博文 吳俊賢 詹仁豪 林劭潔 李政昌 陳柏全

國立成功大學附設醫院 外科部 大腸直腸外科

**目的** 從回溯性研究去分析括約肌間瘻管結紮術治療肛門瘻管和膿瘍的成果。

**方法** 從 2013 年 5 月到 2017 年 10 月，收集所有肛門瘻管或膿瘍而接受括約肌間瘻管結紮術的個案，進行回顧性的分析。總共有 91 個肛門瘻管和膿瘍的病人，在門診或急診安排下接受手術。將所有病人資料、病人合併症和術後數據收集做統計。

**結果** 總共收集 91 個病人進行分析。一共有 77 個肛門瘻管進行了 LIFT 手術；有 20 個肛門膿瘍進行了 LIFT 手術。最主要的肛門瘻管類型是低位穿括約肌型瘻管 (52.5%)。肛門膿瘍的平均手術時間明顯高於肛門瘻管 (50 分鐘對比 35 分鐘， $p < 0.05$ )。在 4.2 周的平均追蹤時間裡，LIFT 手術的初步癒合率是 92.8%。而總體復發率為 17.5%。

**結論** 無論是治療肛門瘻管或膿瘍，LIFT 手術都是相當安全且有效的。我們醫院的成果證實了 LIFT 手術的低復發率和高初步癒合率。

**關鍵詞** 經括約肌間瘻管結紮術、肛門瘻管、肛門膿瘍。