Ligation of inter-sphincteric tract and mucosal advancement flap for treating perianal fistulas

RESEARCH WEEK
5-9 OCTOBER 2020
INSPIRED RESEARCHERS
Northern Health

Urbanavicius D, Bhamidipaty M, Chhugani P, Shi M, Daniel E, Bui A, D'Souza B, Strugnell N

Introduction: Perianal fistula is a common pathology encountered by the colorectal surgeon. For simple subcutaneous fistulas or those with negligible sphincter involvement, fistulotomy often yields favourable results. However, for more complex fistulas, fistulotomy dramatically increases the risk of faecal incontinence due to disruption of the sphincter complex. Procedures such as mucosal advancement flap (MAF) and ligation of inter-sphincteric fistula tract (LIFT) are two "sphincter sparing" operations well described in the literature. A retrospective audit was conducted to generate the first Northern Health body of evidence to review our outcomes in the role of sphincter sparing procedures for definitive management for perianal fistulas.

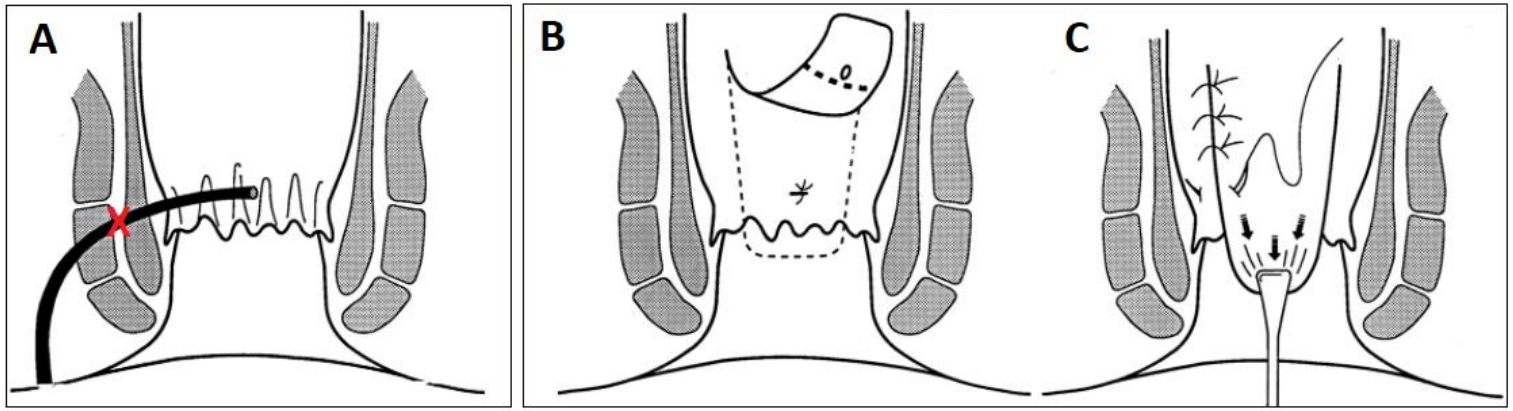

Figure 1: A: Ligation of intersphincteric fistula tract; the intersphincteric space is divided and the fistula tract is isolated and ligated (X). B-C: Mucosal advancement flap; a flap of mucosa is raised (B) and advanced to cover the internal opening of the fistula (C). Modified image from Vasilevski et al [1]

Methods: Patients who had "de-novo" LIFT or MAF procedures from January 2018 to December 2019 by the Northern Health colorectal unit were audited. Patients with fistulas resulting from Crohn's, radiotherapy or malignancy, age under 18 and those without inter-sphincteric or trans-sphincteric fistulas were excluded. Electronic medical health records were accessed to determine fistula recurrence and return to theatre rates.

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Results:

Table 1: Demographics of 'de novo' LIFT and MAF procedures

	MAF (n=14)	LIFT (n=21)	Total (n=35)
Demographics			
Median Age (Range)	49 (26-66)	45(26-68)	46(26-68)
Gender (M:F)	12:2	13:8	25:10
Pre-operative data			
Assessment modality			
EUA	14 (100%)	21 (100%)	35 (100%)
MRI Pelvis	3 (21.4%)	5 (23.8%)	8 (22.9%)
US	1 (7.1%)	1 (4.8%)	2 (5.7%)
Previous fistulotomy/seton exchange operations	2 (14.3%)	5 (23.8%)	7 (20%)
Characterisation of fistula			
Fistula type			
Trans-sphincteric	10 (71.4%)	21 (100%)	31 (88.6%)
Inter-sphincteric	2 (14.3%)	0	2 (5.7%)
Not specified	2 (14.3%)	0	2 (5.7%)
Sphincter involvement (%)	50 (25-80)	50 (35-60)	50 (25-80)
Anterior/Posterior	8/6	17/4	25/10

Table 2: Primary outcomes

	MAF (n=14)	LIFT (n=21)	Total (n=35)
Success rate	71.4%	76.2%	74.3%
Recurrence	4 (28.6%)	5 (23.8%)	9 (25.7%)
Return to theatre	5 (35.7%)	5 (23.8%)	10 (28.6%)

Results: 14 patients underwent MAF (87.5% male, median age 49) and 21 underwent LIFT (61.9% male, median age 45). All patients had examination under anaesthesia (EUA) prior to definitive procedure. In the MAF group, 10 patients (71.4%) had trans-sphincteric fistulas, and in the LIFT group all patients had trans-sphincteric fistulas. Median time to first review was 2 months for both MAF and LIFT, and median follow-up time was 5.5 months and 7 months for MAF and LIFT respectively. 4 MAF patients had fistula recurrence and subsequent return to theatre and 5 LIFT patients had fistula recurrence and returned to theatre. Success rates were calculated as 71.4% for MAF and 76.2% for LIFT.

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Discussion and Conclusion:

Discussion: These results are comparable to the success rates of other local institutions; in a retrospective analysis of outcomes post full thickness advancement flap operations conducted at a Brisbane tertiary hospital, Reiger et al [2] report a success rate of 71%. Similarly, in a retrospective analysis of outcomes post MAF at a Melbourne tertiary hospital, Kaneko et al report a success rate of 66%. Regarding LIFT, in a prospective study conducted at a Melbourne tertiary hospital, Ooi et al [3] report and success rate of 72%. These success rates are also comparable to those elsewhere in the world; in a meta-analysis conducted in the Netherlands comprised of 30 studies encompassing 1295 patients (797 MAF, 498 LIFT), Stellingwerf et al [4] report an overall success rate of MAF of 74.6% (95% CI 65.6-83.7) and a success rate of LIFT of 69.1% (95% CI 53.9-84.3).

Conclusion: Our study adds to the limited Australian data to support and validate the use of these sphincter sparing definitive fistula procedures. LIFT and MAF both appear to be viable treatment options for high perianal fistulas. The results from our audit of de-novo LIFT and MAF patients at Northern Health have comparable results to worldwide literature, and further adds weight to continue using these as definitive procedures for fistula-in-ano in the correct patient selection.

References:

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