

## Comparison of Wound Complications in Open vs Closed Lateral Internal Sphincterotomy for Anal Fissure (Presentation)

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# Comparison of Wound Complications in Open vs Closed Partial Lateral Internal Sphincterotomy for Anal Fissure

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# Background

- Anal fissure: ulcer-like, longitudinal tear in the anal canal, distal to the dentate line
- Presents as sharp rectal pain and bleeding associated with bowel movements
- Trauma likely the inciting event
- Hypertonia of internal anal sphincter
- Diminished perfusion to anoderm
- Rx: Over half of fissures heal with conservative measures
- Persistent fissures require operative intervention

# Purpose

- Partial lateral internal sphincterotomy (PLIS) is considered the preferred surgical treatment for chronic anal fissure in most patients
- PLIS can be performed by either the open or closed technique, with equivalent efficacy in fissure healing rates<sup>1-4</sup>
- Few studies have specifically compared wound complication rates between the two techniques
- Aim: compare the incidence of wound complications at the sphincterotomy site between open and closed technique

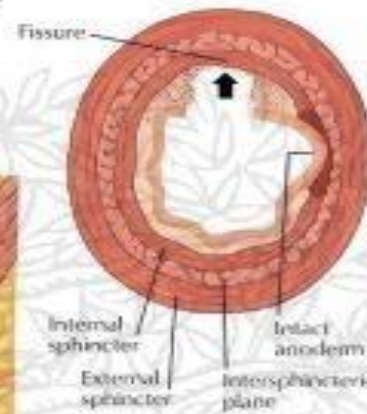
# Lateral Internal Sphincterotomy

## Closed technique



Blade inserted in intersphincteric groove and passed cephalad in intersphincteric plane to level of dentate line

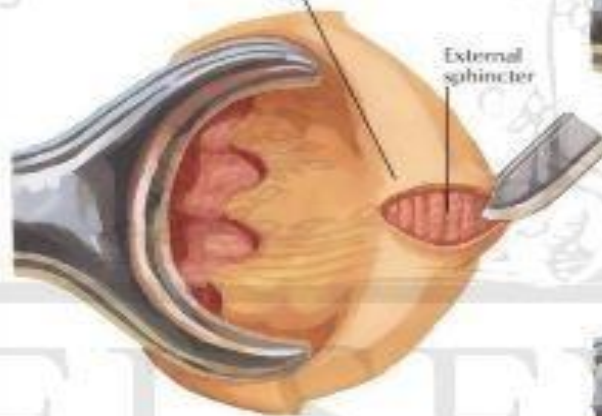
Blade then moved medially, dividing inferior 1/3 to 1/2 of internal sphincter



Internal sphincter divided; external sphincter, anoderm, and longitudinal muscle remain intact

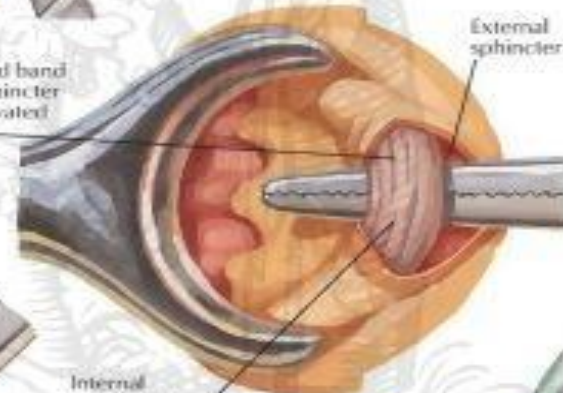
## Open technique

Skin incision made external to anal verge



Hypertrophied band of internal sphincter freed and elevated into incision

External sphincter



Internal sphincter

Internal sphincter divided; wound usually left open for drainage



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# Methods

- Retrospective chart review of patients in a single specialty practice undergoing open or closed PLIS for chronic anal fissure over a 5 year period
- Total of 253 patients identified
  - 88 had open sphincterotomy
  - 165 had closed sphincterotomy
- Preoperative variables:
  - Age
  - Gender
  - Location of fissure

# Demographics

Table 1:		
	Open (n = 88 pts)	Closed (n = 165 pts)
Median Age	47.9	46.3
Gender		
Male	48 (54.6%)	87 (52.7%)
Female	40 (45.4%)	78 (47.2%)
Location		
Posterior	62 (70.5%)	120 (72.7%)
Anterior	20 (22.7%)	32 (19.4%)
Other	6 (6.8%)	13 (7.9%)

# Methods

- Exclusion criteria:
  - Active infection at time of surgery
  - Inflammatory bowel disease
  - Lost to follow-up
- Statistical analysis: Chi-square, Fisher's exact test, Logistic regression



# Results

- Compared to closed sphincterotomy, open sphincterotomy had increased incidence of:
  - Wound infection
  - Return to operating room
  - Delayed healing
- Fissure healing rate was equivalent with both techniques

# Results

**Table 2:**

	<b>Open (n = 88 pts)</b>	<b>Closed (n = 165 pts)</b>	<i>p</i> -value	Odds ratio
<b>Infection</b>	13 (14.8%)	4 (2.4%)	0.0002	0.141
<b>Delayed Healing</b>	27 (30.7%)	21 (12.6%)	0.0005	0.329
<b>Re-operation</b>	8 (9.1%)	3 (1.8%)	0.0183	0.185
<b>Fissure Healed</b>	82 (93.2%)	163 (98.8%)	0.0686	N/A

A p-value of <0.05 was considered statistically significant

# Conclusions

- Open and closed sphincterotomy have equivalent fissure healing rates, as has been shown previously<sup>1-4</sup>
- In our study, the open technique appears to have a significantly higher wound complication rate, including higher incidence of surgical site infection and delayed wound healing
- When technically feasible, closed sphincterotomy appears to be the preferred technique

# Discussion

- In general, our wound complication rates are higher than previously reported<sup>5-6</sup>
- Retrospective study
- Effect of wound complications on incontinence

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