



RAMBAM HEALTH CARE CAMPUS  
DEPT. OF GENERAL SURGERY  
COLORECTAL UNIT

Surgical Treatment of  
fissure in ano

*Lateral Sphincterotomy*

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# Anal Fissure

- A tear in the epithelial lining of the anal canal Is the single most common anorectal problem

- classification:

**Acute** :resolve in 4-6 weeks

**Chronic** : more than 6 weeks

- Presentation:

**Typical** : posterior midline (90%)

anterior midline (10%)

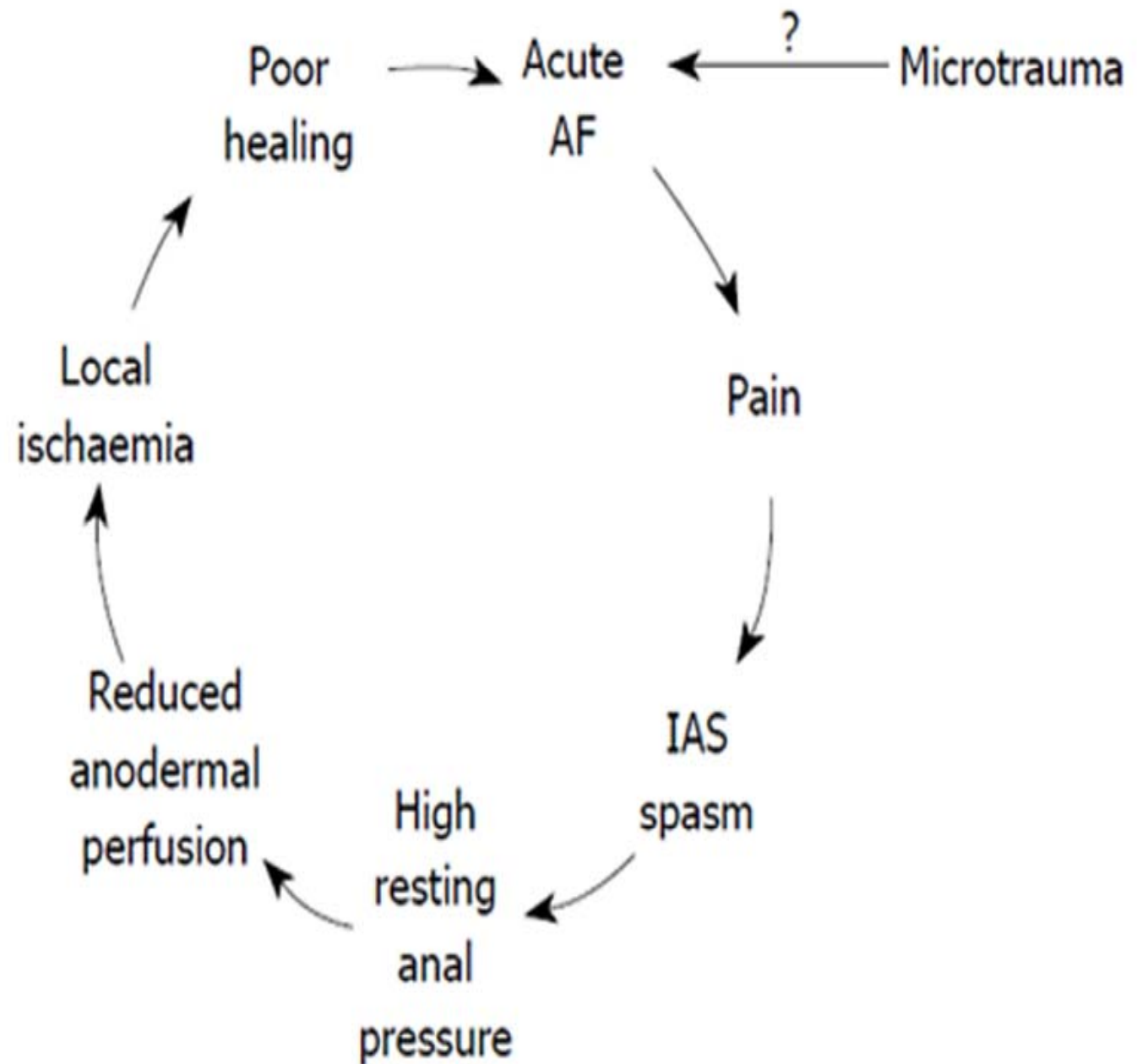
**Atypical** : anywhere in the anal canal  
(associated with: Crohn, HIV, TB, cancer)



# Anal Fissure

- Pathogenesis

1. Anal trauma
2. Posterior midline :anorectal angle
3. Relative ischemia of posterior midline anoderm
4. Hyper tonicity of sphincter may aggravate the relative ischemia



# Anal Fissure treatment

- Medical, (non operative)
- surgical

# Anal Fissure treatment

- Non operative treatment:

1. Diet based in fibers can heal 87% of the fissures
2. Warm sitz baths and bran
3. Hydrocortisone and lidocaine have been advocated as local topical therapies for acute fissures
4. Nitroglycerin or isosorbide dinitrate, theoretically producing “reversible chemical sphincterotomy”
5. The topical application of diltiazem (2%) produces fewer side effects and similar efficacy as nitroglycerin

Fissure healing can be anticipated in about 70% of patients with chronic fissures using nitroglycerin or diltiazem.

# Anal Fissure treatment

- Non operative treatment:

## 6. Botulinum toxin type A

Neuroparalytic protein synthesized by clostridium botulinum  
Inhibit release of acetyl-choline at neuromuscular junction  
1994 :first report

Relaxation of the internal anal sphincter is thought to promote increased blood flow to the affected perianal skin, allowing the fissure to heal.

The literature documents a variable success rate, but 60% to 80% has been achieved

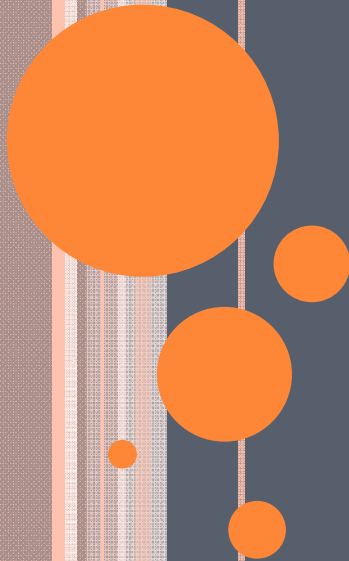
Relaxation of the muscle occurs within days for 2-4 months

The goal is allow fissure to heal



# Anal Fissure treatment

## Operative treatment:



# Anal Fissure treatment

- operative treatment:

Procedures :

- Anal dilatation (the Lord procedure), no longer favored
- Pneumatic balloon dilatation
- **Anal sphincterotomy**

- \* Posterior internal sphincterotomy

- \* lateral internal sphincterotomy

Open

Closed

- Fissurectomy
- Anorectal advancement flap

IDENTIFYING THE BEST THERAPY FOR CHRONIC ANAL  
FISSURE, MARIUSZ H MADALINSKI  
WORLD J GASTROINTEST PHARMACOL THER. 2011  
APRIL 6; 2(2): 9–16.

**Conclusion:**

1- In the quest for optimal therapy for CAF, It is recognized that LIS is a superior approach but not without hazard and the search for other, low risk therapeutic options continues.

2- The author is convinced that a greater understanding and recognition of benign anal disorders by the GP would facilitate the consideration of CS at an early stage, with improved outcomes for the patient

OPERATIVE PROCEDURES FOR FISSURE IN ANO.  
DEPARTMENT OF GENERAL SURGERY, NORTHERN GENERAL  
HOSPITAL, COCHRANE DATABASE SYST .REV. 2011 NOV 9

**OBJECTIVES:**

To determine the best technique for fissure surgery

**Results:**

1- Manual Anal stretch has a higher risk of fissure persistence than internal sphincterotomy and also a significantly higher risk of minor incontinence than sphincterotomy

2- The combined analyses of open versus closed partial lateral internal sphincterotomy show little difference between the two procedures both in fissure persistence and risk of incontinence

3- For those patients requiring surgery for anal fissure, open and closed partial lateral internal sphincterotomy appear to be equally efficacious

# Anal Fissure treatment

- Operative treatment:

**Anal sphincterotomy:**

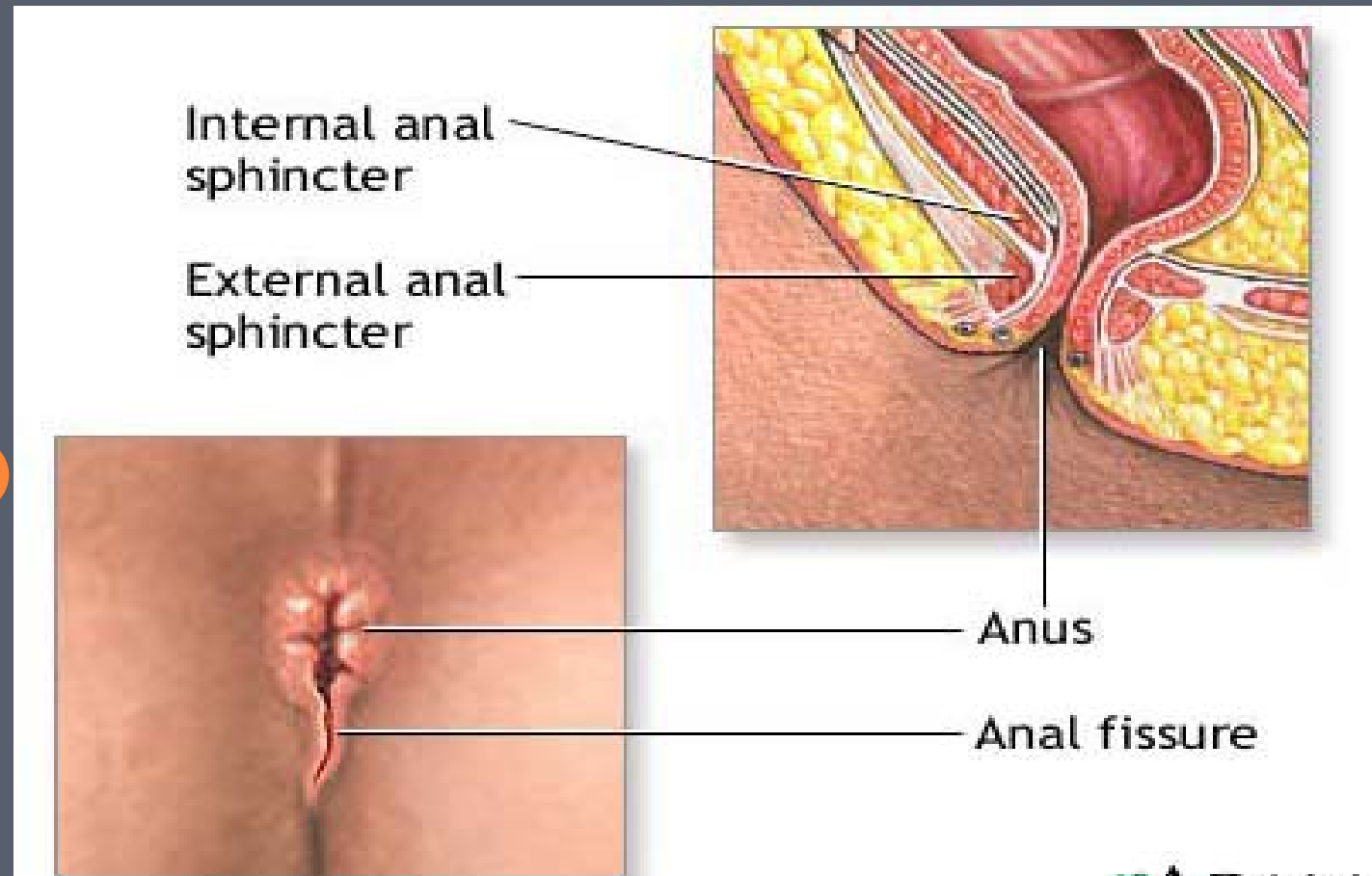
- Posterior internal sphincterotomy.:

1. Eisenhammer (1951)

# Anal Fissure treatment

- Operative treatment:

Posterior Internal Sphincterotomy ( LIS)



# Anal Fissure treatment

- Operative treatment:

## Anal sphincterotomy:

- Posterior internal sphincterotomy.:

1. Eisenhammer (1951)
2. Key hole deformation
3. Soiling in 30%-40 %



# Anal Fissure treatment

- Operative treatment:

**Anal sphincterotomy:**

- lateral internal sphincterotomy.

1. Revised by Eisenhammer (1959)
2. Modified by Notaras (1969)

# Anal Fissure treatment

- Operative treatment:

## Anal sphincterotomy:

- lateral internal sphincterotomy.

1. Revised by Eisenhammer (1959)
2. Modified by Notaras (1969)
3. Open/closed technique
4. Division : to the dentate line (traditional)  
to the apex of the fissure (conservative )

**Fine balance between minimizing incontinence  
and maximizing healing**

# Anal Fissure treatment

- Operative treatment:

## **Anal sphincterotomy:**

- lateral internal sphincterotomy.

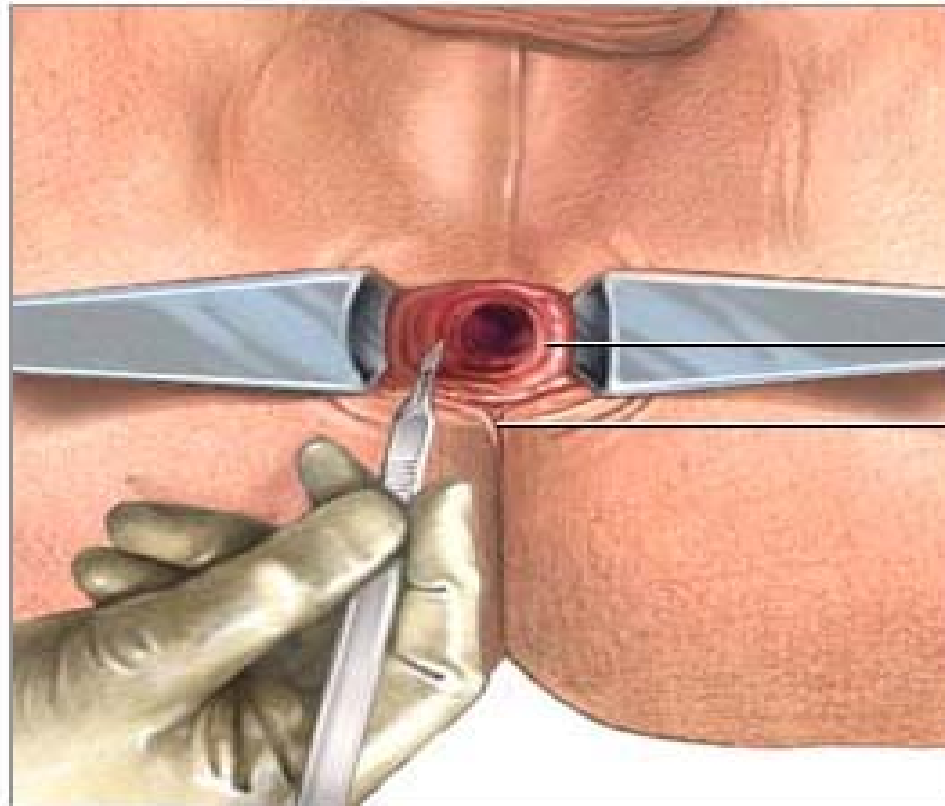
The open technique:

1. Incision across the intersphincteric groove
2. Separating the internal sphincter from the anal mucosa by blunt dissection.
3. Dividing the internal sphincter using scissors.

# Anal Fissure treatment

- Operative treatment:

Lateral Internal Sphincterotomy ( LIS)



Anus

Anal  
fissure

# Anal Fissure treatment

- Operative treatment:

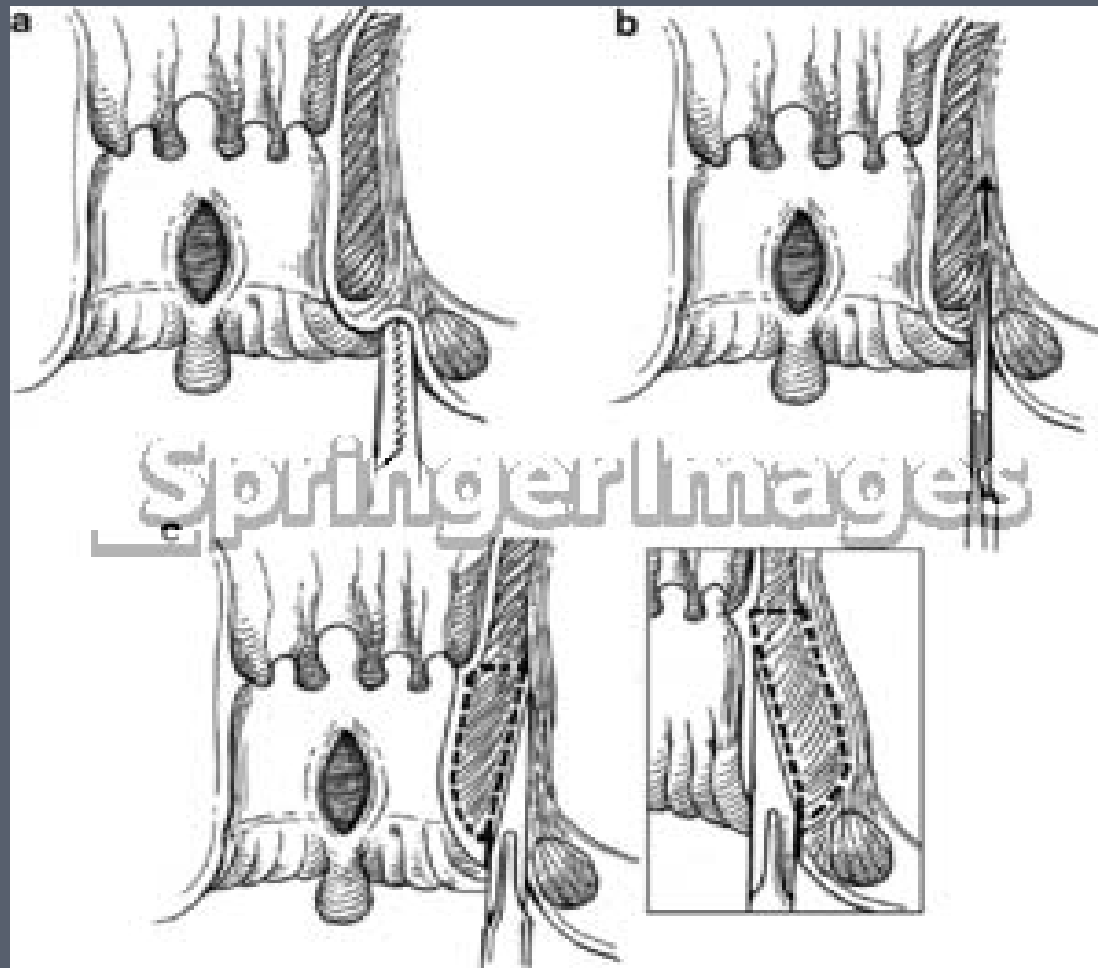
## **Anal sphincterotomy:**

- lateral internal sphincterotomy.

The closed technique:

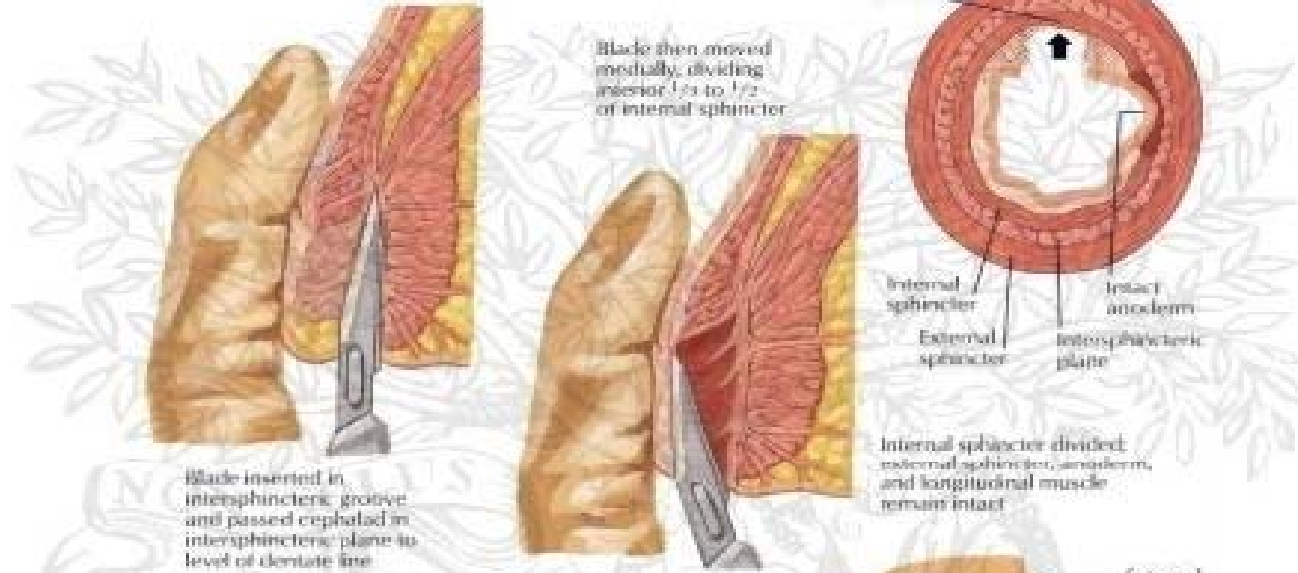
1. Subcutaneous technique
2. A small incision at the intersphincteric groove
3. Inserting a scalpel with the blade parallel to the internal sphincter
4. Advancing it along the intersphincteric groove
5. Rotating the scalpel towards the internal sphincter and dividing it.

**WHILE THE INDEX FINGER OF ONE HAND IS INSERTED INTO THE ANAL CANAL AND BEING PLACED ON THE DENTATE LINE, THE OTHER HAND MANIPULATES THE SCALPEL AND CUTS THE INTERNAL SPHINCTER WITH A SINGLE MOVEMENT**

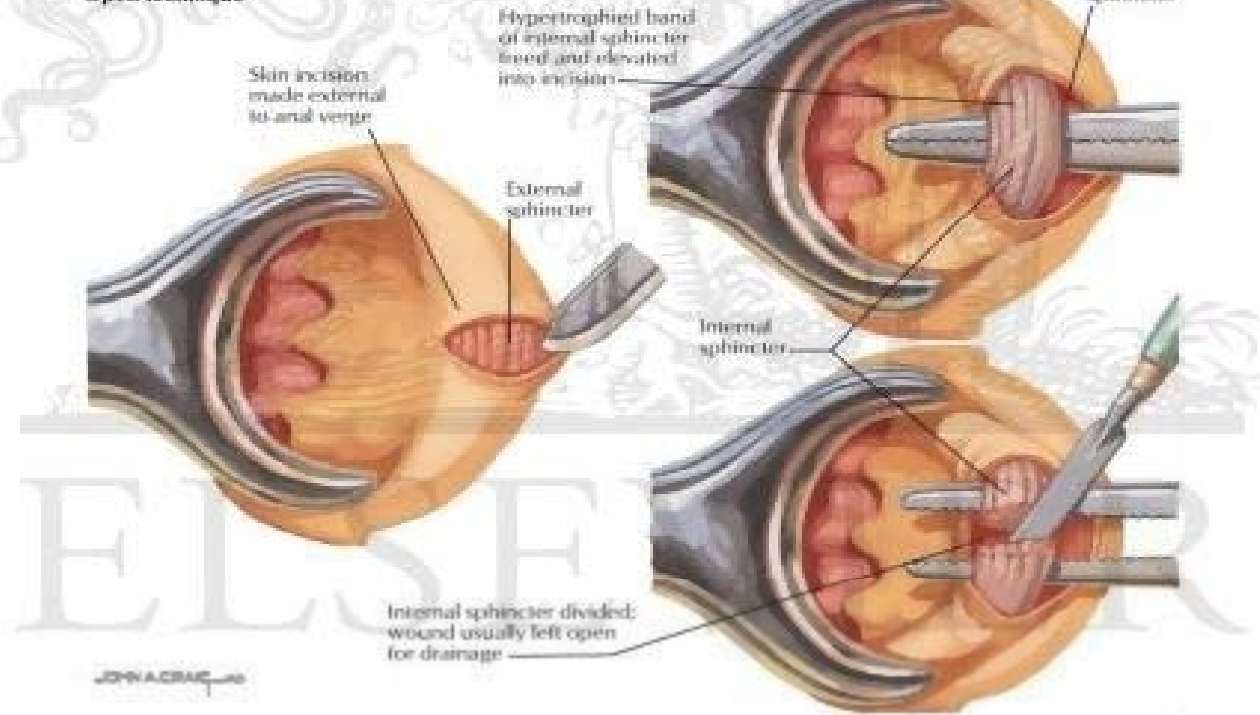


## Lateral Internal Sphincterotomy

### Closed technique



### Open technique



# Anal Fissure treatment

- Operative treatment:

**Anal sphincterotomy:**

- Results

Open vs. closed

*OPEN VS.. CLOSED LATERAL INTERNAL SPHINCTEROTOMY FOR  
IDIOPATHIC FISSURE-IN-ANO: A PROSPECTIVE, RANDOMIZED,  
CONTROLLED TRIAL.  
(WILEY M. DIS COLON RECTUS. 2004 JUN)*

**Results:**

1- healing rate for chronic anal fissure were the same.

2- Incontinence after internal sphincterotomy is not insignificant. The technique (closed vs.. open) does not seem to influence incontinence rates.

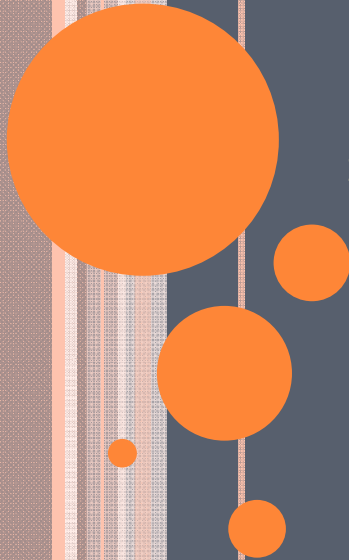
# LATERAL INTERNAL SPHINCTEROTOMY

## Complications:

1- Minor fecal incontinence and difficulty controlling flatulence are common side effects.

Persistent minor fecal incontinence has been reported in 1.2% to 3.5% of patients

2- Hemorrhage, more often with the open technique, may require suture ligation.



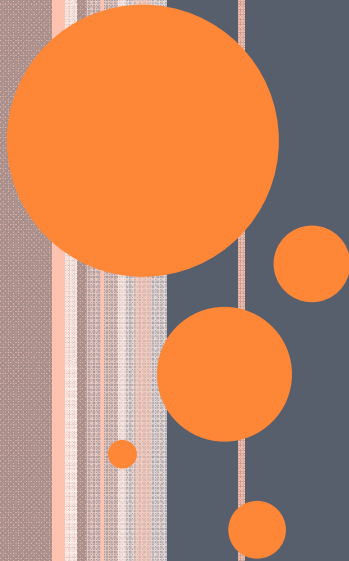
# LATERAL INTERNAL SPHINCTEROTOMY

## Complications:

3- Perianal abscess occurs in about 1% of closed sphincterotomies

In association with anal fistula caused by a breach of the anal mucosa by the scalpel. (closed technique)

Incision and drainage of the abscess and fistulotomy are required.



## SUMMARY:

1- LIS is the most efficient surgical method to treat CAF

2- healing rates are > 90%

3- Persistent minor fecal incontinence has been reported in 1.2% to 3.5% of patients

4- no difference between open and closed technique, depending on surgeon preference

5- posterior internal sphincterotomy is associated with keyhole deformity

6-

# Thank you

