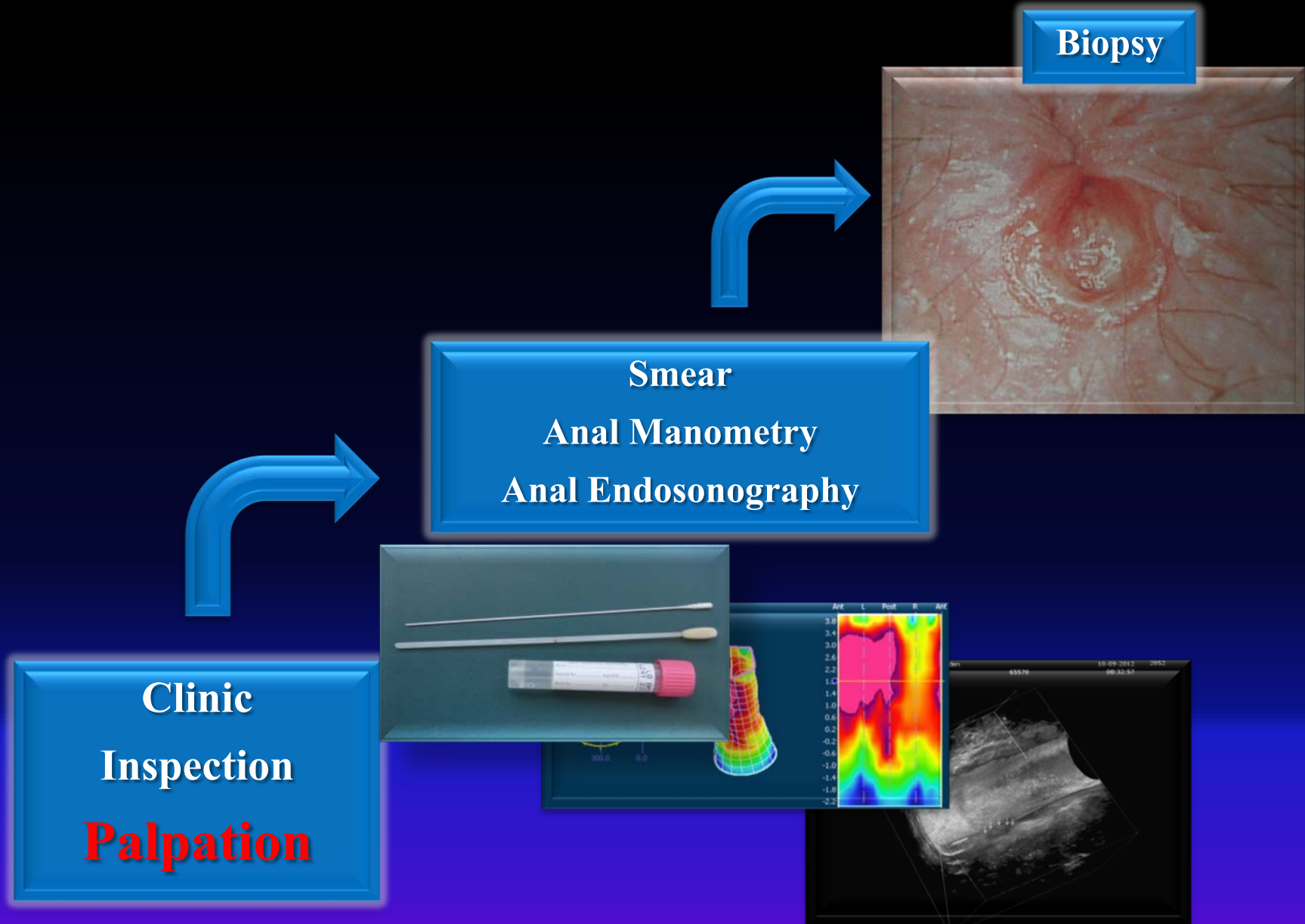


Anal Fissure – Practical Approach from the Non- Surgeon view

**Andreas Paul Müller,
Gastrozentrum Hirslanden
andreas.mueller@gastrozentrum.ch**

Stepwise Diagnosis of chron. anal Fissure



Anal Fissure – Treatment:

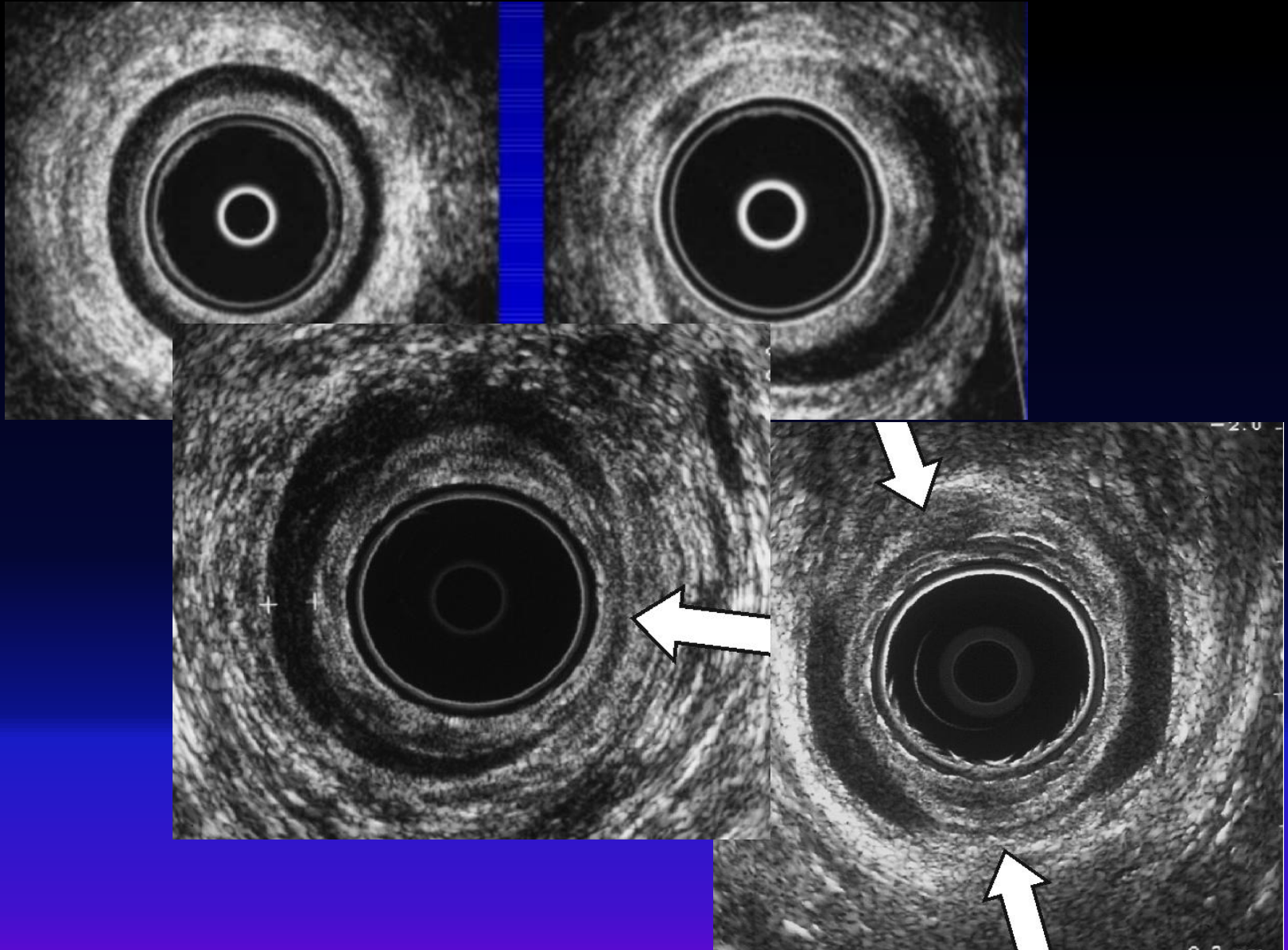
What are the goals?

- Resolve the pain
- Heal the fissure
- Maintain continence
- Keep the fissure healed

Manual Dilatation of the Anus

- Four fingers
- Significant incontinence and recurrence in some series
- Fragmentation of IAS seen on anal ultrasound

Surgical Fissurectomie



Delayed fecal incontinence following surgery for anal fissure

Avi Levin • Matan J. Cohen • Victoria Mindrul •
Joseph Lysy

2011

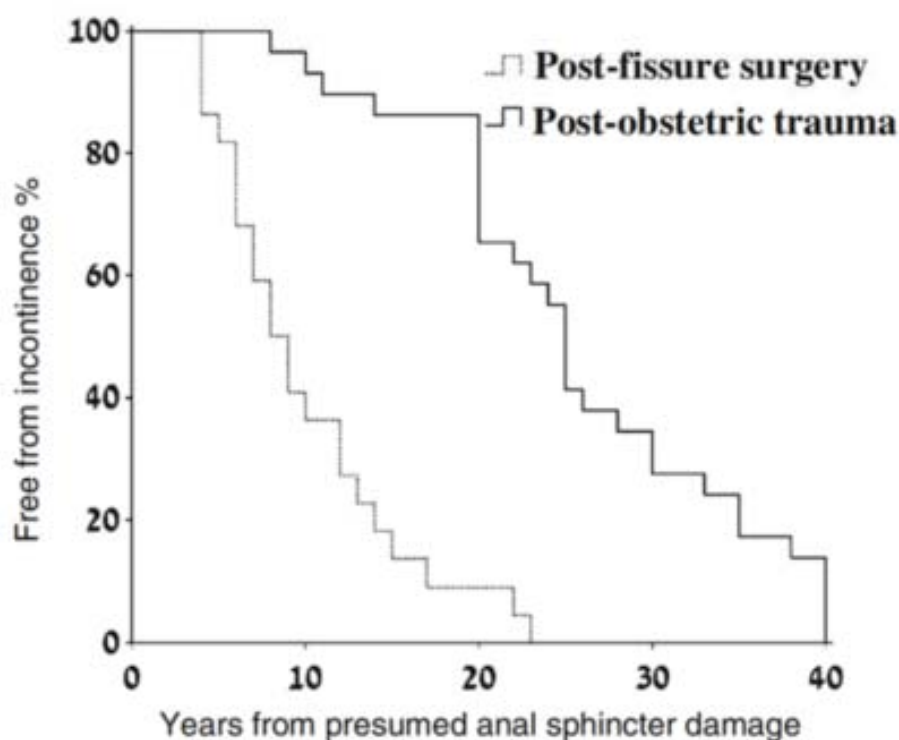
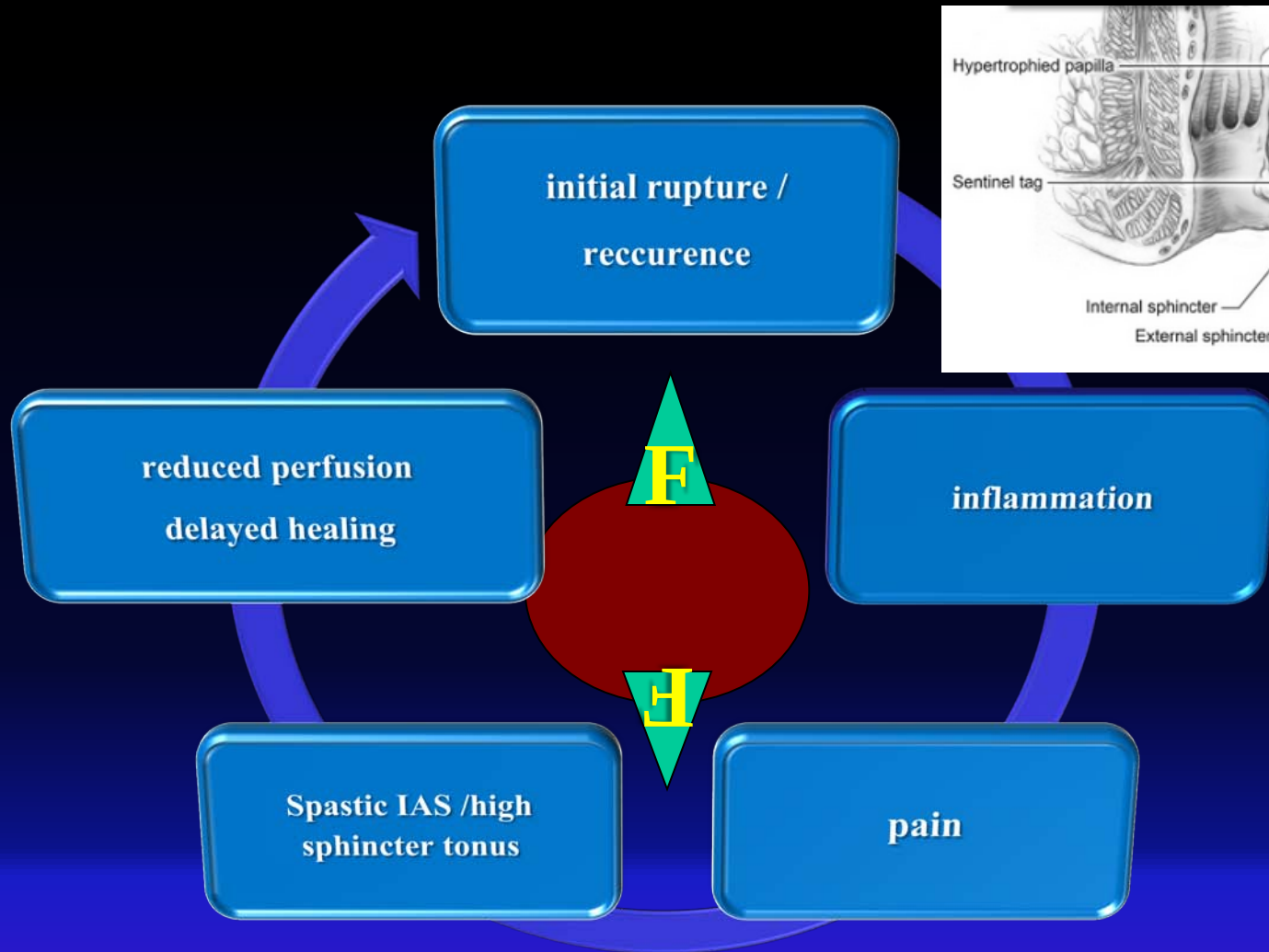


Fig. 3 Time interval between anal sphincter damage and incontinence: fissure surgery and obstetric trauma

Conclusions Fecal incontinence may present as a late complication of anal fissure surgery. Incontinence may be associated with other cofactors accumulating over time or, more likely, anal fissure surgery may accelerate the physiologic age-related weakening of the anal sphincter mechanism. Candidates for anal fissure surgery should be informed regarding this possible outcome.

Pathogenesis of Anal Fissure



Does low-pressure chronic anal fissure have a different pathophysiology?
Lindsey I. et al. Colorect Dis 2011;13:1014-8

Pathophysiology of Fissure

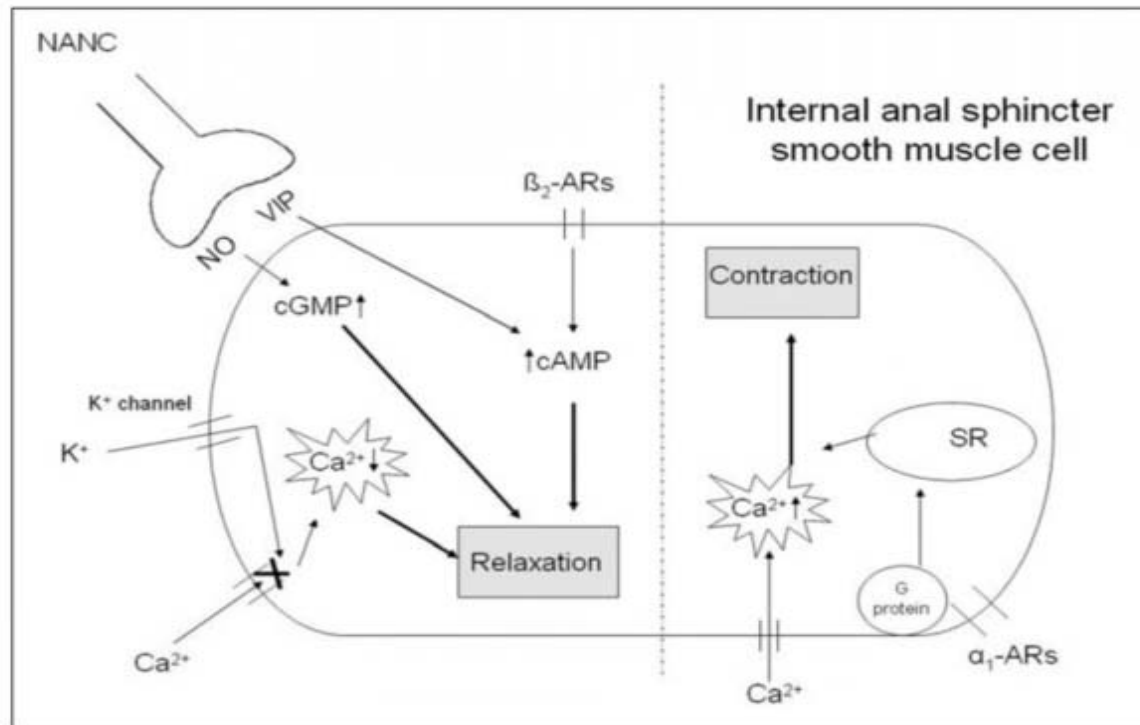
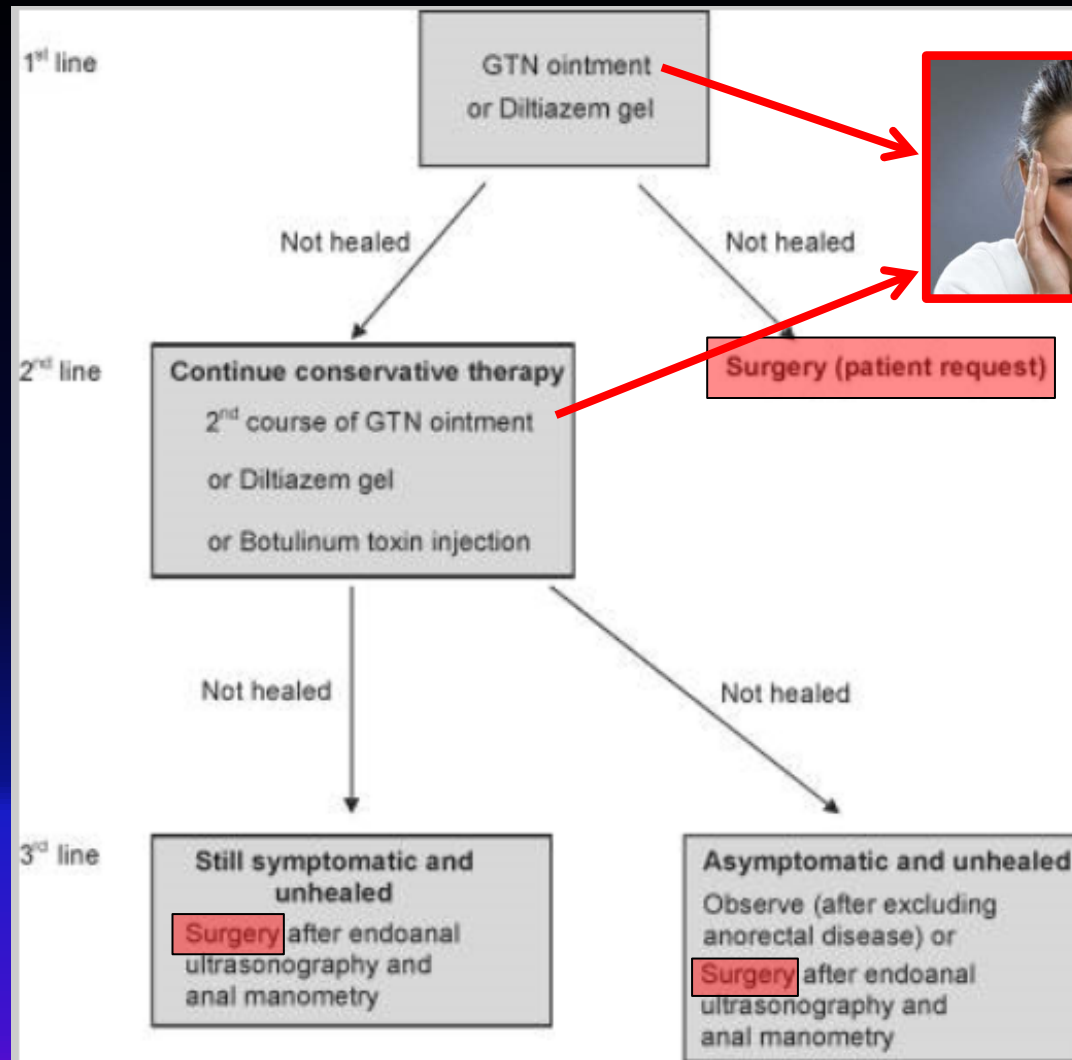


Fig. 1 Control of internal sphincter smooth muscle cell. Contraction of the smooth muscle cell within the internal anal sphincter is dependent upon increased intracellular calcium. This is either by influx through calcium channels or via stimulation of α_1 -adrenoceptors. Relaxation of these cells is mediated through directly decreasing intracellular calcium concentration as well as increasing cGMP and cAMP. Influx of potassium through K^+ channels hyperpolarises the cell membrane and decreases calcium entry. Activation of β_2 -adrenoceptors increases cAMP, returning intracellular Ca^{2+} to the sarcoplasmic reticulum. VIP has a similar mode of action. Nitric oxide increases cGMP, which results in muscle relaxation. NANC, non-adrenergic, non-cholinergic; α_2 -ARs, α_2 adrenoceptors; β -ARs, β adrenoceptors; NO, nitric oxide; VIP, vasoactive intestinal polypeptide; cGMP, cyclic guanosine monophosphate; cAMP, cyclic adenosine monophosphate; SR, sarcoplasmic reticulum

USA: Proctologist: Surgeons!



Collins 2007

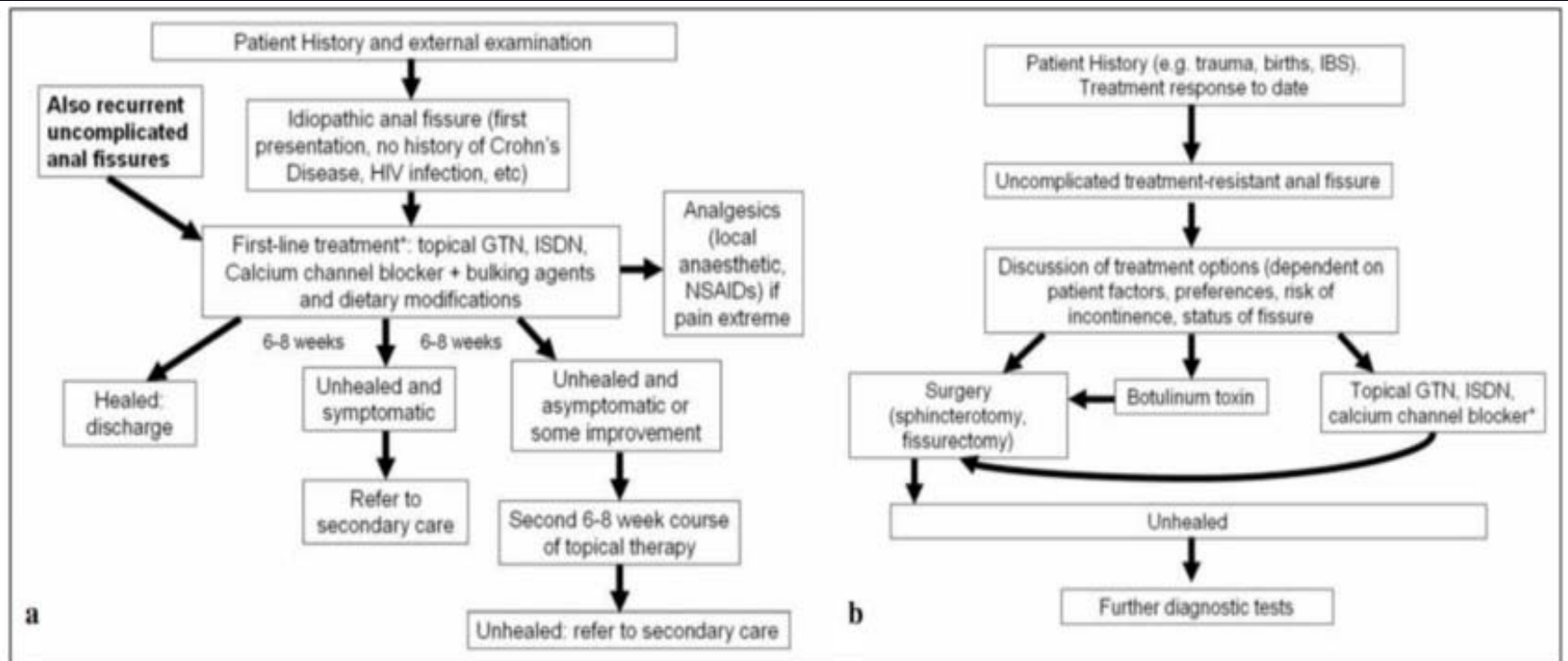
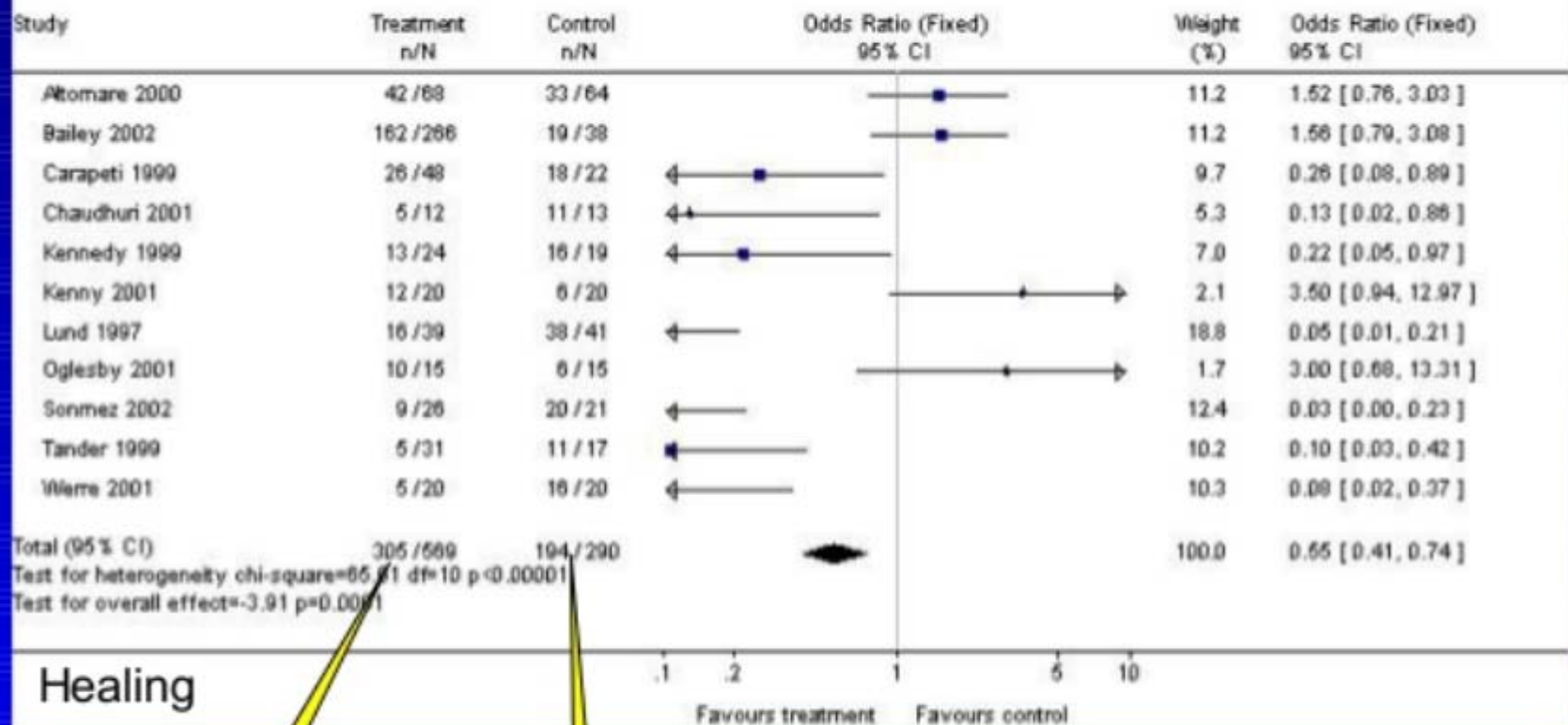


Fig. 2a, b Algorithm for the treatment of anal fissure (taken from [184]). **a** Initial presentation (primary care). **b** Treatment-resistant anal fissures (secondary care). *According to licensing, availability, costs and contraindications. GTN, glyceryl trinitrate; ISDN, isosorbide dinitrate; NSAIDs, nonsteroidal anti-inflammatory drugs; IBS, irritable bowel syndrome

Anal Fissure - GTN vs Placebo

Share

Review: Non surgical therapy for anal fissure
Comparison: 01 GTN versus Placebo
Outcome: 01 NON - Healing of fissure (persistance or recurrence)



47%

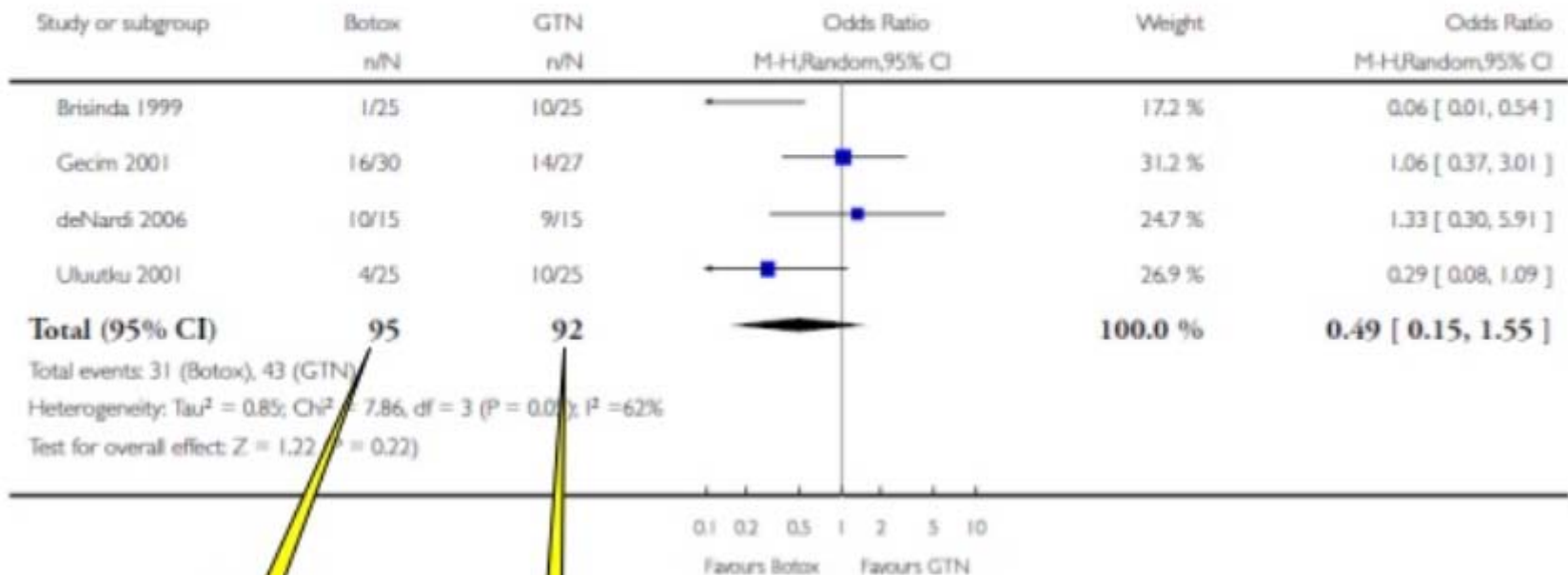
33%

RL Nelson: Cochrane review 2008

Anal Fissure

Botulinum toxin vs GTN

Healing



67%

53%

RL Nelson: Cochrane review 2008

Usefulness of manometry to select patients with anal fissure for controlled anal dilatation

2010

C. Santander, J. P. Gisbert, R. Moreno-Otero, A. G. McNicholl and J. Maté

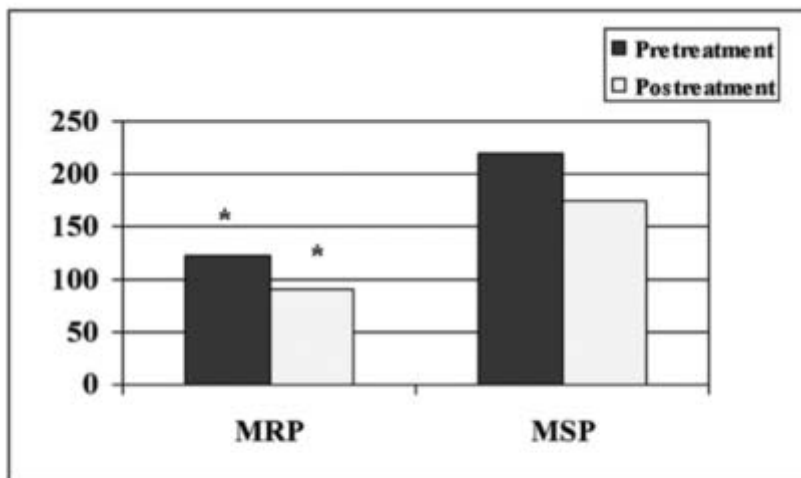


Fig. 2. Maximum resting pressure (MRP, mmHg) and maximum squeeze pressure (MSP, mmHg) pre-controlled anal dilation and 1 month post-controlled anal dilation in patients with chronic anal fissure and internal anal sphincter spasm.

Conclusions: Anal healing of chronic anal fissure and a significant decrease in maximum resting pressure recorded by manometry confirms the success of this procedure. The manometric evaluation of the maximum resting pressure is useful in the selection of chronic anal fissure patients for controlled anal dilatation. The efficacy of dilatation to treat chronic anal fissure in patients with raised anal sphincter pressure was high and complications were rare.

Anal Fissure – Controlled dilatation (vs lateral sphincterotomy)

Ref.	Study details	Results
Sohn et al 1992	Pneumatic dilatation with 40 mm balloon	94 % healed
Renzi et al 2009 Random. prospective	Pneumatic balloon dilation vs. lateral sphincterotomy 53 pts.	Bd 83% vs Sph.92% Healing rate
Yucel et al 2009 Random. prospective	Speculum 4.8cm vs. lateral sphincterotomy 24 pts.	Spec. 90 % vs. Sph. 85% Healing rate

Clinical, Manometric, and Ultrasonographic Results of Pneumatic Balloon Dilatation vs. Lateral Internal Sphincterotomy for Chronic Anal Fissure: A Prospective, Randomized, Controlled Trial

2007

Adolfo Renzi, M.D., Ph.D.,¹ • Domenico Izzo, M.D.,¹ •
Giandomenico Di Sarno, M.D.,¹ • Pasquale Talento, M.D.,²
Francesco Torelli, M.D., Ph.D.,³ • Giuseppe Izzo, M.D.,³ •
Natale Di Martino, M.D.³

CONCLUSIONS: As lateral internal sphincterotomy, pneumatic balloon dilatation grants a high anal fissure-healing rate but with a statistically significant reduction in postoperative anal incontinence.

FIGURE 1. Preoperative and postoperative mean resting pressure in pneumatic balloon dilatation (PBD) and lateral internal sphincterotomy (LIS) groups.

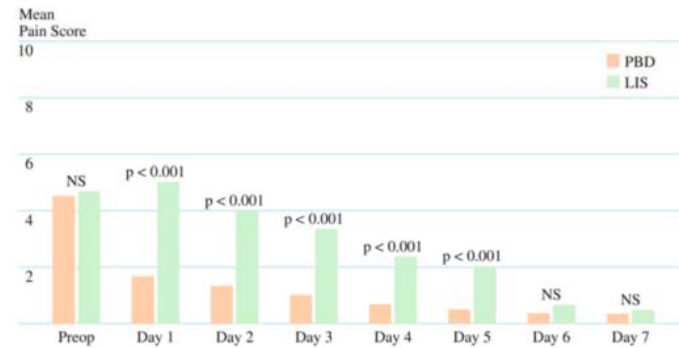
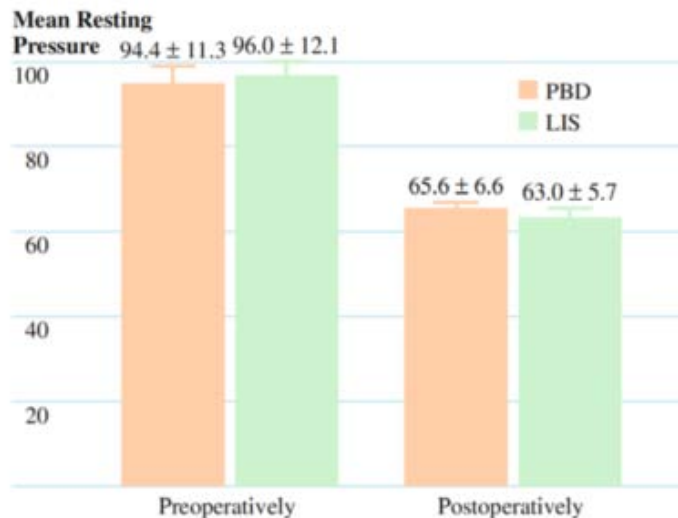
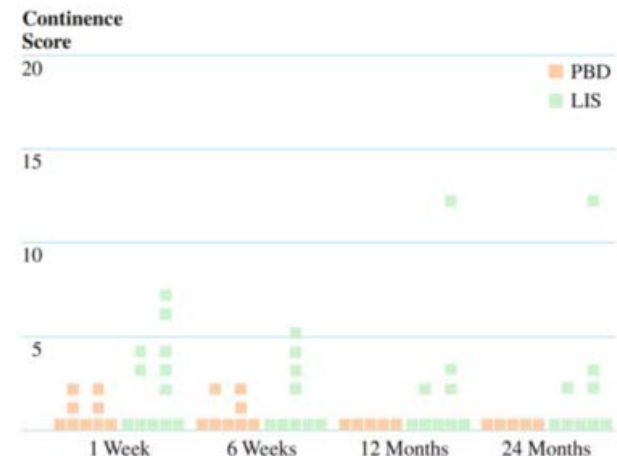


FIGURE 2. Evolution in postoperative mean pain score after pneumatic balloon dilatation (PBD) and lateral internal sphincterotomy (LIS).

FIGURE 3. Evolution in postoperative continence score after pneumatic balloon dilatation (PBD) and lateral internal sphincterotomy (LIS).



Usefulness of manometry to select patients with anal fissure for controlled anal dilatation

2010

C. Santander, J. P. Gisbert, R. Moreno-Otero, A. G. McNicholl and J. Maté

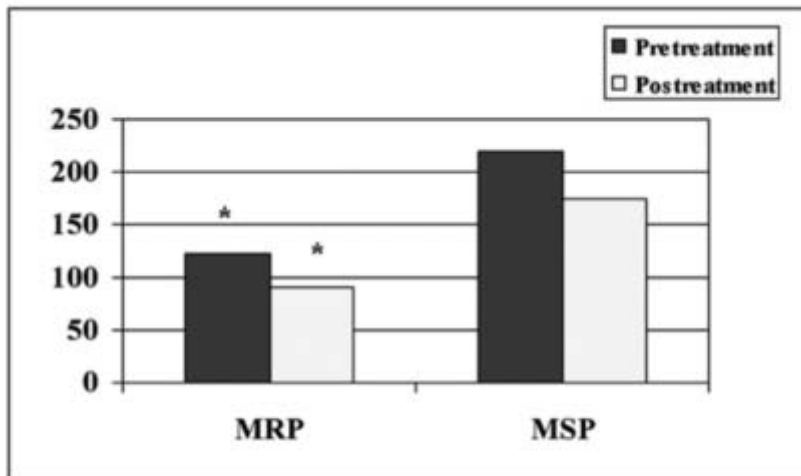
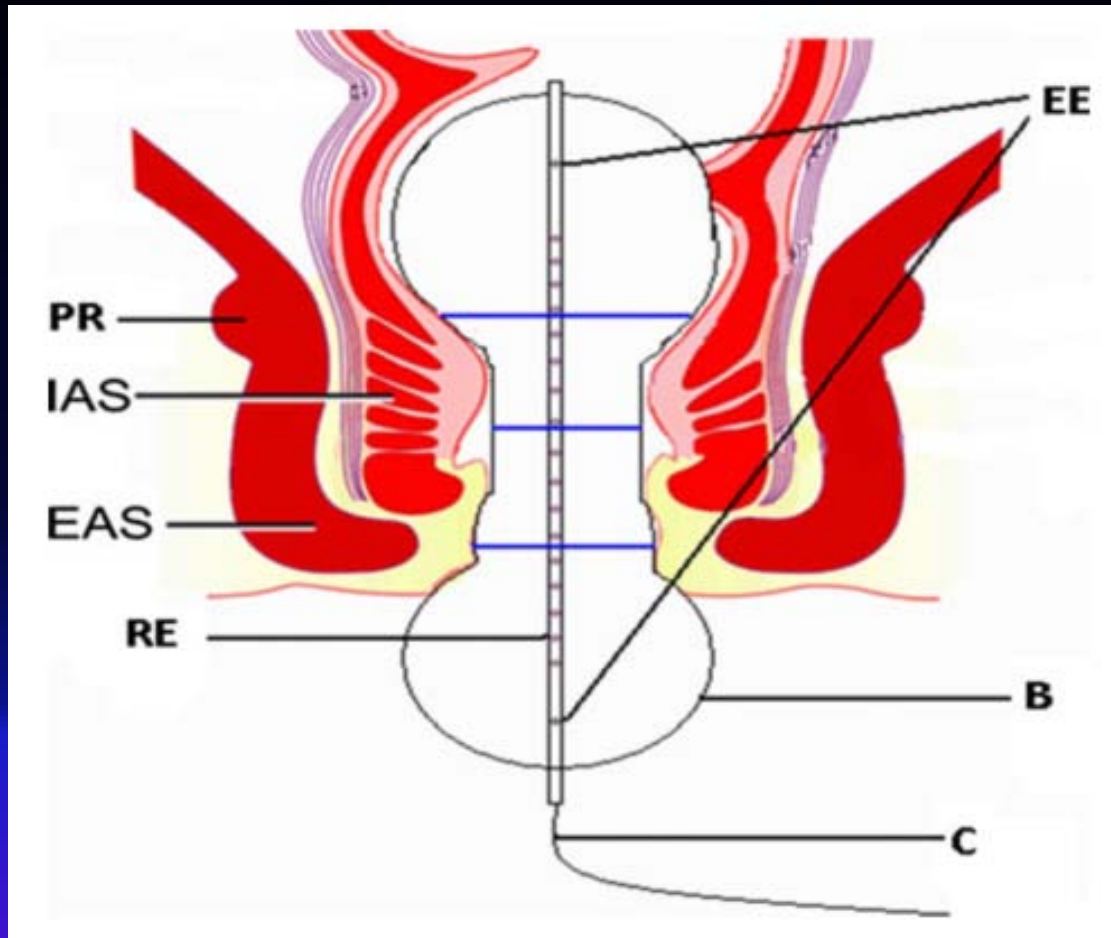


Fig. 2. Maximum resting pressure (MRP, mmHg) and maximum squeeze pressure (MSP, mmHg) pre-controlled anal dilation and 1 month post-controlled anal dilation in patients with chronic anal fissure and internal anal sphincter spasm.

Conclusions: Anal healing of chronic anal fissure and a significant decrease in maximum resting pressure recorded by manometry confirms the success of this procedure. The manometric evaluation of the maximum resting pressure is useful in the selection of chronic anal fissure patients for controlled anal dilatation. The efficacy of dilatation to treat chronic anal fissure in patients with raised anal sphincter pressure was high and complications were rare.

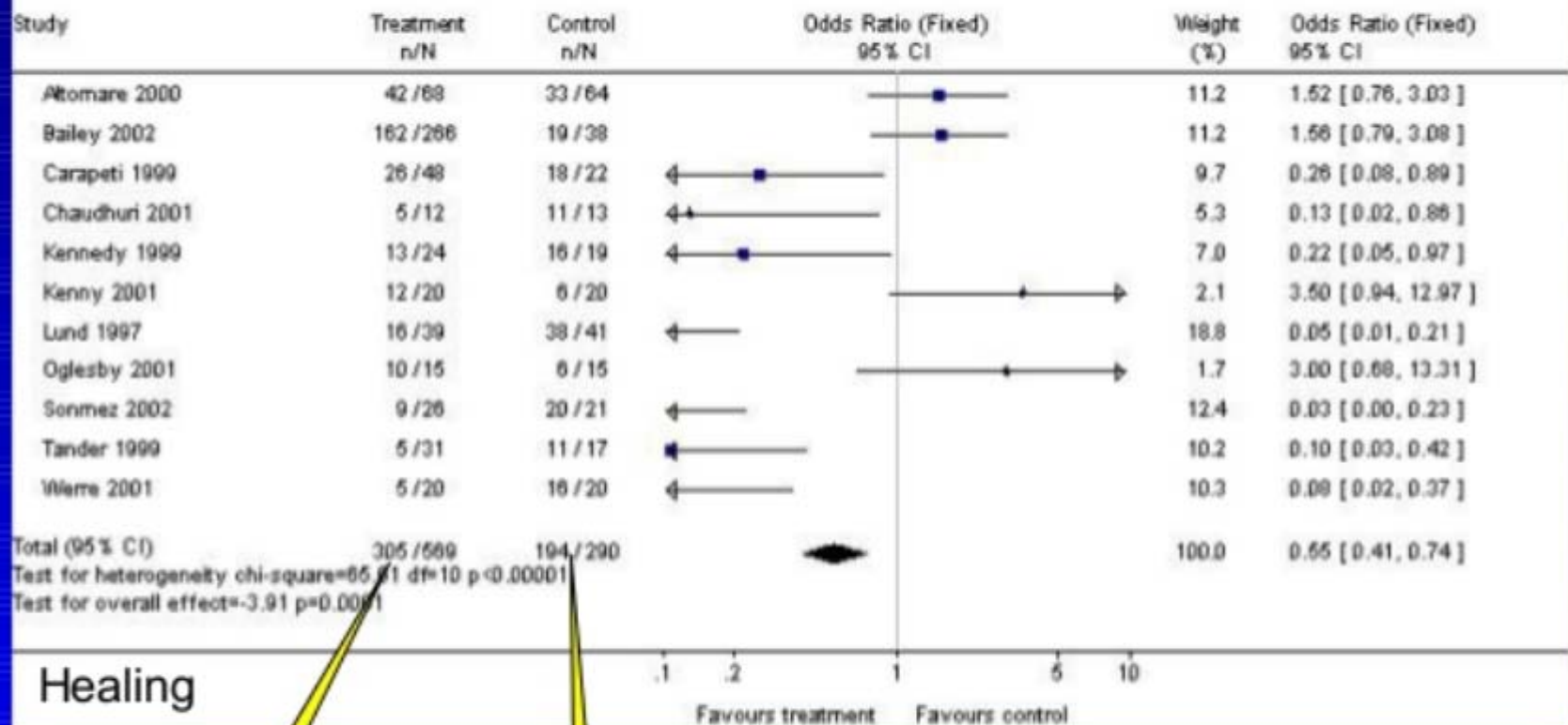
EndoFlip



Anal Fissure - GTN vs Placebo

Share

Review: Non surgical therapy for anal fissure
Comparison: 01 GTN versus Placebo
Outcome: 01 NON - Healing of fissure (persistance or recurrence)



47%

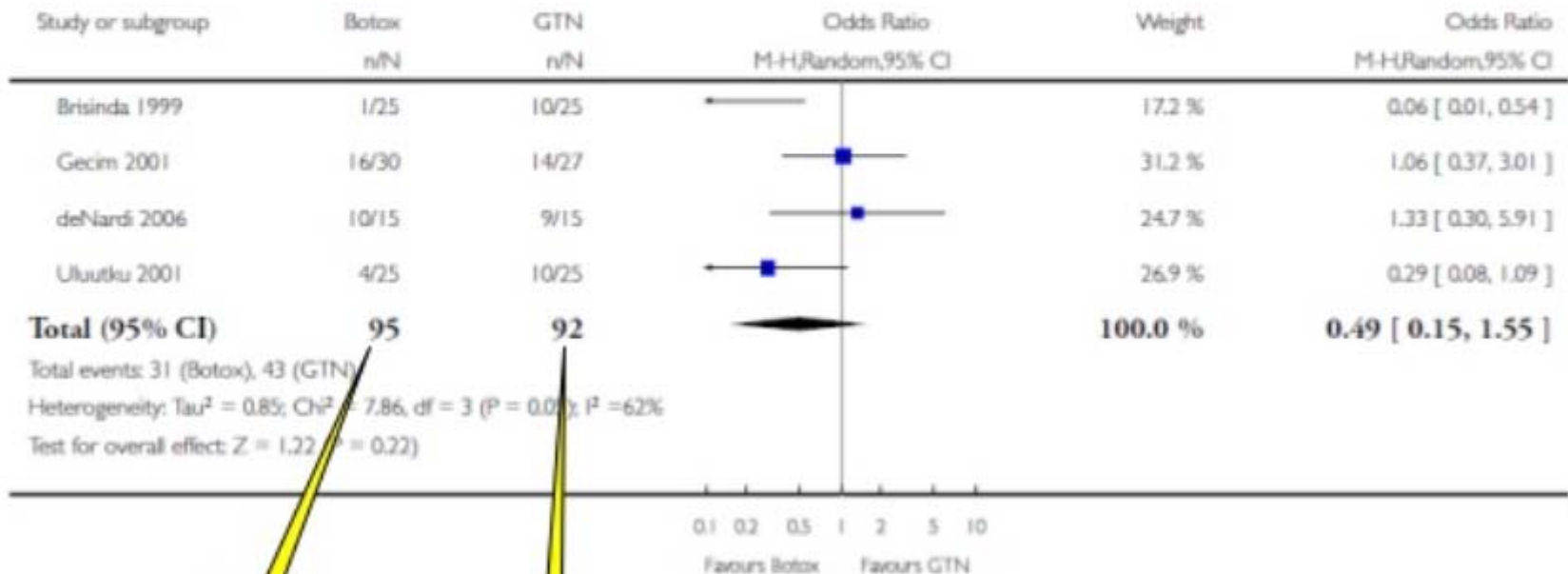
33%

RL Nelson: Cochrane review 2008

Anal Fissure

Botulinum toxin vs GTN

Healing



67%

53%

RL Nelson: Cochrane review 2008

Stepwise therapy of chronic anal fissure



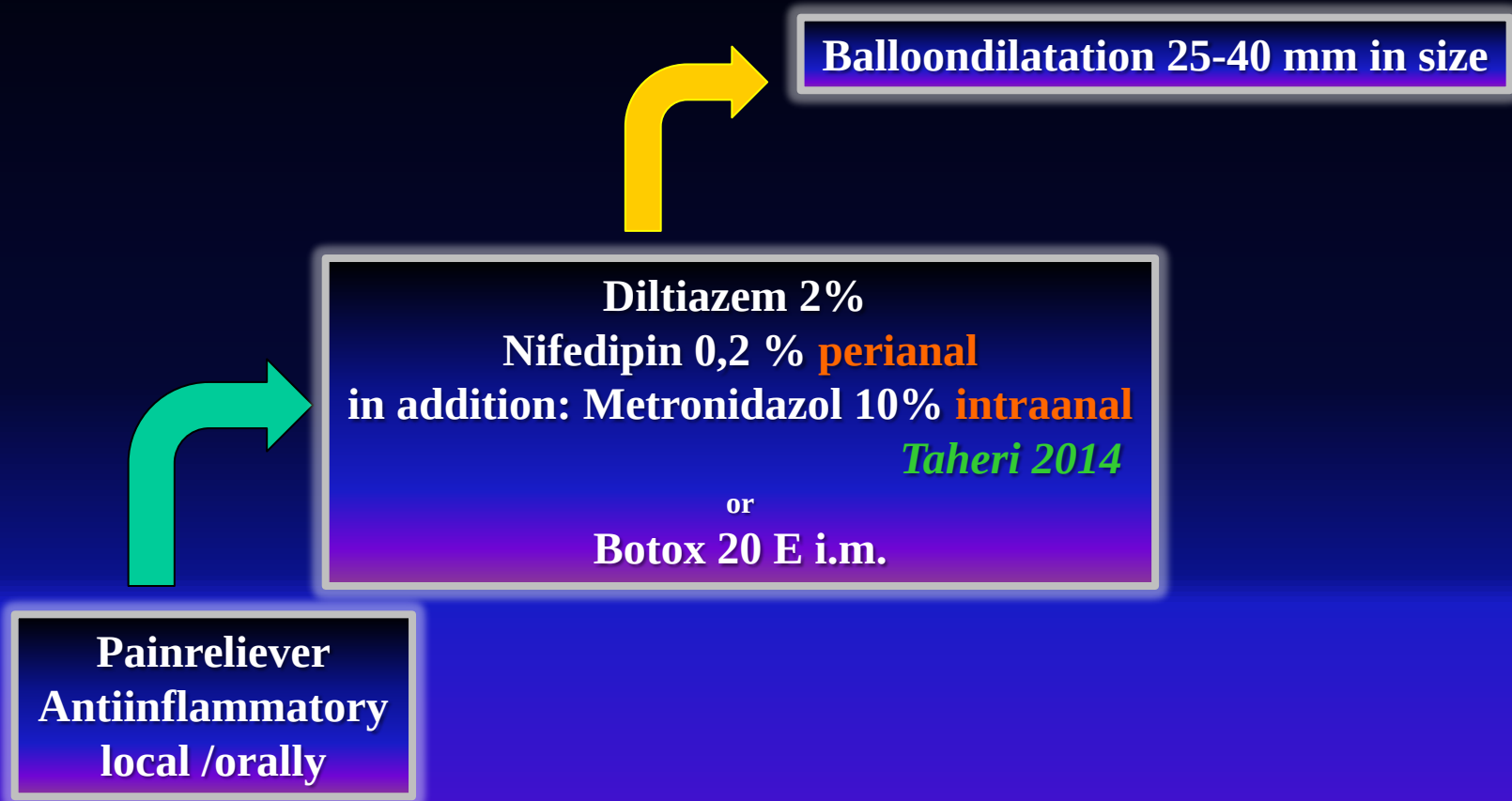
Painreliever
Antiinflammatory
local /orally

Diltiazem 2%
Nifedipin 0,2 % perianal
in addition: **Metronidazol 10% intraanal**

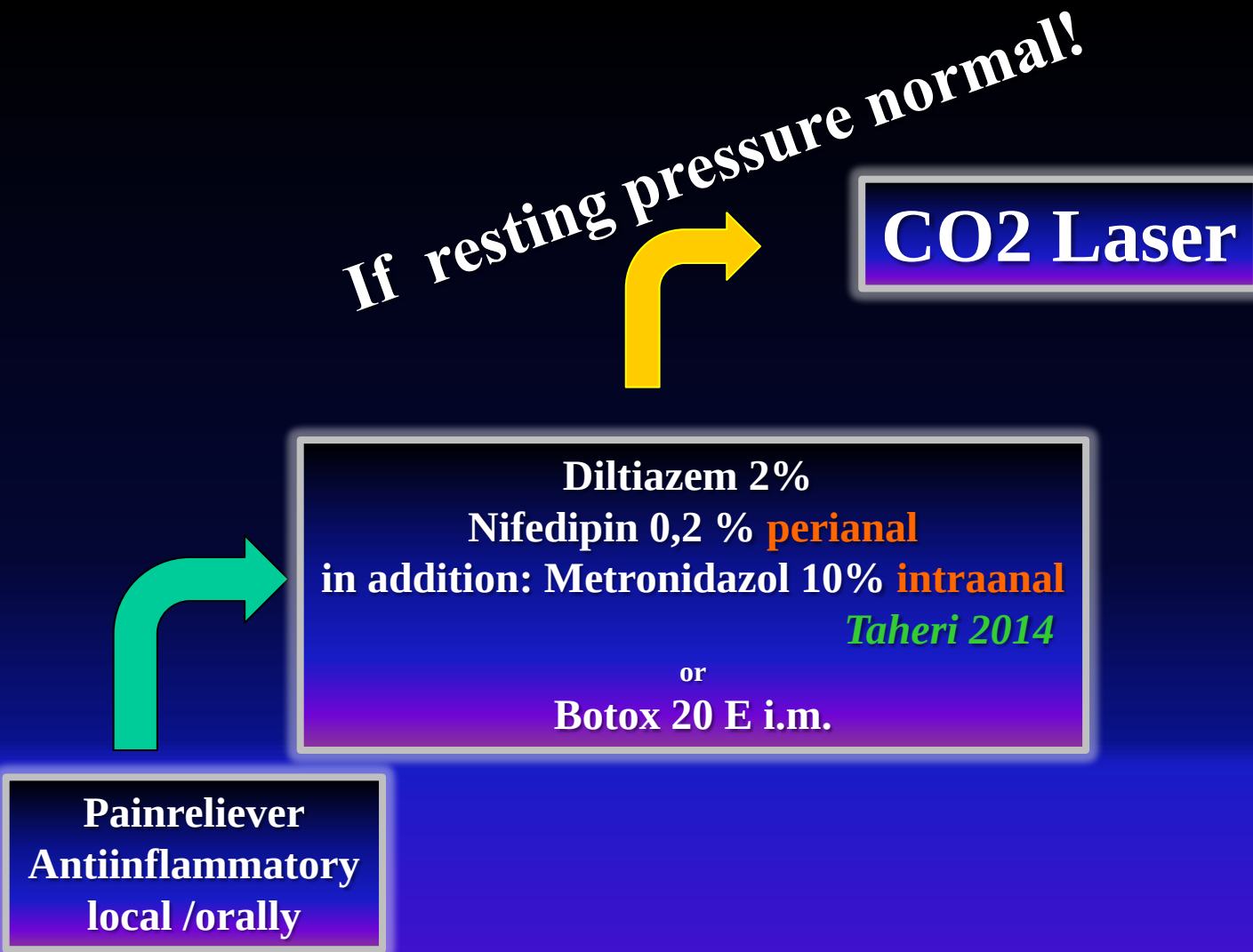
Botox 20 E

Alternatives:
L-Arginine, topical *Griffin 2002*
Potassium channel openers, topical *Muthukumarassamy 2005*
Alpha-1-adrenoceptor blockers
Phosphodiesterase-5 inhibitors
Angiotensin-converting enzyme inhibitors, topical *Khaikin 2007*

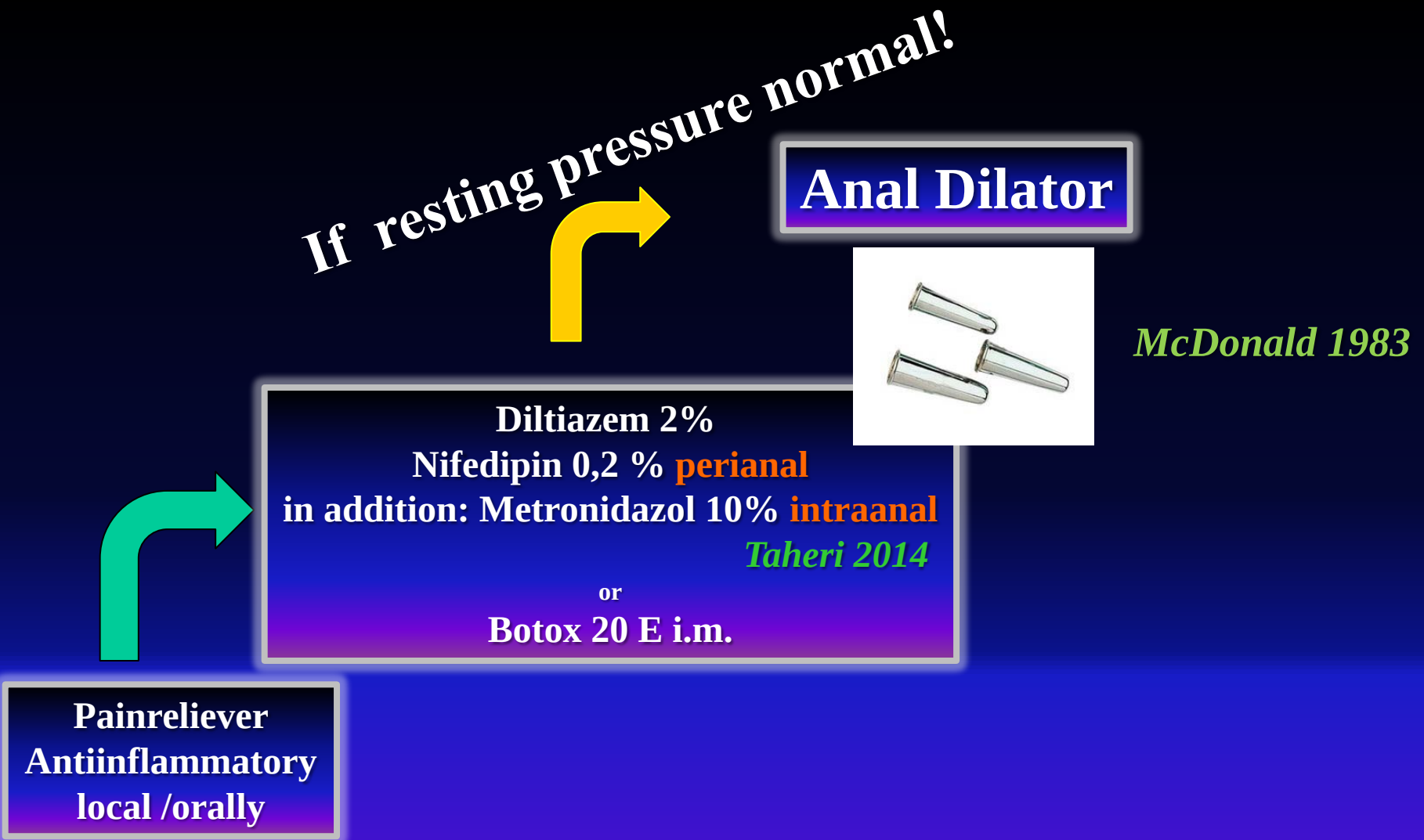
Stepwise therapy of chronic anal fissure



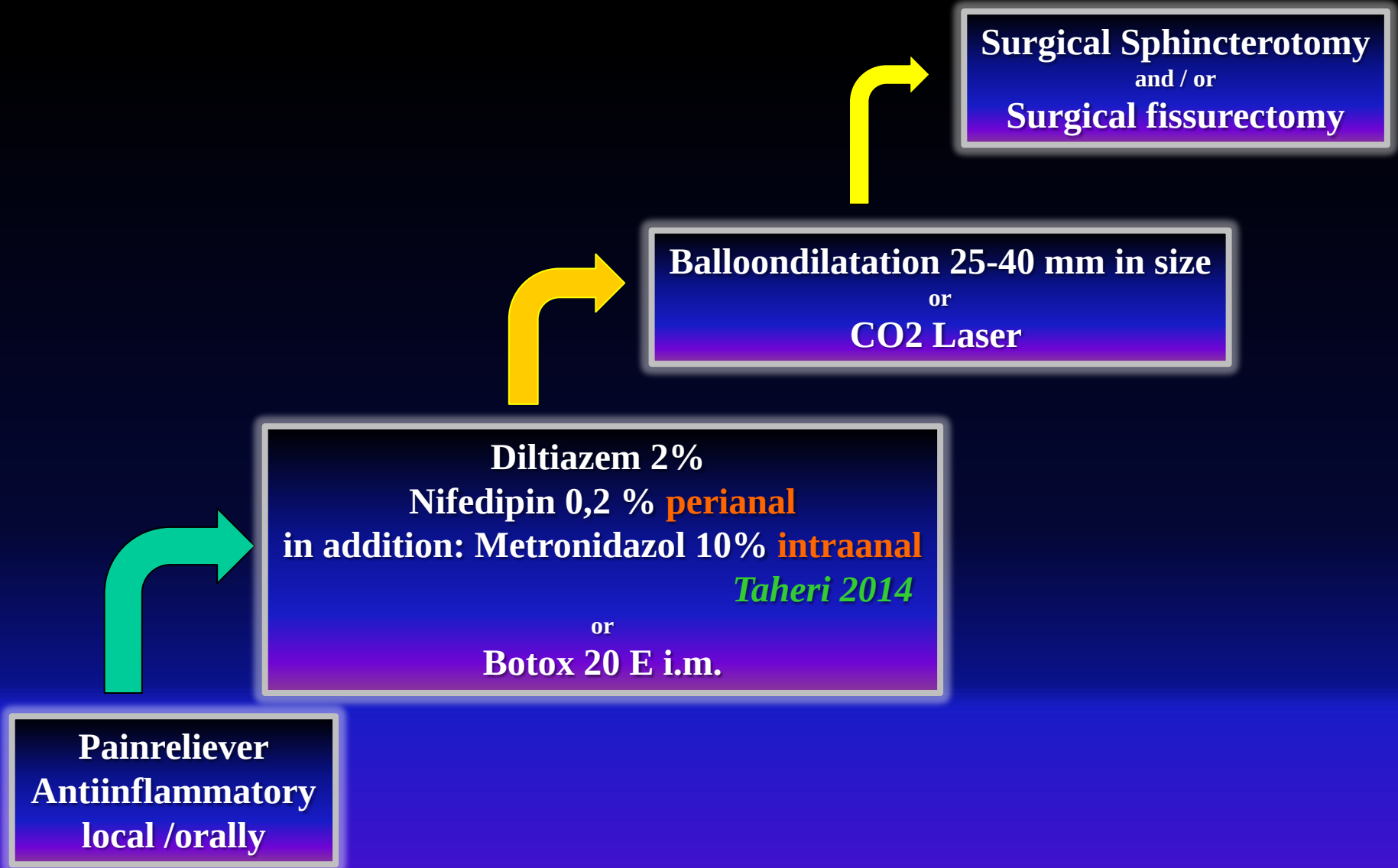
Stepwise therapy of chronic anal fissure



Stepwise therapy of chronic anal fissure

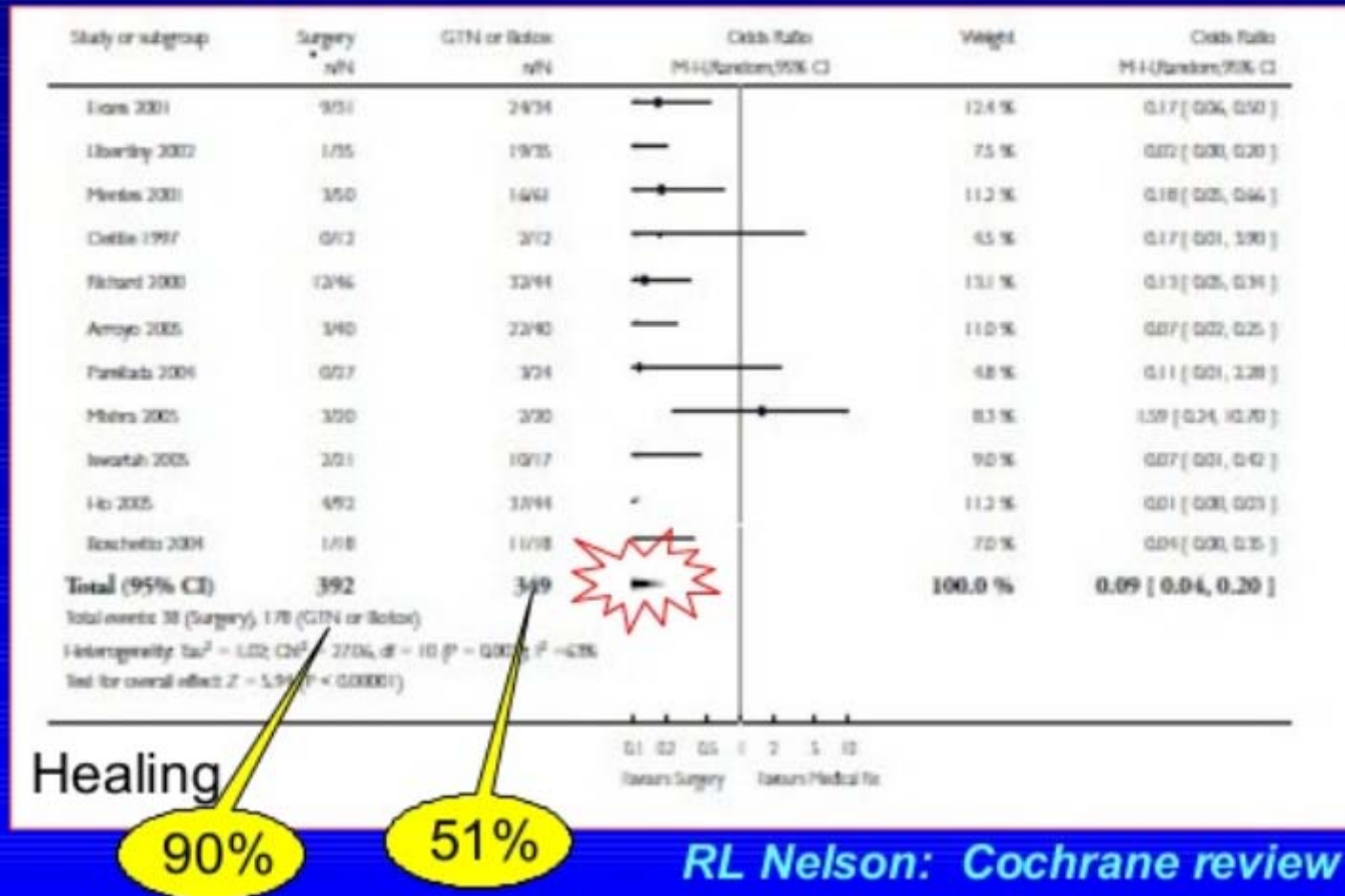


Stepwise therapy of chronic anal fissure



Anal Fissure

Surgery vs Medical treatment



RL Nelson: Cochrane review 2008

Sphincterotomy in Women
With Chronic Anal Fissure?
Are We Asking for Trouble?

Ribas, Dis Colon Rectum 2014

Anal Fissure – Conclusions

- Anal fissure? Other causes?
- Diagnostic tools: Finger...
Smear, Manometry, EUS, Bx
- Therapeutic non-surgical possibilities:
local Ca-Antagonist, Nitroglycerin, Botulinum Toxin
more invasive, but fast resolution of pain: Balloon-Dilatation



Team-work!