

Hemorrhoids

Staple, Burn, Ligate, Excise

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Controversies and Techniques in Surgery
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Anatomy

- Collections of submucosal, fibrovascular, arteriovenous sinuoids
- Normal Part of the Anorectum
- Facilitate Anal Closure
- Facilitate Continence
- Protect anal sphincter from injury during defecation
- Normally right anterior, posterior and left lateral

Categorization

- Internal
 - I-No Prolapse
 - II- Reduce spontaneously
 - III- Require Manual Reduction
 - IV- Chronically Prolapsed
- External
- Mixed

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INTER- HAEMORRHOIDAL GROOVE

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Symptomatic Hemorrhoids



Why Do Hemorrhoids Develop/ Become Symptomatic?

- Increased Intraabdominal pressure/Altered drainage
 - Pregnancy, Portal Hypertension, Ascites, Straining, Squatting, Obesity, Genetic Predisposition
- Weakening of supportive tissues- (Muscularis Submucosa) through abnormal mucosal descent
- Spicy Foods?
- Haas et al The Pathogenesis of Hemorrhoids Dis Colon Rectum 1984
- Altomare et al Red Hot Chili pepper and hemorrhoids Dis Colon Rectum 2006

Symptoms

- Hematochezia
 - Itching
 - Discomfort
 - Prolapse
 - Difficulty with Anal Hygiene
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- Riss et al. The prevalence of hemorrhoids in adults. Int J Colorectal Dis 2012;27:215-220

Evaluation



Evaluation

- History
- Position
 - Prone Jackknife
 - Lateral
- Proper Technique
- Endoscopy
 - Flexible
 - Anoscope/Sigmoidoscope
- Exclude Other Processes

Treatment

Conservative Measures

- Counselling
 - Topical Agents
 - Fiber
 - Sitz Baths
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- Alonso et al Laxatives for the treatment of hemorrhoids Cochrane Database Syst Rev 2005
 - Shakik, A. Role of warm-water bath in anorectal conditions J Clin Gastroenterol 1993

Sitz Baths



Topical Agents

Type	Description	Products
Local Anesthetics	Temporarily relieve pain, burning, and itching by numbing the nerve endings.	Benzocaine, Benzyl alcohol, Dibucaine, Dyclonine, Lidocaine, Pramoxine, Tetracaine
Vasoconstrictors	Make the blood vessels become smaller, reducing swelling.	Ephedrine sulfate, Epinephrine, Phenylephrine
Protectants	Forms a physical barrier on skin from aggravating liquid or stool.	Aluminum hydroxide gel, Cocoa butter, Glycerin, Kaolin, Lanolin, Mineral oil, White petroleum, Starch, Zinc oxide (calamine), Cod liver oil
Astringents	Promotes dryness of the skin, which helps relieve burning, itching, and pain.	Calamine, Zinc oxide, Witch hazel
Antiseptics	Inhibit the growth of bacteria and other organisms.	Boric acid, Hydrastis, Phenol, Benzalkonium chloride, Cetylpyridinium chloride, Benzethonium chloride, Resorcinol
Keratolytics	Cause the outer layers of skin or other tissues to disintegrate.	Aluminum chlorhydroxy allantoinate (alcloxa), Resorcinol
Analgesics	Relieve pain, itching, and burning by depressing receptors on pain nerves.	Menthol, Camphor, Juniper tar
Corticosteroids	Reduces inflammation, relieves itching, but chronic use can cause permanent damage to the skin.	Only products with weak corticosteroid effects are available over-the-counter.

Fiber

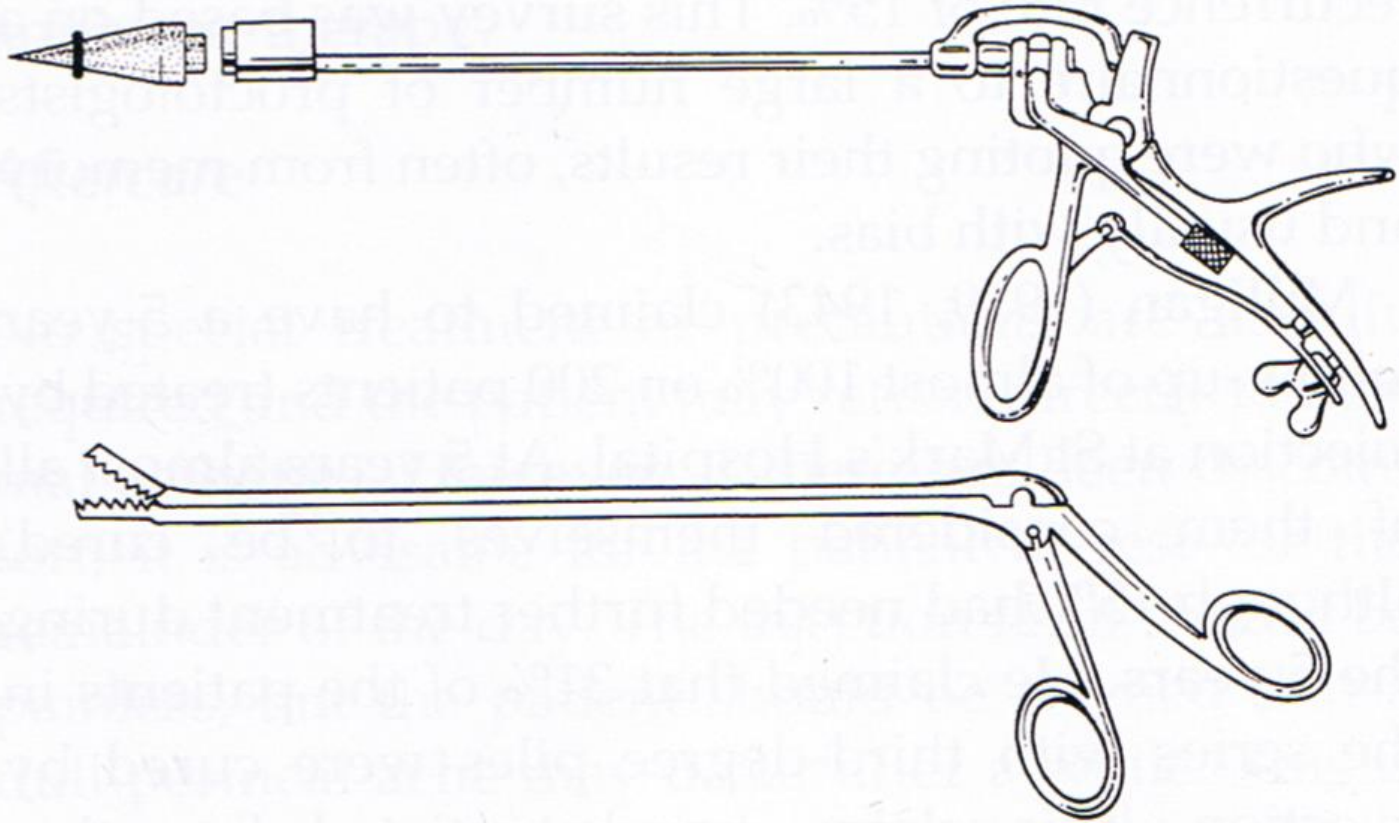


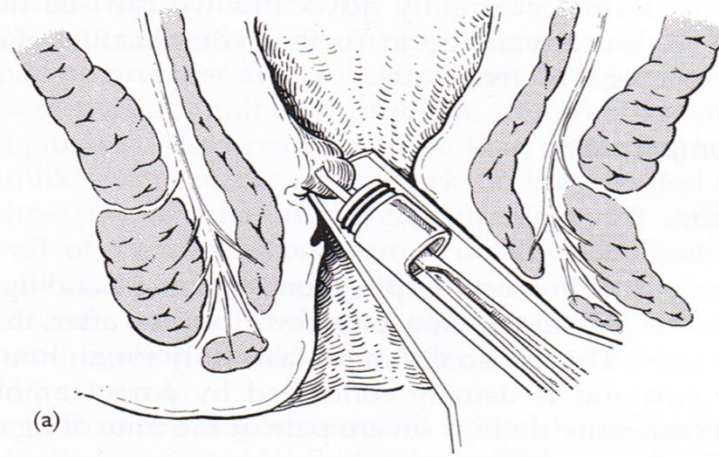
Office Based Procedures

- Rubber Band Ligation
- Sclerotherapy
- Infrared Coagulation

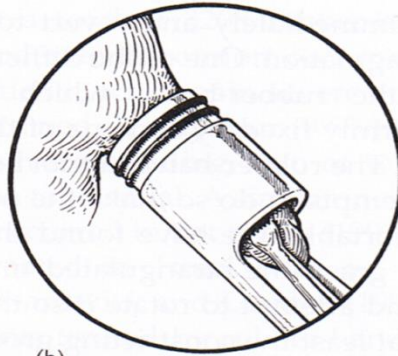
Rubber Band Ligation

- Forceps, Wall Suction, Endoscopic
- Grade I, II or III are ideal
- Not for external or mixed hemorrhoids
- Contraindications- Anticoagulation
- Complications 3-8%
 - Pain, Urinary Retention, Infection, Thrombosis, Delayed Hemorrhage

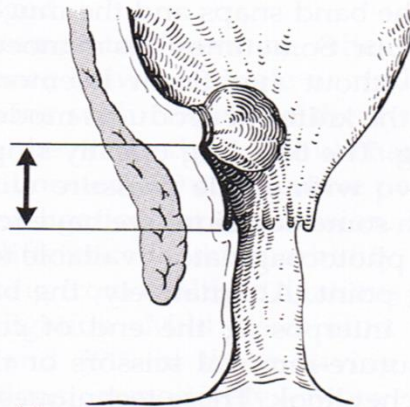




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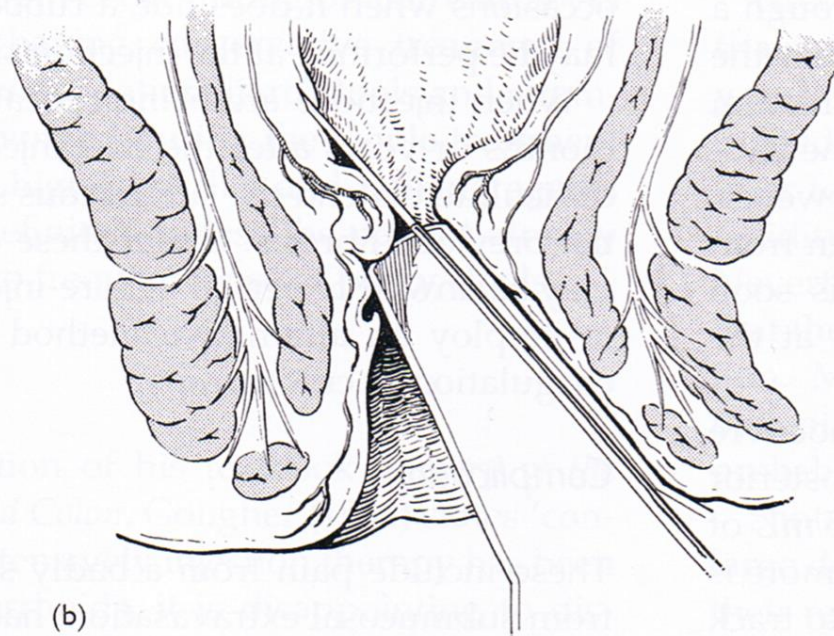
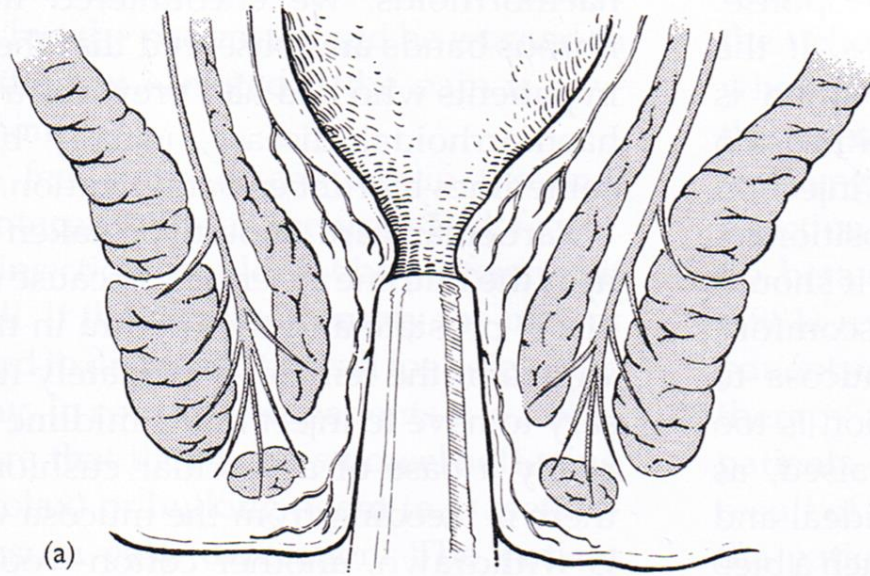
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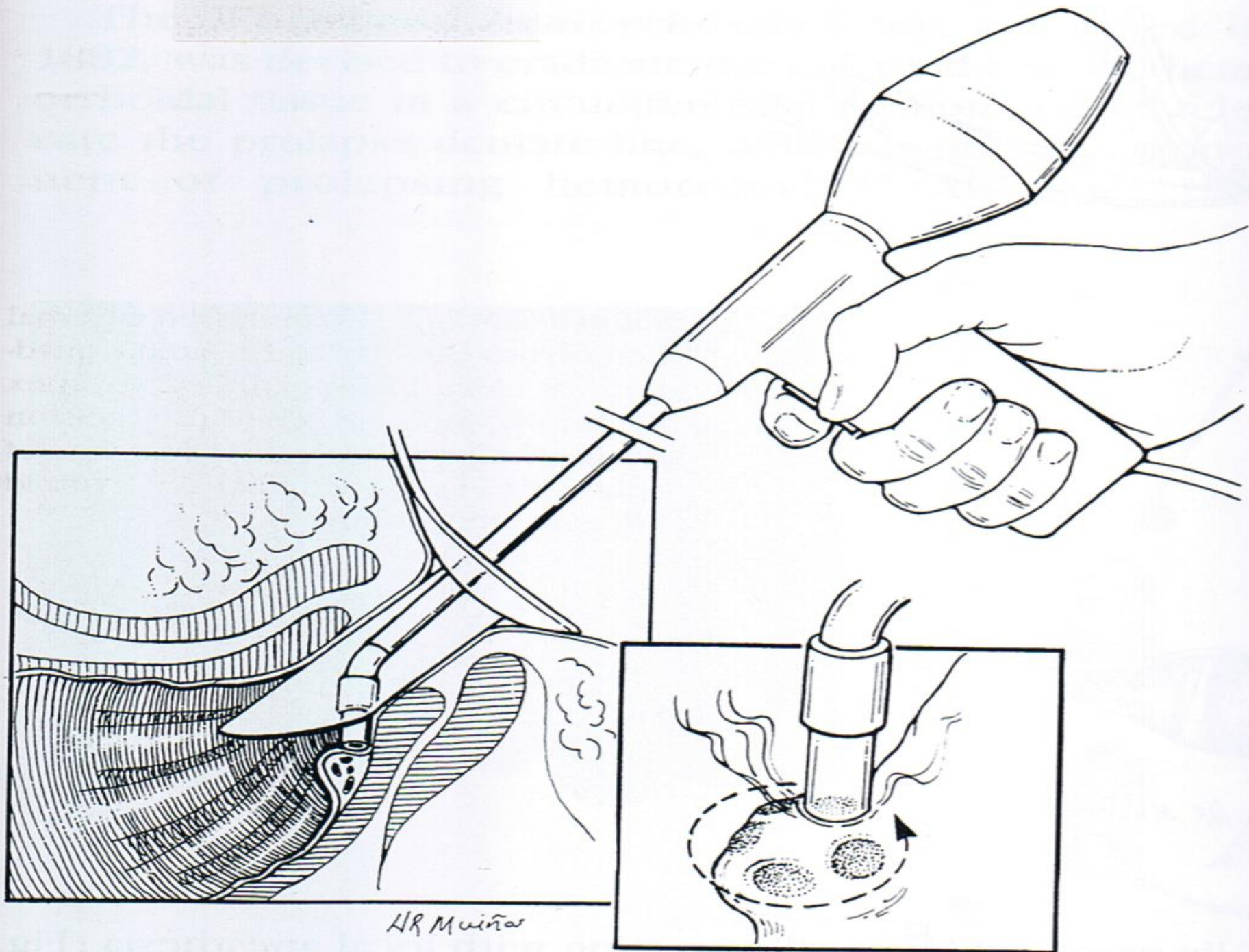
Sclerotherapy

- Create submucosal fibrosis
- Ideal for patients with I, II but could be used for higher stage
- May be used in patients on anticoagulants
- Can be repeated over time
- Agents
 - Morhuate
 - Sotradechol
- Complications Uncommon but may be severe



Infrared Coagulation

- Probably only for grades I and II
- Infrared Waves results in protein necrosis
- Complications are rare



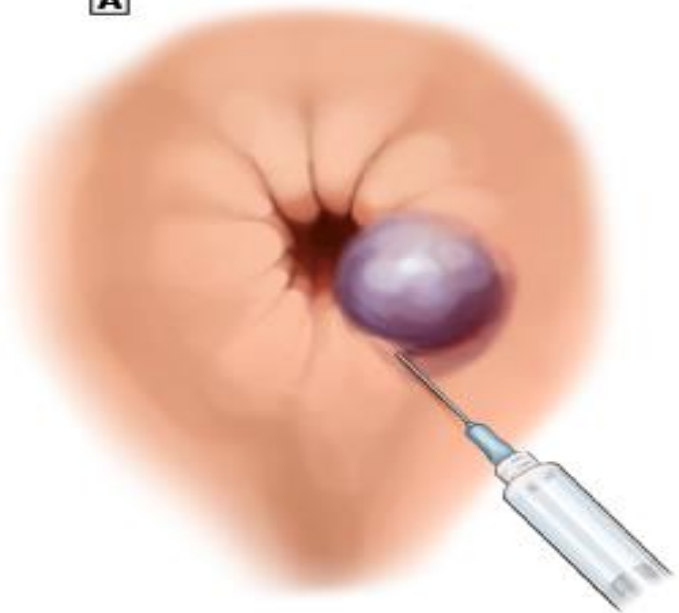
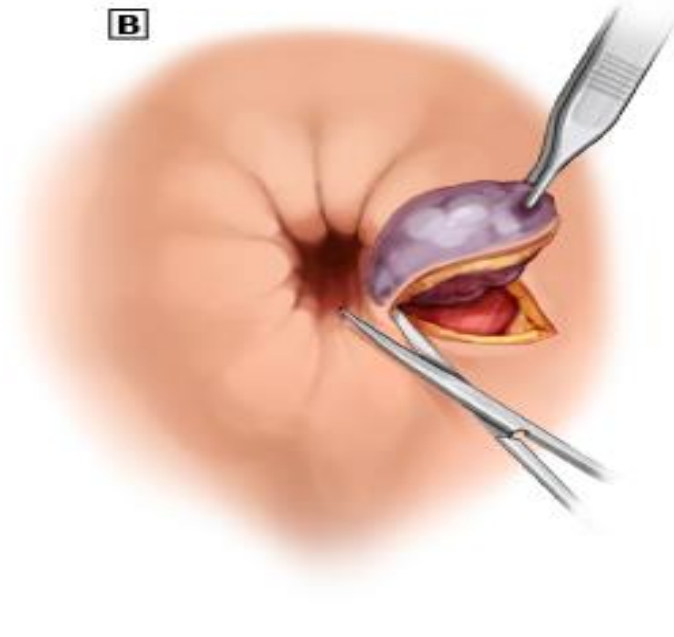
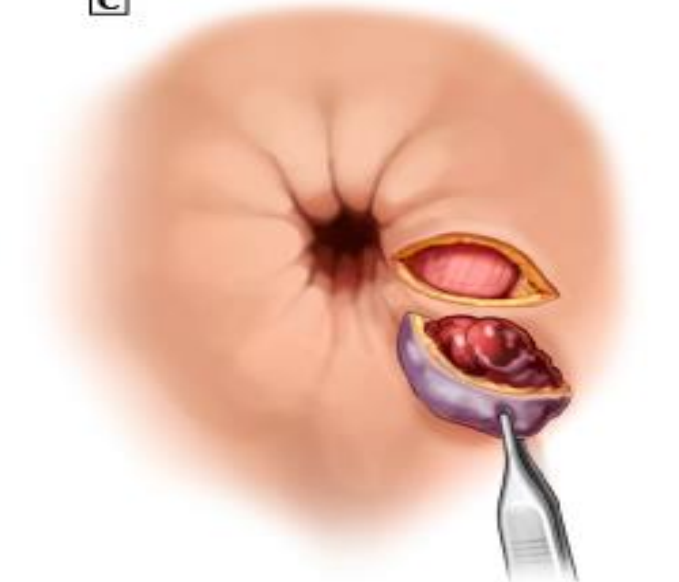
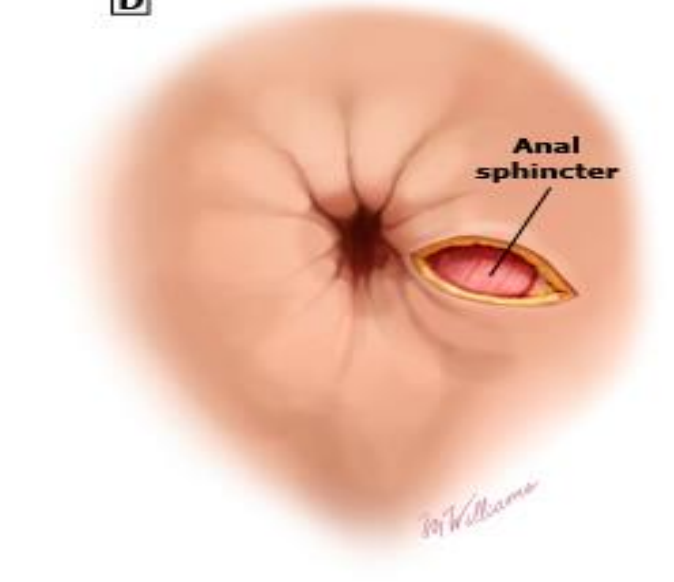
Office Procedures

Results

- Rubber Band vs. Sclerotherapy and IR
 - Rubber band more effective
 - Less need for repeat treatments
 - Long term (6 month) success- 90% vs 30% for sclerotherapy
 - More Pain and complications
 - Results for IR similar or worse than for sclerotherapy
 - MacRae, HM Comparison of hemorrhoidal treatments: a meta-analysis. Can J Surg 1997

External Thrombosis

- Symptoms usually resolve in 72 hours
- Excisional therapy preferred over incision/clot extraction
- Can be done in the office

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Indications for Surgical Therapy

- Symptoms refractory to conservative measures
- Unable to tolerate office procedures
- Large or severely symptomatic external
- Symptomatic Grade III, IV, or Mixed internal
- Large skin tags
- Patient choice



Preparation for Surgery

- Manage anticoagulation
- Cleansing enemas
- Antibiotics probably not needed
 - With possible exception of immunosuppressed patient
 - Wesarachawit, W. Antibiotics and early post operative complications of closed hemorrhoidectomy: a retrospective matched pair study J Med Assoc Thai 2007

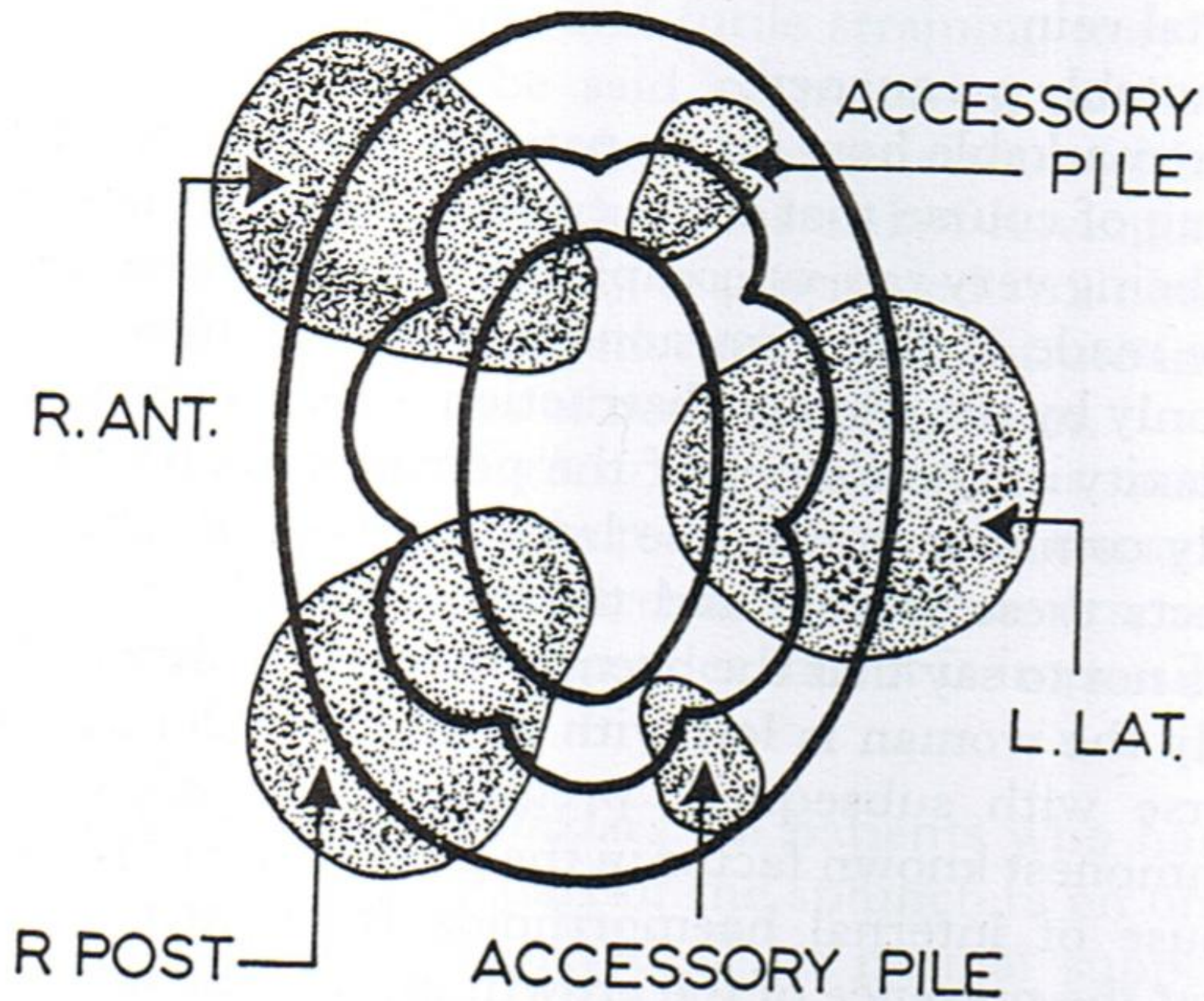
Choices

Position/Anesthesia

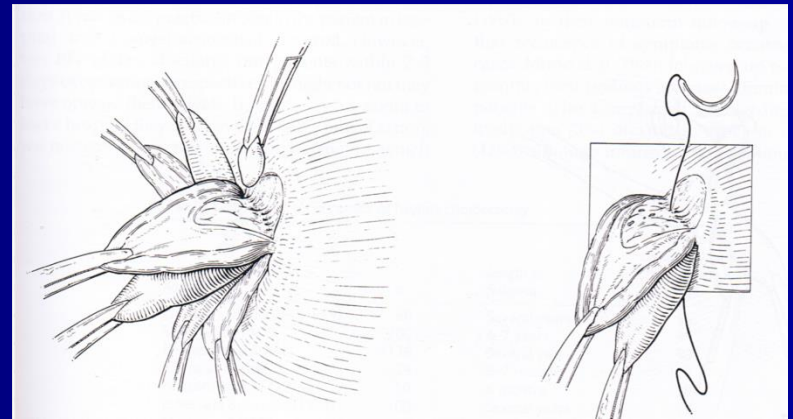
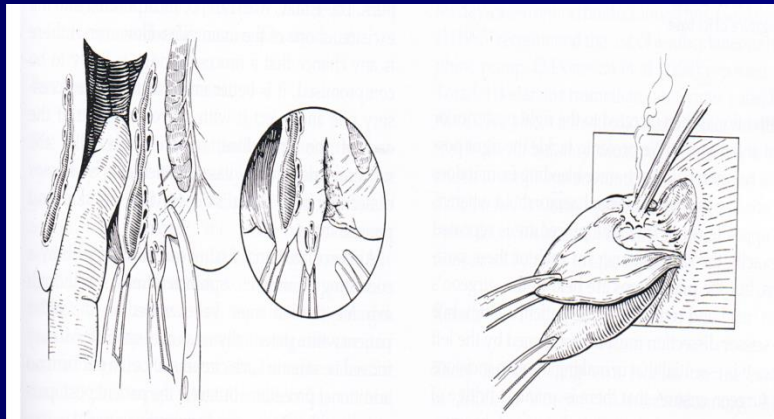
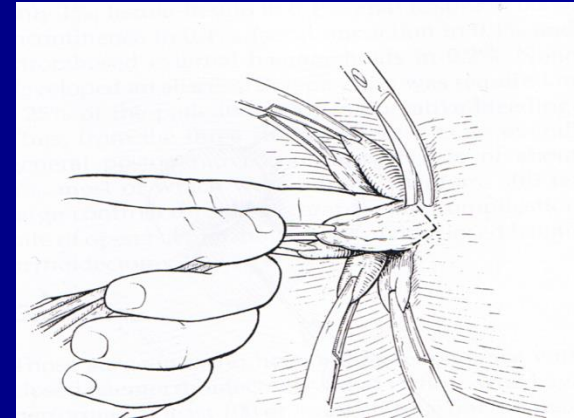
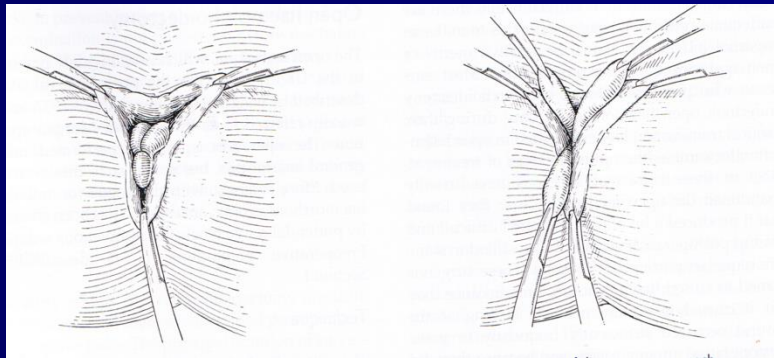
- Prone
 - Supine Lithotomy
 - Lateral
 - General
 - Regional
 - Local
-
- Joshi,GP Prospect Collaboration. Evidence-based management of pain after haemorrhoidectomy. Br J Surgery 2010

Goals of Conventional Hemorrhoidectomy

- Removal of Symptomatic and Redundant tissue
- Avoid damage to the sphincters
- Avoid taking too much anoderm



Hemorrhoidectomy



Conventional Hemorrhoidectomy

Complications

- Urinary Retention (30%)
- UTI (5%)
- Fecal Impaction
- Fecal Incontinence (2-10%)
- Surgical Site Infection (<1%)
- Delayed Hemorrhage (1-2%)
- Anal Stricture (0.1-1%)

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- Anal Stricture (0.1-1%)
- Wound Dehiscence

Devices

- Scalpel
- Scissors
- Electrocautery
- Ligasure
- Harmonic Scalpel
- Laser

Devices

Does It Make a Difference?

- Energy Based Devices vs Conventional/Diathermy
 - Faster
 - Less Pain
- Chung Double blind, randomized trial comparing Harmonic scalpel hemorrhoidectomy, bipolar scissors hemorrhoidectomy and scissors excision:ligation technique Dis Colon Rectum 2002
- Nienhuijs Conventional versus LigaSure hemorrhoidectomy for patients with symptomatic hemorrhoids Cochrane Database Syst Rev. 2009
- Abo-hashem Harmonic scalpel compared with bipolar electro-cautery hemorrhoidectomy: a randomized controlled trial Int J Surg 2010

Devices

Does it Make a Difference?

- Ligasure vs Harmonic
 - Ligasure faster and Less Pain
 - ?Cost
- Kwok,Y Double Blind, randomized trial comparing Ligasure and Harmonic Scalpel hemorrhoidectomy. Dis Colon Rectum 2005

Open (Milligan-Morgan) vs Closed (Ferguson)

- Open performed more frequently
- Open preferred for acute gangrenous hemorrhoids
- Semi Open Technique

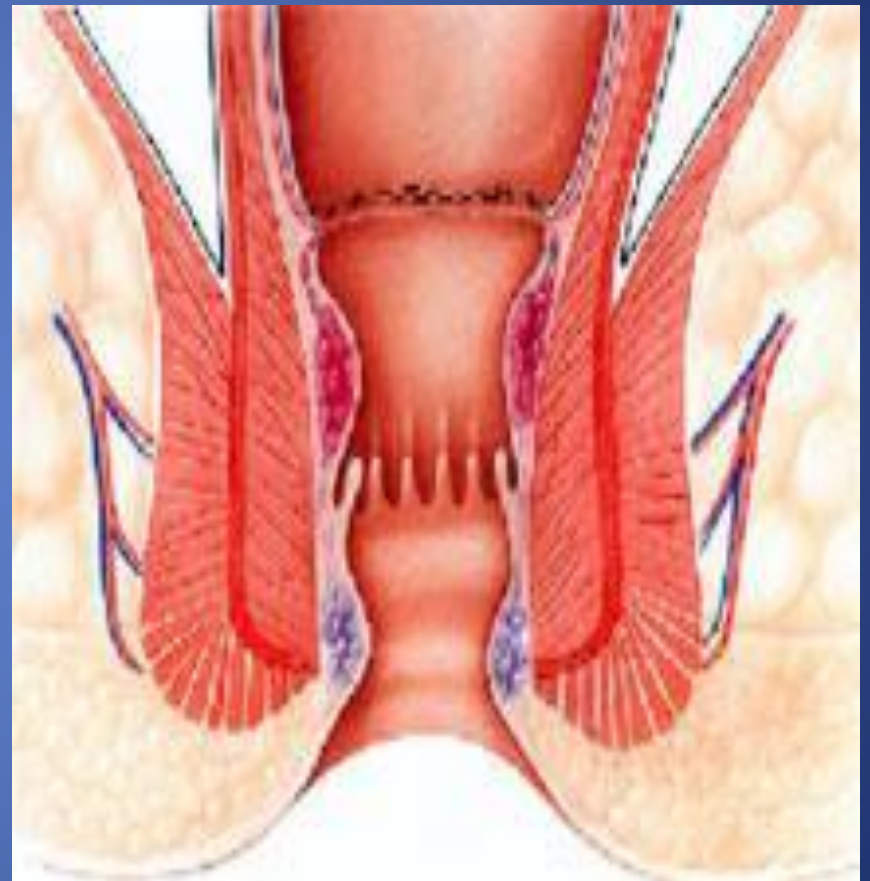
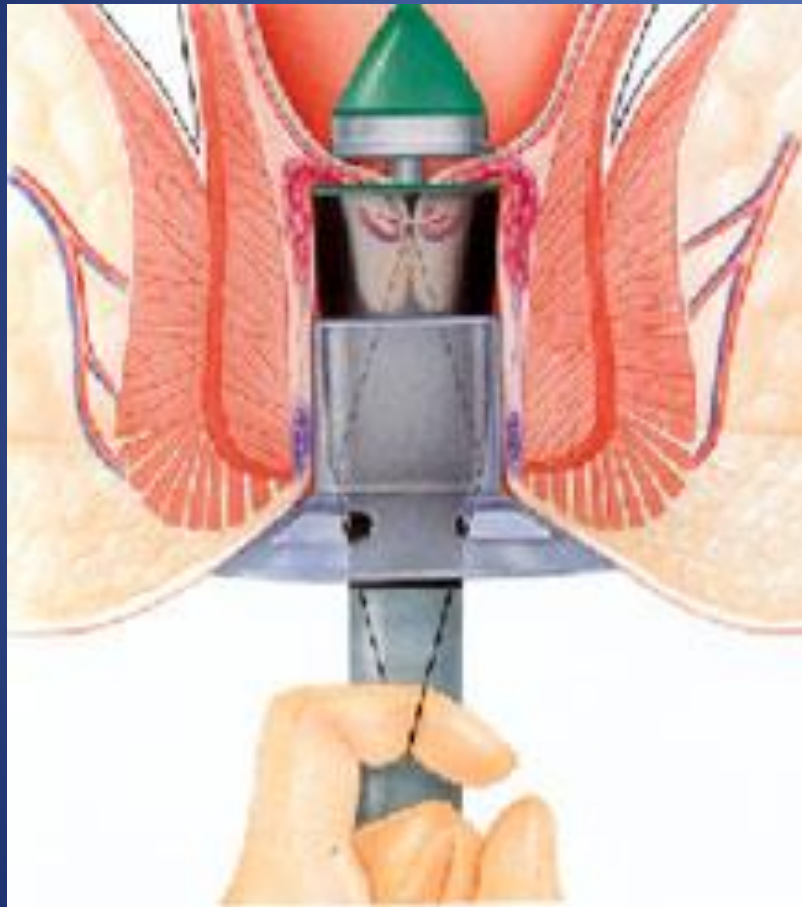
Open vs Closed

Does It Made a Difference?

- Semi Open vs Open
 - More rapid wound healing
- Reis Open versus semi-open hemorrhoidectomy: a random trial Int Surg 1992
- Closed vs Open
 - Less pain at first bm
 - Faster wound healing at three weeks (79 vs 18%)
- You, SY Open vs. closed hemorrhoidectomy. Dis Coln Rectum 2005
- Absence of High Quality Evidence-Surgeon Discretion
- Arbman G Closed vs. open hemorrhoidectomy- is there a difference? Dis Colon Rectum 2000

Stapled Hemorrhoidopexy

- Modified EEA stapler is introduced transanally
- Mucosa and submucosal are drawn into the anvil
- All three columns are treated simultaneously
- Excises redundant tissue
- Fixes remaining tissue
- Interrupts portion of blood flow



Conventional vs. Stapled

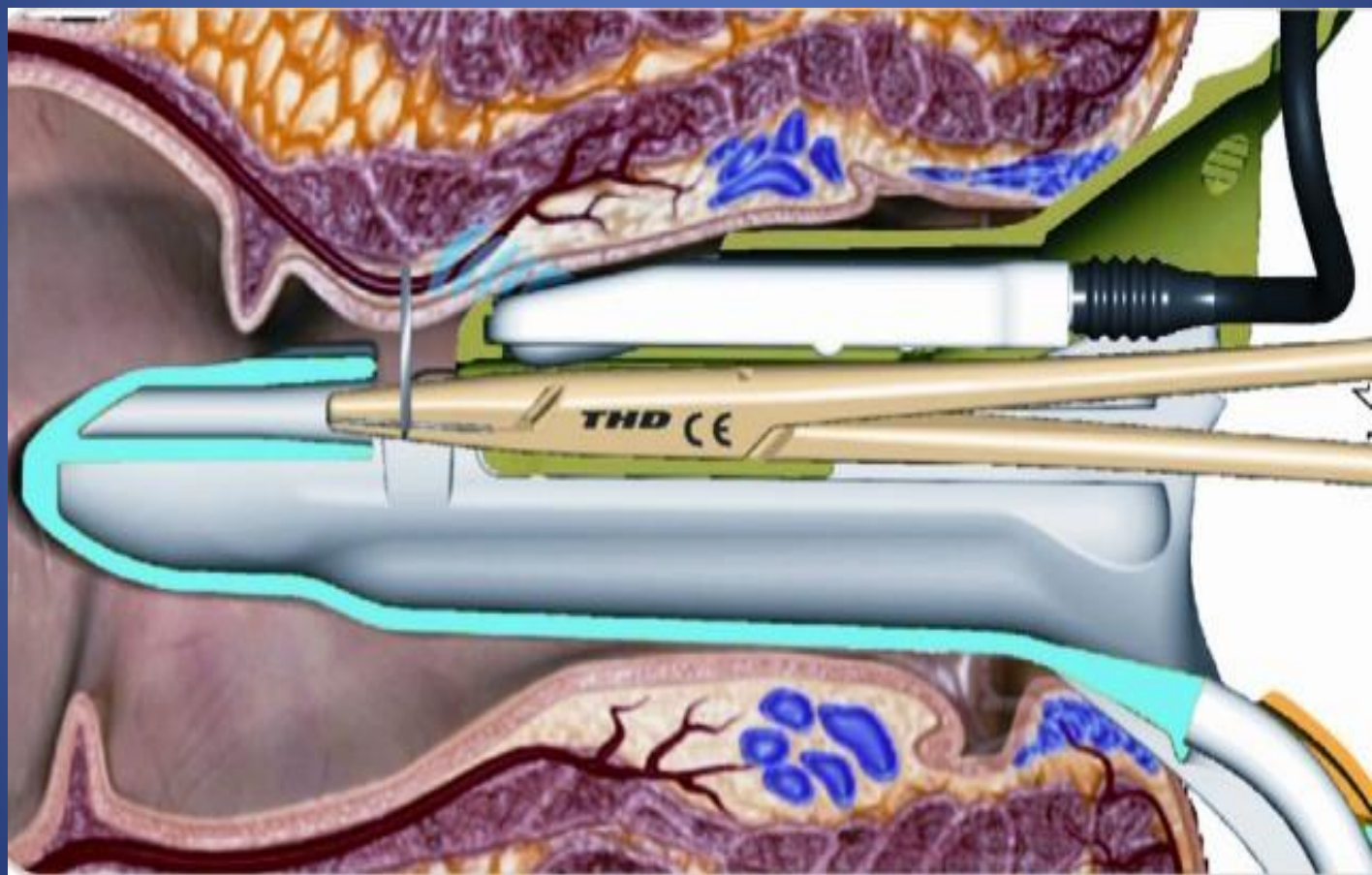
- Stapled more expensive
- Short term- stapled less pain and faster recovery
- Stapled not for external hemorrhoids

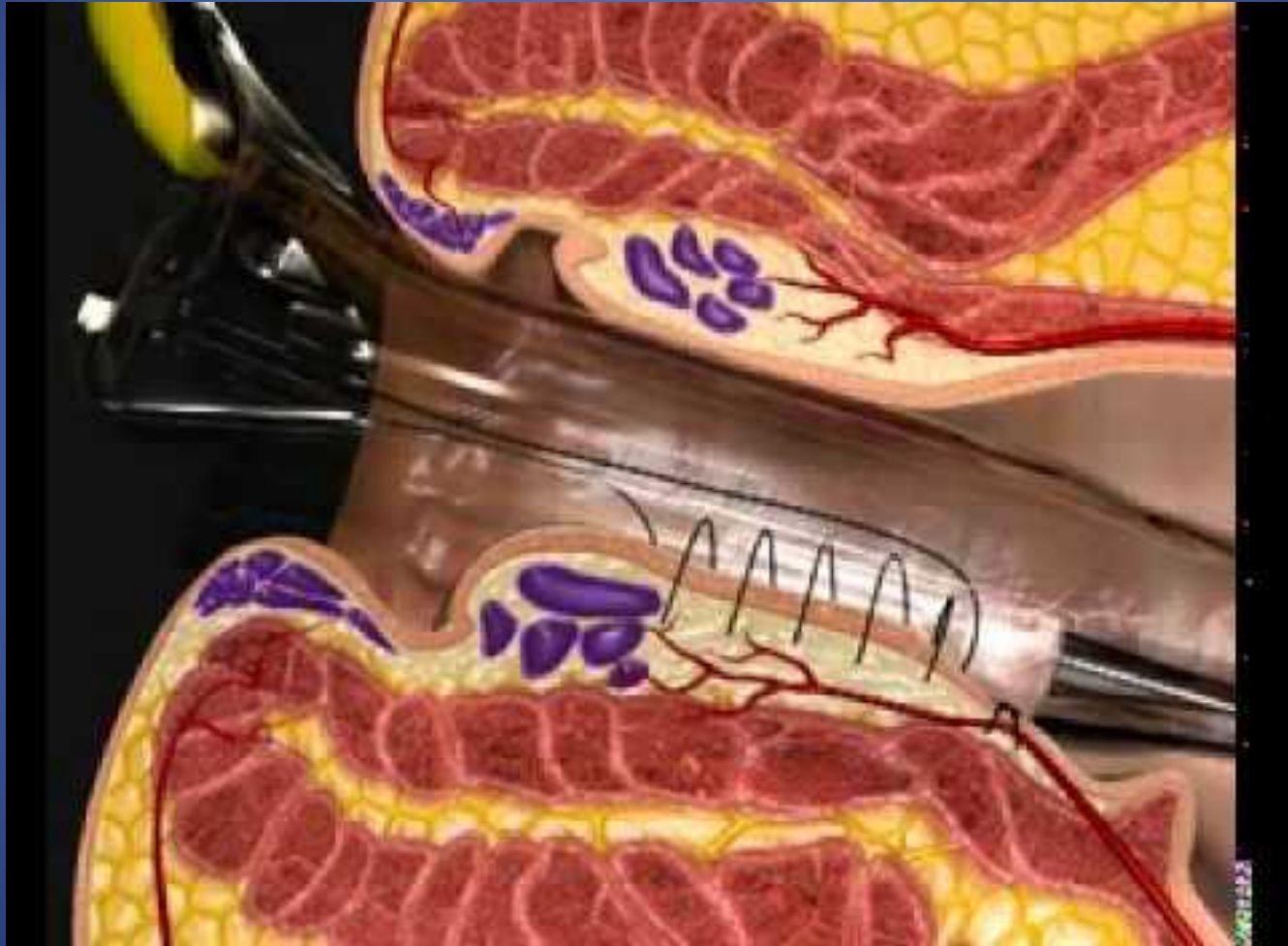
Conventional vs. Stapled

- At one year Recurrence and prolapse higher with stapled but no difference in terms of pain, pruritus and urgency
 - Jayaraman,S Stapled hemorrhoidopexy is associated with higher long-term recurrence rate of internal hemorrhoids compared with conventional excisional hemorrhoid surgery. Dis Colon Rectum 2007
- Overall complications
 - Complication rate Stapled 20.2% Conventional 25.2 (P=.06)
 - Some unique and serious complications from stapled - anovaginal fistula, pelvic sepsis, staple line bleeding, persistent post defecatory pain
 - Trjandra JJ Systematic review on the procedure for prolapse and hemporrhoids (stapled hemorrhoidopexy) Dis Colon Rectum 2007

Doppler-Guided Dearterialization

- Ultrasound used to identify arterial supply to each hemorrhoid
- Special Anoscope used to suture the feeding arteries
- Pucher, PH Clinical outcome following Doppler-guided hemorrhoidal artery ligation: a systematic review Colorectal Dis 2013
- Elmer, SE A randomized trial of transanal hemorrhoidal dearterialization with anoopexy compared with open hemorrhoidectomy in the treatment of hemorrhoids Dis Colon Rectum 2013





Doppler Guided Dearterialization

- Post op hemorrhage 5%
- Increased fecal soiling when compared with open hemorrhoidectomy
- Recurrence rates bet 3-60%

Summary-

Excise, Ligate, Burn, Staple?

- Most symptomatic hemorrhoids can be managed conservatively
- Various office procedures are available- rubber banding- lowest recurrence but most complicated
- Surgery offered for higher grades and external- Most effective but most complicated and painful
- Conventional Hemorrhoidectomy is considered the gold standard

Happy in the End

