Hemorrhoids

Carlos R. Alvarez-Allende
PGY-III
Colorectal Surgery

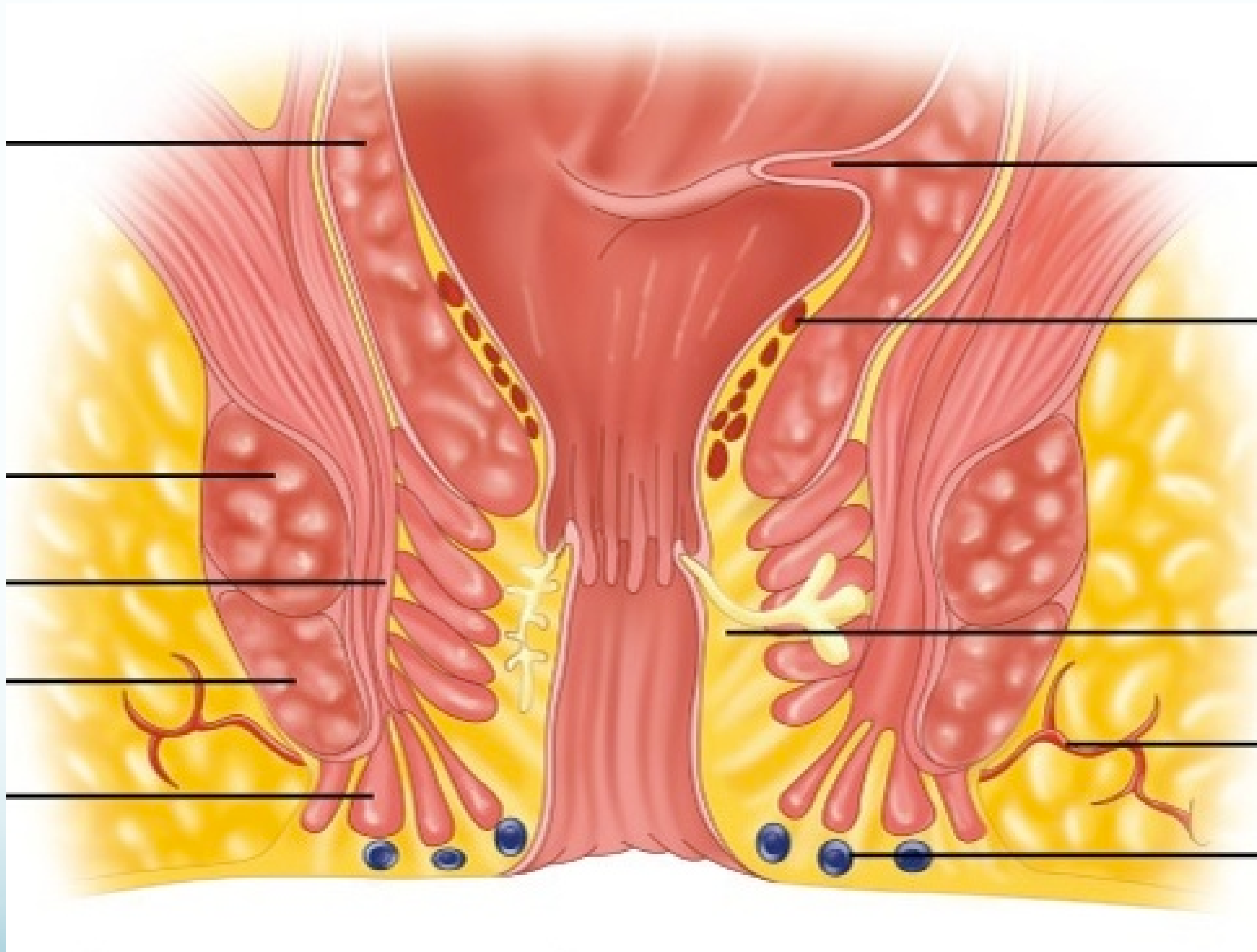
Overview

- Anatomy
- Classification
- Etiology
- Incidence
- Symptoms
- Differential Diagnosis
- Medical Management
- Surgical Management

Anatomy

- Anal canal has 3 regions of fibrovascular cushions
  - Located in the left lateral, right posterior and right anterior regions of the canal
  - Contain submucosa, blood vessels, smooth muscle and connective tissue
  - Contribute 15% to 20% of the resting anal pressure
  - Prevent fecal incontinence by filling with blood during times of increased abdominal pressure and decreased anal tone

Anatomy



Anatomy

- The term hemorrhoid is used when one of these cushions enlarges and produces symptoms.
- Internal hemorrhoids
  - Located above dentate line
  - Covered with mucosa
  - No sensory innervation - painless
- External hemorrhoids
  - Located below dentate line
  - Covered with anoderm
  - Sensory innervation - painful

Classification

Internal Hemorrhoids	
Grade I	No prolapse, bleeding
Grade II	Prolapse with spontaneous reduction
Grade III	Prolapse requiring manual reduction
Grade IV	Prolapse not amenable to reduction secondary to thrombosis/incarceration

Etiology

- Etiology of hemorrhoids remains uncertain
- Pathophysiology includes:
  - Elevated anal sphincter pressures
  - Abnormal dilation of the internal hemorrhoid venous plexus
  - Distention of the arteriovenous anastomosis
  - Prolapse of the cushion and surrounding tissue

Etiology

- Risk factors:
  - Constant straining with defecation
  - Prolonged efforts at defecation
  - History of constipation
  - Inadequate fiber intake
  - Long periods on the commode
  - Conditions associated with increased intraabdominal pressure

Incidence

- Unknown incidence of hemorrhoids.
- Reported prevalence of 4.4% in the United States
  - Approximately 10 million people affected
- Whites more likely affected than African Americans
- Peak incidence between 45 and 60 years of age for both genders
- Pregnant women and elderly patients at increased risk

Symptoms

- Painless bleeding is the most frequent complaint
- Other symptoms include swelling, prolapse, pruritus, hygiene problems and pain
- Prolapse of internal hemorrhoids occurs with straining
  - Fecal leakage and pruritus
  - Pain is associated with incarceration and strangularion
- Pain associated with external hemorrhoids associated with thrombosis
  - Diminishes after 48 to 72 hours

Differential Diagnosis

- Evaluation should include digital rectal exam and anoscopy
- Hemorrhoids and rectal varices are not the same
  - Located more proximal in the anal canal and rectum
  - Treated with procedures that reduce portal hypertension
- No increased incidence of hemorrhoids in patients with portal hypertension

Differential Diagnosis

Symptoms	Cause
Pain and bleeding after bowel movement	Ulcer/fissure disease
Forceful straining to have bowel movement	Pelvic floor abnormalities
Blood mixed with stools	Neoplasm
Drainage of pus	Abscess/fistula, IBD
Constant moisture	Condyloma
Mucous drainage and incontinence	Rectal prolapse

Medical Management

- Lifestyle modifications
  - Dietary changes
  - Increased fluid and fiber intake
    - 6 to 8 glasses of fluid daily
    - 25 to 30 grams of fiber per day
  - Dietary supplements
    - Psyllum
  - Improved anal hygiene
    - Avoid excessive scrubbing
    - Frequent sitz baths
    - Use facial and baby wipes

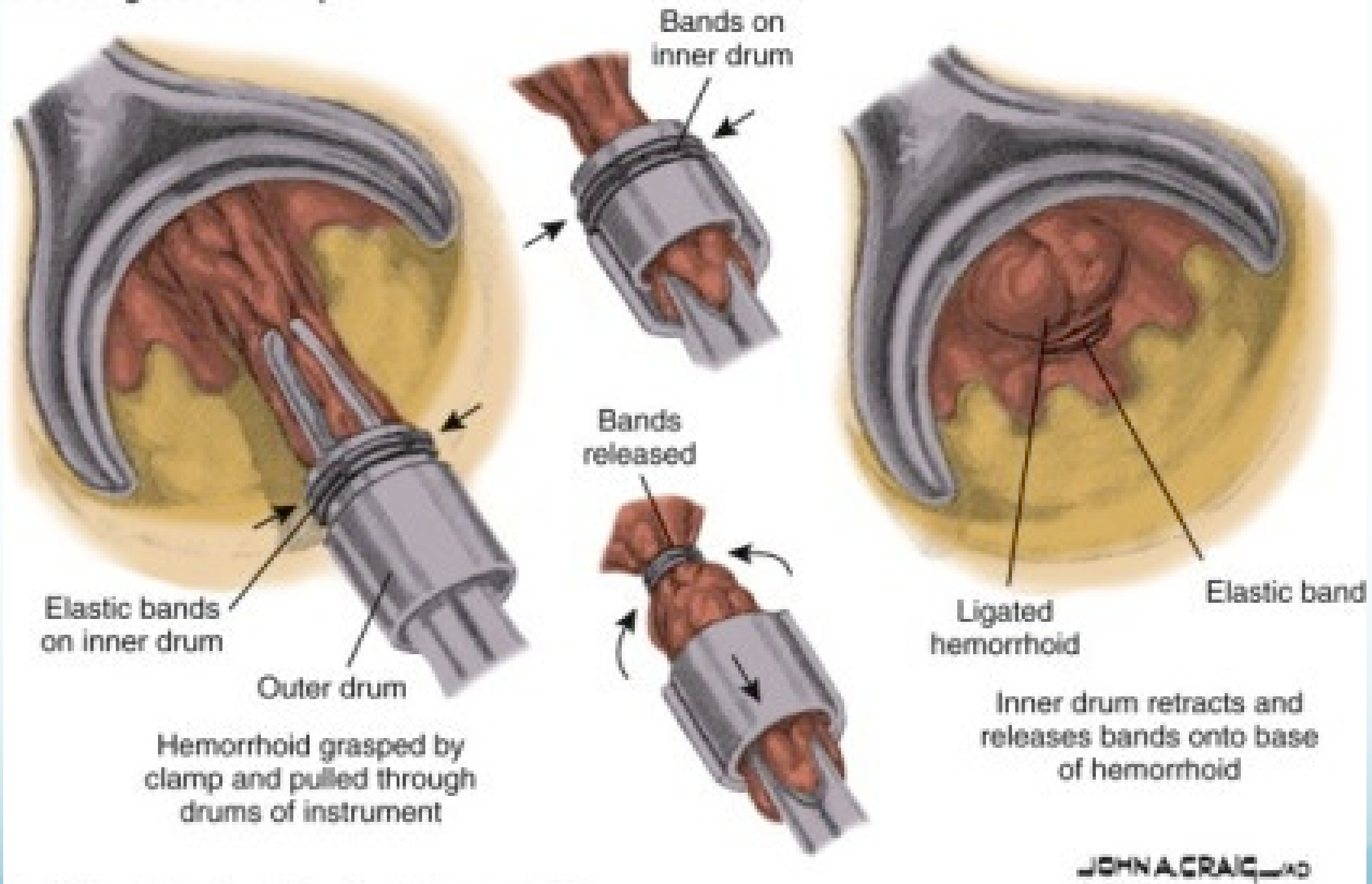
Medical Management

- Strict toilet regimen
  - Avoid reading in the toilet
  - Avoid sitting on the toilet for long periods of time
  - Do not defer the urge to defecate
- Over the counter topical treatments improve hygiene and alleviate associated symptoms
- Grade I, II and III internal hemorrhoids usually respond to these modifications

Rubber band ligation

- Best suited for Grade I internal hemorrhoids
  - Bleeding with minimal prolapse
- Can be used to treat Grade II and III hemorrhoids
- Not indicated for External Hemorrhoids
  - Somatic innervation
- Rubber band promotes inflammation that leads to ulcer formation, scarring and fixation to the rectal wall.
- Band is retained for 2 to 10 days

Rubber band ligation



Rubber band ligation

- Repeat banding should be performed after 4 weeks
  - Allows inflammation to resolve
- Bands placed too close to the dentate line should be removed
- Discomfort after banding is managed with sitz baths, analgesics and avoidance of constipation

Rubber band ligation

- Complication rate of 0.5% to 8%
  - Vasovagal reaction
  - Bleeding 1 to 2 weeks after procedure
  - Pelvic sepsis
    - Fever, perianal pain, perineal cellulitis, watery discharge and urinary retention
- Relatively contraindicated in patients chronically anticoagulated
- Success rate over 75% in patients with Grade I and II hemorrhoids

Sclerotherapy

- Injection of irritant at the base of the hemorrhoid
  - 1 to 2 mL of an oil based irritant containing 5% phenol
  - 1 to 2 mL of an aqueous irritant (ethanolamine oleate)
- Causes an inflammatory reaction, edema and intravascular thrombosis leading to scarring.
- Indicated for Grade I and II internal hemorrhoids and grade III internal hemorrhoids in immunocompromised patients

Sclerotherapy

- Complications
  - Upper abdominal pain if injected into the hemorrhoidal vessel
  - Erectile dysfunction if injected in the periprostatic parasympathetic nerves
  - Pelvic sepsis can occur up to 5 days after procedure
- Sclerotherapy improves symptoms in up to 75% of patients with Grade II internal hemorrhoids

Surgical Management

- Indications
  - Large Grade III and Grade IV internal hemorrhoids
  - Mixed hemorrhoids
  - Large external hemorrhoids
  - Failure of medical management

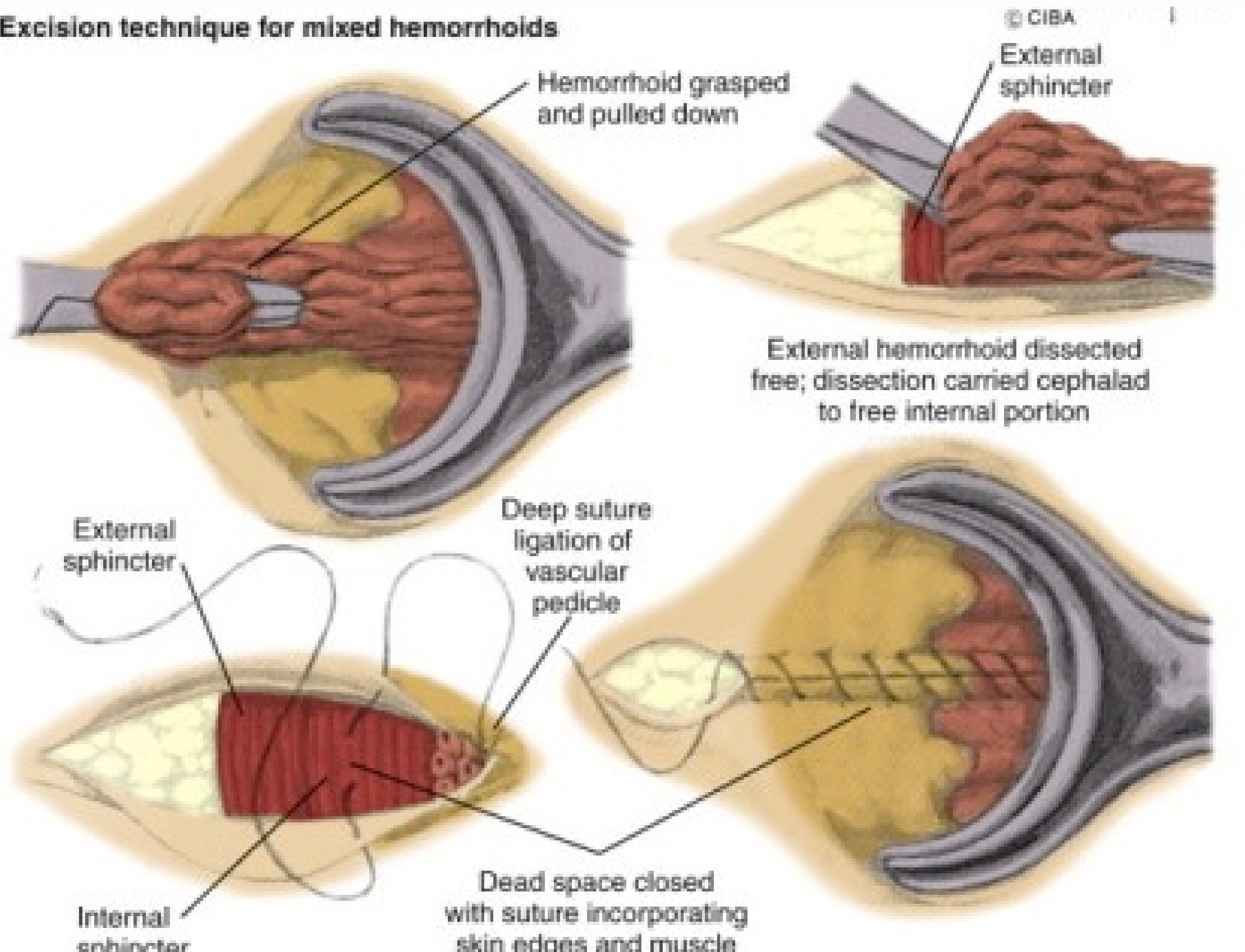
Surgical Management

- Preoperative preparation
  - Stopping anticoagulation
  - If patient is incontinent
    - Anal manometry
    - Ultrasound
  - Enema
  - Prophylactic antibiotics for patients at high risk for endocarditis
- Prone jackknife or lithotomy position
- Perianal block with local anesthetic
  - 30 ml of 0.25% bupivicaine

Surgical Management

- Acute thrombosis of external hemorrhoids
  - Worsens within 24 hours
  - Managed with sitz baths and analgesics
  - Surgical intervention due to pain should occur within the first 24 hours
    - Clot is evacuated and overlying skin removed to avoid recurrence
    - Not indicated after 24 hours due to cumulative pain
  - Topical application of 0.3% nifedipine cream
    - Antiinflammatory
    - Smooth muscle relaxant

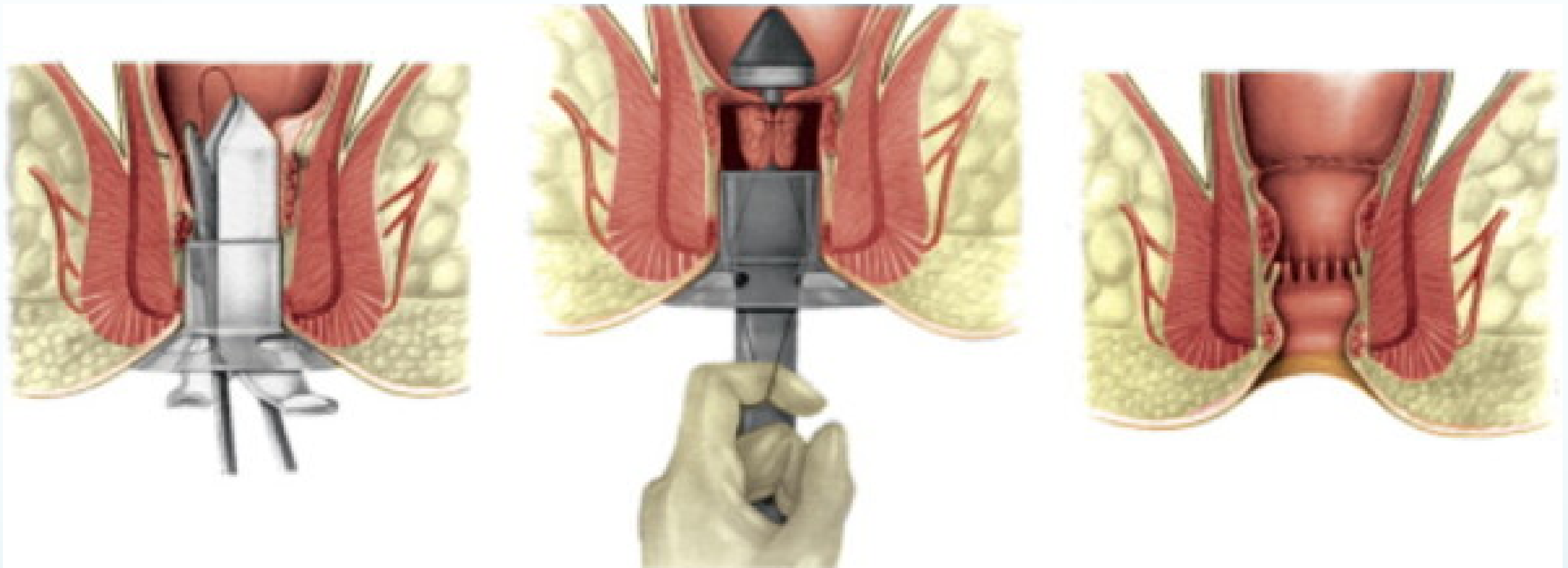
Surgical Hemorrhoidectomy



Surgical Hemorrhoidectomy

- Complications
  - Most common complication is urinary retention
    - Minimize intravenous fluids
    - Voiding before discharge
    - Resolves after swelling subsides
  - Anal incontinence
  - Anal stenosis
    - Operate on the largest hemorrhoid first
    - 1 cm of normal anoderm between suture lines
  - Hemorrhage
    - 1 to 2 weeks after procedure
    - Reported rate of 0.9%

Surgical Hemorrhoidopexy



Surgical Hemorrhoidopexy

- Complications
  - Urinary retention
  - Bleeding
  - Pain
- Rare complications
  - Rectal perforation
  - Rectovaginal fistula
  - Pelvic sepsis
- Increased recurrence rate when compared with hemorrhoidectomy