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خلاصه نکات امتحانی فصول منتخب سابیستون ۲۰۲۲ به همراه

بانک سوالات تالیفی و پاسخ های تشریحی

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هیئت علمی دانشگاه علوم پزشکی ارتش

مقدمه ناشر

سپاس و ستایش شایستهٔ پروردگاری که کرامتش نامحدود و رحمتش بی‌پایان است. اوست که بشر را دانش بیاموخت و با قلم آشنا کرد. به انسان رخصت آن داد که علم را به خدمت گیرد و با قلم خود و رسم خطوط گویا آن را به دیگران نیز بیاموزد.

خدایا از شاکران درگاهت و حقیقت‌جویان راهت قرارم ده و یاری‌ام کن تا در آموختن نلغزم و آن‌چه را آموختم، به شایستگی عرضه کنم.

رزیدنت‌یار، حامی و پیشرو در نظام کمک آموزشی پزشکی کشور به سبک نوین و مطابق با آخرین پیشرفت‌های آموزشی در حیطه پزشکی با کادری مجرب و آشنا طی ۱۸ سال گذشته از منظر متخصصین همواره بهترین محصولات را ارائه و در دسترس مخاطبین خود قرار داده است.

اثر پیش رو با توجه به محتوی بسیار غنی در مباحث جراحی عمومی گردآوری شده و با استفاده از مفهومی نمودن مباحث و روان‌سازی توسط مؤلف محترم از منابع و رفرنس بوده و در روال گذر از گروه کنترل کیفیت رزیدنت‌یار با جمعی از اساتید رتبه A را به خود اختصاص داده است، امید است با مطالعه تمام مباحث پیش رو با یاری خداوند متعال پیروز و پایدار باشید.

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مرجان پورندیم

فهرست مطالب

فصل ۵۳ : Anus ۹

فصل ۵۲: Colon and Rectum ۵۹

فصل ۴۲: ESOPHAGUS.....۱۴۳

فصل ۴۹: STOMACH.....۲۰۵

فصل ۶۴: VASCULAR TRAUMA ۲۶۳

فصل ۵۳
Section 53

Anus

ANUS & BENIGN ANORECTAL DISEASE

- ✓ **PART I:** ***Anatomy • Physiology • Diagnosis • Imaging • Internal Hemorrhoids • External Hemorrhoids • Anal Fissure***

I. SURGICAL ANATOMY OF THE ANUS

1. Definitions

- **Anal canal (surgical definition):** ~4 cm from anal verge → anorectal ring.
- **Anal canal (anatomist):** distal 2 cm from anal verge → dentate line.
- **Anal verge:** distal cutaneous opening.
- **Dentate line:** ectoderm–endoderm junction; key landmark for sensation, lymphatics, pathology.

2. Epithelial Zones

- **Above dentate line:** columnar epithelium (visceral sensation).
- **Between dentate line & verge:** modified squamous epithelium (no hair follicles/glands).
- **Below verge:** keratinized squamous epithelium (somatic sensation).

3. Columns of Morgagni & Anal Crypts

- Longitudinal mucosal folds with crypts at base.
- **Anal glands (6–12):** drain into crypts; ducts traverse internal sphincter → intersphincteric plane.
- **Clinical relevance:** obstruction → **cryptoglandular abscess → fistula-in-ano**.

4. Hemorrhoidal Cushions

- Submucosal vascular pads at:
  - **Left lateral**
  - **Right anterior**
  - **Right posterior**
- Blood supply: **6 terminal hemorrhoidal arteries**.
- Venous drainage:
  - **Above dentate line:** internal iliac
  - system
- **Bleeding is arterial**, not venous.

5. Sphincter Complex

Internal Anal Sphincter (IAS)

- Smooth muscle, autonomic control.
- Continuation of rectal circular muscle.
- Provides **50–85%** of resting tone.

External Anal Sphincter (EAS)

- Striated muscle, voluntary + reflex control.
- Components:
  - Subcutaneous
  - Superficial
  - Deep
- Innervation: **inferior rectal branch of pudendal nerve (S2–S3)** + **S4 perineal branch**.

Puborectalis

- Part of levator ani; forms **rectal sling**.
- Maintains acute rectoanal angle → continence.

6. Innervation

- IAS: sympathetic (L5), parasympathetic (S2–S4).
- EAS: pudendal nerve (S2–S3) + S4.
- Sensation:
  - **Above dentate line:** visceral (poorly localized).
  - **Below dentate line:** somatic (painful).

II. PHYSIOLOGY

1. Continence

Requires:

- Rectal compliance
- Intact IAS & EAS
- Puborectalis sling
- Sensory discrimination (solid vs liquid vs gas)

2. Defecation

- Rectal distention → IAS relaxation (rectoanal inhibitory reflex).
- Sampling reflex → discrimination.
- If appropriate:
  - EAS + puborectalis relax

- Rectoanal angle straightens
- Abdominal pressure ↑ → evacuation

III. DIAGNOSIS OF ANORECTAL DISEASE

1. History

Key symptoms:

- Pain (sharp with BM → fissure; constant → abscess; painless bleeding → hemorrhoids)
- Bleeding (bright red vs dark, on paper vs mixed)
- Prolapse
- Seepage/soiling
- Itching
- Bowel habits (frequency, straining, stool caliber)
- Sexual history (STDs, HPV, HIV)
- Obstetric history (tears, episiotomy)
- Prior anorectal surgery

2. Physical Examination

- Inspection: skin tags, fissures, prolapse, thrombosis, fistula openings.
- Digital rectal exam:
  - Tone
  - Masses
  - Tenderness
  - Puborectalis function
- Anoscopy:
  - Hemorrhoids
  - Dysplasia
  - Condyloma
  - Purulence (fistula)

IV. IMAGING & PHYSIOLOGIC TESTING

1. Endoanal Ultrasound

- Best for:
  - IAS/EAS defects
  - Obstetric injury
  - Fistula mapping (intersphincteric vs transsphincteric)

2. MRI

- Best for:
  - Complex fistulas
  - Pelvic sepsis
  - Anal/rectal cancer staging
  - Mesorectal involvement
  - Radial margin assessment

3. Anorectal Manometry

- Measures:
  - Resting & squeeze pressures
  - Rectal sensation
  - RAIR
  - Balloon expulsion
- Used for:
  - Incontinence
  - Dyssynergic defecation

V. INTERNAL HEMORRHOIDS

1. Etiology

- Straining
- Constipation
- Increased intraabdominal pressure
- Aging → connective tissue deterioration
- Venous engorgement → prolapse, bleeding

2. Symptoms

- **Painless bright red bleeding**
- Prolapse
- Mucus discharge
- Hygiene difficulty

3. Grading (Table 53.1)

- **Grade I:** bleed only
- **Grade II:** prolapse, reduce spontaneously
- **Grade III:** prolapse, manual reduction
- **Grade IV:** irreducible prolapse

4. Initial Management

- Fiber + water (64 oz/day)
- Avoid straining
- Limit toilet time
- Sitz baths
- Topical agents (witch hazel, hydrocortisone short-term)

5. Office Procedures

Rubber Band Ligation (RBL)

- Most effective office therapy.
- Band placed **above dentate line** → ischemia → fibrosis.
- Avoid in anticoagulated patients.

Sclerotherapy

- Phenol or sodium tetradecyl sulfate.
- Good for anticoagulated patients.

Infrared Coagulation (IRC)

- Grade I–II disease.

VI. EXTERNAL HEMORRHOIDS

1. Thrombosed External Hemorrhoid

- Severe acute pain
- Tender perianal mass
- Often after constipation or diarrhea

2. Management

- If <72 hours or severe pain → **excision** (better than thrombectomy).
- If >72 hours → conservative:
  - Sitz baths
  - NSAIDs
  - Stool softeners
  - Lidocaine ointment

VII. SURGICAL HEMORRHOIDECTOMY

Indications

- Grade III–IV
- Combined internal + external disease
- Large skin tags
- Failure of office therapy

Techniques

Closed (Ferguson)

- Less pain
- Faster healing
- Lower bleeding risk

Open (Milligan–Morgan)

- Useful for large disease burden

Key Principles

- Preserve IAS fibers
- Ligate pedicle
- Avoid circumferential excision (stenosis risk)

Complications

- Bleeding (1–2%)
- Urinary retention (1–15%)
- **Pelvic sepsis** (rare but life-threatening)
- Stenosis
- Incontinence (if sphincter injured)

VIII. STAPLED HEMORRHOIDOPEXY

Mechanism

- Removes circumferential mucosa above dentate line
- Pulls hemorrhoids proximally
- Interrupts arterial inflow

Limitations

- Does **not** treat external hemorrhoids
- Higher recurrence

Serious Complications

- Rectovaginal fistula
- Staple line bleeding
- Chronic pain
- Stricture
- Pelvic sepsis
- Reported deaths

IX. DOPPLER-GUIDED HEMORRHOID ARTERY LIGATION (HAL)

- Identifies feeding arteries → ligation
- Add mucopexy for prolapse
- Good short-term results
- Not cost-effective vs RBL

X. ANAL FISSURE

1. Definition

- Tear in anoderm from anal verge → dentate line.

2. Symptoms

- **Sharp, “razor blade” pain with BM**
- Post-defecation spasm
- Bright red bleeding
- Sentinel pile (chronic)
- Hypertrophied papilla (chronic)

3. Locations

- **Posterior midline (75%)**
- Anterior midline (more common in women)
- **Off-midline = atypical** → think:
  - Crohn disease
  - HIV
  - TB
  - Syphilis
  - Leukemia
  - Anal cancer

4. Diagnosis

- Often clinical
- DRE/anoscopy often intolerable
- EUA if unclear

5. Management

Acute fissure

- Fiber + fluids
- Sitz baths
- Stool softeners
- Topical nitrates (headache common)

- Topical calcium channel blockers (diltiazem, nifedipine)

Chronic fissure

- Medical therapy less effective
- **Lateral internal sphincterotomy (LIS)** = gold standard
- Healing >90%
- Risk: minor incontinence (gas > stool)

ANUS & BENIGN ANORECTAL DISEASE
PART II: *Abscess • Fistula-in-Ano • Pilonidal Disease • STDs • Hidradenitis Suppurativa • Perianal Crohn Disease*

XI. PERIANAL ABSCESS & FISTULA-IN-ANO

1. Cryptoglandular Origin

- 90% of abscesses/fistulas arise from **infection of anal glands** located at dentate line.
- Gland ducts traverse IAS → intersphincteric plane → infection spreads along least-resistant paths.

2. Abscess Types

- **Perianal** (most common)
- **Ischiorectal**
- **Intersphincteric**
- **Supralevator**
- **Horseshoe** (posterior midline, deep postanal space)

3. Clinical Presentation

- Severe, constant anal pain
- Fever, malaise (systemic signs)
- Fluctuance, erythema
- Pain worsens with sitting
- DRE may show bogginess (avoid aggressive exam)

4. Management

- **Incision & drainage (I&D)** is mandatory.
- Antibiotics **not** routinely required unless:
  - Immunosuppressed
  - Diabetes
  - Cellulitis
  - Valvular heart disease
  - Systemic infection

5. Fistula-in-Ano

Classification (Parks)

- **Intersphincteric** (most common)
- **Transsphincteric**
- **Suprasphincteric**
- **Extrasphincteric**

Goodsall's Rule

- Posterior external opening → curved tract to posterior midline.
- Anterior opening → straight radial tract (except >3 cm from verge → posterior curve).

6. Fistula Management

Simple fistula

- Low intersphincteric or low transsphincteric
- **Fistulotomy** = gold standard
- High healing, low incontinence risk

Complex fistula

- High transsphincteric
- Suprasphincteric
- Horseshoe
- Anterior fistula in women
- Crohn disease
- Prior incontinence

Management options:

- Seton (draining or cutting)
- LIFT (ligation of intersphincteric fistula tract)
- Advancement flap
- Fibrin glue / plugs (low success)

XII. PILONIDAL DISEASE

1. Etiology

- Hair penetration into natal cleft → foreign-body reaction
- Risk factors:
  - Deep cleft
  - Obesity
  - Hirsutism
  - Prolonged sitting
  - Family history

2. Acute Pilonidal Abscess

- Painful swelling in gluteal cleft
- Management: **I&D**
- Do NOT excise during acute infection

3. Chronic Pilonidal Sinus

- Persistent drainage, pits, granulation tissue

4. Surgical Options

Simple disease

- Pit picking
- Minimal excision + curettage

Complex/recurrent disease

- Off-midline closure preferred:

- **Karydakis flap**
- **Bascom cleft lift**
- **Limberg flap**

Avoid midline closure

- High recurrence
- Poor wound healing

XIII. SEXUALLY TRANSMITTED ANORECTAL DISEASES

1. HPV / Condyloma Acuminata

- Cauliflower-like lesions
- Caused by HPV 6/11
- High-risk HPV (16/18) → dysplasia, cancer
- Treatment:
  - Topical (imiquimod, podophyllin)
  - Cryotherapy
  - Electrocautery
  - Laser ablation
  - Recurrence common

2. Herpes Simplex Virus

- Painful grouped vesicles → ulcers
- Diagnosis: PCR
- Treatment: acyclovir/valacyclovir

3. Syphilis

- Painless chancre
- Secondary: condyloma lata
- Diagnosis: RPR/VDRL + treponemal test
- Treatment: penicillin

4. Gonorrhea / Chlamydia

- Proctitis: discharge, pain, tenesmus
- Diagnosis: NAAT
- Treatment: ceftriaxone + doxycycline

5. HIV-Associated Anorectal Disease

- Severe proctitis
- Atypical fissures
- Large condyloma
- Increased risk of AIN/SCC

XIV. HIDRADENITIS SUPPURATIVA (HS)

1. Pathophysiology

- Chronic inflammatory disease of apocrine glands
- Follicular occlusion → abscesses → sinus tracts → scarring
- Common in perineum, groin, axilla

2. Clinical Features

- Painful nodules
- Recurrent abscesses
- Draining sinus tracts
- "Double comedones"
- Scarring, fibrosis

3. Management

Medical

- Weight loss
- Smoking cessation
- Antibiotics (tetracyclines)
- Biologics (adalimumab)

Surgical

- I&D for acute abscess
- Wide local excision for chronic disease
- Flap reconstruction for extensive involvement

XV. PERIANAL CROHN DISEASE

1. Features

- Multiple fistulas
- Large skin tags
- Atypical fissures (off-midline)
- Deep ulcers
- Recurrent abscesses
- Poor wound healing

2. Management Principles

- Avoid aggressive fistulotomy (risk of incontinence)
- **Seton placement** for drainage
- Biologic therapy (anti-TNF)
- Antibiotics (ciprofloxacin/metronidazole)
- Combined medical + surgical approach

XVI. ANORECTAL EMERGENCIES

1. Necrotizing Soft Tissue Infection (Fournier's Gangrene)

- Rapidly progressive necrosis of perineum
- Risk factors: diabetes, immunosuppression
- Management:
  - Immediate wide debridement
  - Broad-spectrum antibiotics
  - Hemodynamic support
  - Serial debridements
  - Fecal diversion if needed

2. Strangulated Prolapsed Hemorrhoids

- Severe pain, edema, ulceration
- Management:
  - Pain control
  - Manual reduction if possible

- Urgent hemorrhoidectomy if necrotic

XVII. ANAL NEOPLASIA (AIN & CANCER)

1. Anal Intraepithelial Neoplasia (AIN)

- HPV-related dysplasia
- High-risk groups:
  - HIV
  - MSM
  - Immunosuppressed
- Treatment:
  - Ablation (laser, cautery)
  - Topical imiquimod
  - Surveillance

2. Squamous Cell Carcinoma (SCC)

- Most common anal cancer
- Risk factors: HPV, HIV, smoking
- Symptoms: bleeding, pain, mass, pruritus
- Diagnosis: biopsy
- Treatment: **Nigro protocol** (chemoradiation)
- Surgery (APR) only for persistent/recurrent disease

3. Perianal Paget Disease

- Eczematous perianal rash
- Associated with underlying malignancy
- Treatment: wide local excision ± mapping biopsies

4. Anal Melanoma

- Rare, aggressive
- Often amelanotic
- Treatment: wide excision or APR
- Poor prognosis

5. Adenocarcinoma of Anal Canal

- Arises from anal glands or distal rectum
- Managed like rectal cancer:
  - TME
  - Chemoradiation depending on stage

ANUS & BENIGN ANORECTAL DISEASE: CHEAT SHEET

1. Anatomy Essentials
- **Anal canal (surgical):** 4 cm from verge → anorectal ring.
- **Dentate line:** key landmark for sensation, lymphatics, pathology.
- **Epithelium:**
  - Above dentate: columnar (visceral).
  - Below dentate: squamous (somatic).
- **Anal glands:** 6–12, drain into crypts → obstruction → abscess → fistula.
- **Hemorrhoidal cushions:** left lateral, right anterior, right posterior; arterial bleeding.
- **Sphincters:**
  - IAS: smooth muscle, 50–85% resting tone.
  - EAS: striated, voluntary + reflex.
  - Puborectalis: maintains rectoanal angle.

2. Physiology
- **Continence:** IAS + EAS + puborectalis + rectal compliance + sensory discrimination.
- **Defecation:** rectal distention → IAS relaxes → sampling → EAS/puborectalis relax → evacuation.

3. Diagnosis
- **Pain patterns:**
  - Sharp with BM → fissure.
  - Constant, throbbing → abscess.
  - Painless bleeding → internal hemorrhoids.
- **Bleeding:** bright red, on paper vs mixed in stool.
- **Exam:** inspect → DRE → anoscopy.
- **Imaging:**
  - Endoanal US → sphincter defects, fistula mapping.
  - MRI → complex fistula, cancer staging.
  - Manometry → incontinence, dyssynergia.

4. Internal Hemorrhoids
- **Grades:**
  - I: bleed only
  - II: prolapse, reduce spontaneously
  - III: prolapse, manual reduction
  - IV: irreducible
- **Initial therapy:** fiber, fluids, avoid straining, sitz baths.
- **Office procedures:**
  - **RBL** (best)
  - Sclerotherapy (good for anticoagulated)
  - IRC (grade I–II)
- **Surgery:** grade III–IV, combined disease, failed office therapy.

5. External Hemorrhoids
- **Thrombosed:** severe acute pain, tender mass.
- **<72 hours:** excision (better than thrombectomy).
- **>72 hours:** conservative (sitz baths, NSAIDs, stool softeners).

6. Hemorrhoidectomy
- **Closed (Ferguson):** less pain, faster healing.
- **Open (Milligan–Morgan):** for large disease.
- **Key:** preserve IAS, avoid circumferential excision.
- **Complications:** bleeding, urinary retention, stenosis, pelvic sepsis (rare but lethal).

7. Stapled Hemorrhoidopexy
- Pulls hemorrhoids proximally; removes mucosa above dentate line.
- **Does NOT treat external hemorrhoids.**
- Serious complications: rectovaginal fistula, sepsis, stricture.

8. Doppler-Guided HAL
- Ligation of feeding arteries + mucopexy.
- Good short-term results; not cost-effective vs RBL.

9. Anal Fissure
- **Posterior midline (75%)**; anterior in women.
- **Atypical/off-midline:** Crohn, HIV, TB, syphilis, cancer.

- **Acute:** fiber, fluids, sitz baths, topical nitrates/CCBs.
- **Chronic:** lateral internal sphincterotomy (LIS) → >90% healing; small risk of gas incontinence.

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10. Perianal Abscess

- Cryptoglandular origin.
- **Management:** I&D only.
- Antibiotics only if immunosuppressed, diabetic, cellulitis, systemic infection.

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11. Fistula-in-Ano

- **Parks classification:** intersphincteric, transsphincteric, suprasphincteric, extrasphincteric.
- **Goodsall's rule:** posterior → curved; anterior → straight (unless >3 cm).
- **Simple fistula:** fistulotomy.
- **Complex fistula:** seton, LIFT, advancement flap; avoid aggressive division.

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12. Pilonidal Disease

- Hair penetration → chronic sinus.
- **Acute abscess:** I&D.
- **Chronic:** pit picking, minimal excision.
- **Complex:** off-midline closure (Karydakis, Bascom, Limberg).
- Avoid midline closure.

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13. Sexually Transmitted Anorectal Disease

- **HPV:** condyloma; treat with topical agents or ablation; recurrence common.
- **HSV:** painful ulcers; treat with antivirals.
- **Syphilis:** painless chancre; treat with penicillin.
- **Gonorrhea/Chlamydia:** proctitis; treat with ceftriaxone + doxycycline.
- **HIV:** severe proctitis, atypical fissures, high AIN/SCC risk.

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14. Hidradenitis Suppurativa

- Chronic apocrine inflammation → abscesses, sinus tracts, scarring.
- **Medical:** tetracyclines, biologics, lifestyle.
- **Surgical:** wide excision for chronic disease.

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15. Perianal Crohn Disease

- Multiple fistulas, large skin tags, atypical fissures, deep ulcers.
- **Management:**
  - Setons (avoid fistulotomy)
  - Anti-TNF therapy
  - Antibiotics
  - Combined medical + surgical approach

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16. Anorectal Emergencies

- **Fournier's gangrene:** immediate debridement + broad antibiotics + resuscitation.
- **Strangulated hemorrhoids:** urgent hemorrhoidectomy if necrotic.

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17. Anal Neoplasia

- **AIN:** HPV-related; treat with ablation/topicals.
- **SCC:** treat with chemoradiation (Nigro protocol).
- **Paget disease:** wide excision; search for underlying malignancy.
- **Melanoma:** wide excision or APR; poor prognosis.
- **Adenocarcinoma:** treat like rectal cancer (TME ± chemoradiation).

Question Bank 1

1. A 41-year-old man presents with sudden onset of severe anal pain for 24 hours. He cannot sit comfortably. On exam, there is a tense, bluish, exquisitely tender nodule at the anal verge. He is otherwise healthy and not on anticoagulation. What is the most appropriate management?
a. Sitz baths and stool softeners only
b. Thrombectomy through a small incision
c. Excision of the thrombosed external hemorrhoid
d. Rubber band ligation of the hemorrhoid
Correct answer: c. Excision of the thrombosed external hemorrhoid
Explanation: This is a classic **thrombosed external hemorrhoid**—acute onset, severe pain, bluish perianal nodule. When symptoms are present for **<72 hours**, the best treatment is **complete excision of the thrombosed hemorrhoid**, not just evacuation of clot. Excision provides faster pain relief and significantly lowers recurrence compared with simple thrombectomy. Sitz baths alone are inadequate for this level of pain. Rubber band ligation is used for **internal hemorrhoids above the dentate line**, not for external thrombosis.

2. A 33-year-old woman presents with painless bright red bleeding on toilet paper and in the bowl. She denies pain. Anoscopy reveals internal hemorrhoids that prolapse with straining but reduce spontaneously after defecation. How would you grade her hemorrhoids?
a. Grade I
b. Grade II
c. Grade III
d. Grade IV
Correct answer: b. Grade II
Explanation: Internal hemorrhoids are graded by **degree of prolapse**:

- Grade I: bleed but do not prolapse.
- Grade II: prolapse with defecation but **reduce spontaneously**.
- Grade III: prolapse and require **manual reduction**.
- Grade IV: **irreducible** prolapse.

This patient's hemorrhoids prolapse but reduce on their own → **Grade II**.

3. A 55-year-old man with alcoholic cirrhosis presents with bright red rectal bleeding. Anoscopy shows enlarged internal hemorrhoids. He asks if his hemorrhoids are "from portal hypertension" and whether they are "like varices". Which statement is most accurate?
a. Hemorrhoidal bleeding is primarily venous and due to portal hypertension
b. Hemorrhoidal bleeding is arterial and hemorrhoids are not portal varices
c. Hemorrhoids are direct manifestations of portal hypertension and require TIPS
d. Hemorrhoids are rectal varices and should be banded like esophageal varices
Correct answer: b. Hemorrhoidal bleeding is arterial and hemorrhoids are not portal varices
Explanation: Hemorrhoidal cushions contain **arteriovenous communications**, and bleeding is typically **arterial**, not purely venous. Although the superior hemorrhoidal veins communicate with the portal system, **hemorrhoids are not the same as portal hypertensive rectal varices** and are not considered a direct manifestation of portal hypertension. They are due to degeneration and prolapse of the supporting tissue of the anal cushions, often exacerbated by straining and constipation.

4. A 29-year-old woman reports severe "razor blade" pain with bowel movements and bright red blood on the toilet paper. On gentle separation of the buttocks, you see a linear tear in the posterior midline of the anoderm. What is the most likely diagnosis?
a. Acute anal fissure
b. Chronic anal fissure

c. Crohn-related fissure
d. atypical fissure requiring biopsy
Correct answer: a. Acute anal fissure
Explanation: An **acute anal fissure** presents with intense, sharp pain during defecation and bright red bleeding. It is usually a **shallow linear tear** in the posterior midline. Chronic fissures show additional features such as a sentinel skin tag, hypertrophied anal papilla, and exposed internal sphincter fibers. Atypical fissures are off-midline or multiple and raise concern for Crohn disease, infection, or malignancy.

5. A 44-year-old woman has had anal pain and bleeding for 6 months. Exam reveals a posterior midline fissure with exposed internal sphincter fibers at the base, a sentinel skin tag distally, and a hypertrophied anal papilla proximally. She has failed fiber, sitz baths, and topical diltiazem. What is the best next step?
a. Continue medical therapy for another 3 months
b. Botulinum toxin injection into the internal sphincter
c. Lateral internal sphincterotomy
d. Hemorrhoidectomy
Correct answer: c. Lateral internal sphincterotomy
Explanation: This is a **chronic anal fissure** (duration >6–8 weeks, sentinel pile, hypertrophied papilla, exposed IAS). First-line therapy is medical (fiber, sitz baths, topical nitrates or CCBs). After failure of adequate medical therapy, the **gold standard** is **lateral internal sphincterotomy (LIS)**, which reduces resting sphincter pressure, improves blood flow, and achieves >90% healing. Botox is an option but has lower long-term success than LIS.

6. A 36-year-old man presents with anal pain and bleeding. Exam reveals a fissure located in the right lateral position. Which of the following is the most appropriate next step?
a. Treat as idiopathic fissure with topical therapy
b. Evaluate for Crohn disease, infection, or malignancy
c. Perform immediate LIS
d. Assume it is due to hemorrhoids
Correct answer: b. Evaluate for Crohn disease, infection, or malignancy
Explanation: Most idiopathic fissures occur in the **posterior midline** (75%) or anterior midline (especially in women). Fissures located **off the midline** (lateral) are considered **atypical** and should prompt evaluation for **Crohn disease, HIV, TB, syphilis, leukemia, or anal cancer**. Treating as a simple idiopathic fissure without further workup risks missing serious underlying pathology.

7. A 50-year-old man presents with constant, throbbing anal pain and fever. He has difficulty sitting. On exam, there is a tender, fluctuant mass near the anal verge with overlying erythema. What is the most appropriate management?
a. Oral antibiotics and sitz baths
b. Incision and drainage of the abscess
c. MRI pelvis followed by elective drainage
d. Observation and stool softeners
Correct answer: b. Incision and drainage of the abscess
Explanation: This is a **perianal abscess**, almost always of **cryptoglandular origin**. The cornerstone of treatment is **prompt incision and drainage (I&D)**. Antibiotics alone are inadequate because they do not penetrate the abscess cavity. Imaging is not required for a straightforward superficial abscess. Antibiotics are reserved for patients with diabetes, immunosuppression, extensive cellulitis, or systemic sepsis, and are **adjuncts**, not substitutes, for drainage.

8. Six weeks after I&D of a perianal abscess, a 33-year-old man reports persistent drainage from a small opening near the anus. He has no fever or systemic symptoms. What is the most likely diagnosis?
a. Recurrent perianal abscess
b. Fistula-in-ano
c. Pilonidal sinus
d. Hidradenitis suppurativa
Correct answer: b. Fistula-in-ano
Explanation: Up to **30–50%** of perianal abscesses progress to a **fistula-in-ano**, which presents as a chronic draining external opening. Recurrent abscess would present with pain, swelling, and systemic signs. Pilonidal disease is located in the **natal cleft**, not adjacent to the anal verge. HS typically involves multiple nodules and sinus tracts in apocrine areas (groin, axilla, perineum).

9. A 37-year-old man has a chronic draining opening 2 cm posterior to the anal verge. According to Goodsall's rule, what is the most likely course of the fistula tract?
a. Straight radial tract to the nearest point on the dentate line
b. curved tract to the posterior midline

c. curved tract to the anterior midline
d. Extrasphincteric tract bypassing the sphincters
Correct answer: b. curved tract to the posterior midline
Explanation: Goodsall's rule:

- External openings **posterior** to a transverse line through the anus usually have a **curved tract** to the **posterior midline**.
- Anterior openings usually have a **straight radial tract** to the dentate line, unless they are >3 cm from the verge, in which case they may also curve posteriorly.
  This opening is posterior → curved tract to posterior midline.

10. A 32-year-old man has a low intersphincteric fistula with a single posterior external opening close to the anal verge. He has normal continence and no Crohn disease. What is the best definitive treatment?
a. Fistulotomy
b. Cutting seton
c. LIFT procedure
d. Endorectal advancement flap
Correct answer: a. Fistulotomy
Explanation: A **low intersphincteric fistula** is considered **simple**. In a patient with normal continence and no risk factors (e.g., Crohn, prior sphincter injury), **fistulotomy** (lay-open) is the treatment of choice, with high healing rates and low risk of incontinence. Cutting setons and more complex sphincter-sparing procedures are reserved for **high or complex fistulas**.

11. A 29-year-old woman presents with an anterior transsphincteric fistula. She has had two vaginal deliveries with episiotomies and is very concerned about continence. What is the most appropriate management strategy?
a. Fistulotomy
b. Cutting seton
c. Sphincter-sparing procedure such as LIFT
d. No intervention; observation only
Correct answer: c. Sphincter-sparing procedure such as LIFT
Explanation: Anterior fistulas in women are considered **"complex"** because of the higher risk of incontinence due to the relatively shorter and more vulnerable sphincter complex. Fistulotomy or cutting seton would risk significant sphincter division. A **sphincter-sparing approach** such as **LIFT (ligation of intersphincteric fistula tract)** or an advancement flap is preferred.

12. A 45-year-old man presents with severe anal pain and fever. Exam reveals a posterior horseshoe abscess extending across the midline.
Which of the following is the best surgical approach?
a. Single midline incision over the abscess
b. Simple perianal I&D at one side only
c. Drainage of the deep postanal space with lateral counterincisions
d. Antibiotics and observation
Correct answer: c. Drainage of the deep postanal space with lateral counterincisions
Explanation: A **horseshoe abscess** typically involves the **deep postanal space** and extends laterally into the ischiorectal fossae. Adequate drainage requires opening the deep postanal space and creating **lateral counterincisions** to prevent undrained pockets. A single incision is inadequate and leads to recurrence. Antibiotics alone are never sufficient.

13. A 22-year-old man presents with a painful swelling in the midline of the natal cleft. There is erythema and fluctuance, but no obvious anal involvement. What is the most appropriate initial management?
a. Wide excision with primary closure
b. Incision and drainage of the abscess
c. Off-midline flap (Karydakis) at this presentation
d. Antibiotics alone
Correct answer: b. Incision and drainage of the abscess
Explanation: This is an **acute pilonidal abscess**. The correct initial management is **I&D**. Wide excision and flap procedures are reserved for **chronic or recurrent disease**, not for the acute abscess phase. Antibiotics alone are inadequate for a fluctuant abscess.

14. A 27-year-old man has chronic pilonidal disease with multiple midline pits and intermittent drainage. He previously underwent I&D for an abscess. Which operative strategy has the lowest recurrence rate?
a. Wide excision with midline primary closure
b. Wide excision and healing by secondary intention
c. Off-midline flap procedure (e.g., Karydakis or Bascom cleft lift)
d. Repeated I&D as needed

Correct answer: c. Off-midline flap procedure (e.g., Karydakis or Bascom cleft lift)
Explanation: For **chronic or recurrent pilonidal disease**, procedures that **flatten the natal cleft and move the scar off the midline** (Karydakis, Bascom, Limberg) have the **lowest recurrence**. Midline closure has the highest recurrence and wound complication rates. Healing by secondary intention is acceptable but slower and still not as durable as off-midline flap techniques.

15. A 34-year-old man presents with multiple cauliflower-like perianal lesions. Biopsy confirms condyloma acuminata associated with HPV 6/11. He is HIV-negative. What is the most appropriate management?
a. Observation only
b. Wide local excision with APR
c. Topical or ablative therapy (e.g., imiquimod, cautery, laser)
d. Chemoradiation
Correct answer: c. Topical or ablative therapy (e.g., imiquimod, cautery, laser)
Explanation: Perianal **condyloma acuminata** are caused by low-risk HPV types (6/11). Treatment is aimed at **local control** using topical agents (imiquimod, podophyllin) or ablative methods (electrocautery, laser, cryotherapy). Recurrence is common. APR and chemoradiation are reserved for invasive malignancy, not benign condyloma.

16. A 29-year-old man with HIV presents with severe perianal pain and grouped vesicles on an erythematous base around the anus. What is the most likely diagnosis?
a. HPV condyloma
b. Herpes simplex virus infection
c. Primary syphilis
d. Hidradenitis suppurativa
Correct answer: b. Herpes simplex virus infection
Explanation: HSV causes **painful grouped vesicles** that may ulcerate. HPV condyloma are typically painless, verrucous, cauliflower-like lesions. Primary syphilis presents with a **painless chancre**. HS presents with nodules and sinus tracts, not vesicles.

17. A 40-year-old man presents with a painless ulcer at the anal verge. He has a history of unprotected sexual intercourse. RPR is positive. What is the most likely diagnosis?
a. HSV infection
b. Primary syphilis
c. Crohn disease
d. Anal fissure
Correct answer: b. Primary syphilis
Explanation:
Primary syphilis classically presents with a **painless chancre** at the site of inoculation. HSV ulcers are painful. Crohn disease causes deep, often multiple ulcers and fissures, usually with other GI symptoms. Anal fissures are linear tears with severe pain during defecation.

18. A 31-year-old man who practices receptive anal intercourse presents with rectal pain, tenesmus, and purulent discharge. NAAT is positive for Neisseria gonorrhoeae. What is the most appropriate treatment?
a. Doxycycline alone
b. Ceftriaxone
c. Penicillin G
d. Metronidazole
Correct answer: b. Ceftriaxone
Explanation: Gonococcal proctitis is treated with **ceftriaxone**. Doxycycline is used for chlamydial infections. Penicillin treats syphilis. Metronidazole is used for anaerobic infections and trichomonas, not gonorrhea.

19. A 28-year-old woman presents with recurrent painful nodules and draining sinus tracts in the groin and perineum. On exam, there are multiple scars and “double comedones”. What is the most likely diagnosis?
a. Pilonidal disease
b. Hidradenitis suppurativa
c. Fistula-in-ano
d. Condyloma acuminata
Correct answer: b. Hidradenitis suppurativa
Explanation: Hidradenitis suppurativa is a chronic inflammatory disease of apocrine gland–bearing areas (axilla, groin, perineum) characterized by **recurrent abscesses, sinus tracts, scarring, and double comedones**. Pilonidal disease is localized to the natal cleft. Fistula-in-ano usually has a single tract from the