Round Table
Pilonidal Disease

Pilonidal Disease: Anatomy

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Disclosure Information
I have nothing to disclose
Pilonidal Disease - Objectives

1. Describe the history of Pilonidal Disease
2. Review Anatomical structures
3. Discuss tips for taking a thorough history and physical

Pilonidal Disease - History

- 1833 - First described by Mayo
- 1880 - Hodge - coined the term "pilonidal" from its Latin origins
- 1941-1945 – called "Jeep" disease b/c so many WWII soldiers were treated for this - nearly 80,000 US soldiers
  - Fueled research and treatment techniques (return to battle fast)
- **Etiology** - initially thought to be from embryologic origin, after WWII prevailing idea was from hair penetrating skin and causing granulomatous effects in the cavity - Patey and Scarf

Pilonidal Disease – Epidemiology/Definition

- Incidence - 26 per 100,000 population
- Male to female ratio - 3-4:1.
- Patient characteristics – predominantly white, late teens to early 20s - decreasing after age 25 and rarely occurs after age 45

PILONIDAL – referring to presence of hair in a dermoid cyst or in deeper layers of the skin

Dermoid cyst – saclike growth present at birth – can contain hair, teeth etc. Skin structures trapped inside – same make-up as outer skin (hair, sweat glands, sebaceous glands etc)
How does it happen?

3 parts to pilonidal formation:
(1) the invader, hair
(2) the force, causing hair penetration
(3) the vulnerability of the skin
Forms of Pilonidal Disease

Pilonidal:
- Pits – tiny openings that may or may not cause problems
- Sinus
- Cyst – symptomatic vs asymptomatic
- Infected Cyst
- Recurrent Cyst

Pits

Pilonidal Sinus

What Causes Them and What Are The Symptoms

Secondary opening
Skin pit
Primary tract
Pilonidal abscess or cyst

4
References


Pilonidal Disease: Preoperative Management

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Disclosure Information

I have nothing to disclose.
Pilonidal Disease – Preoperative

Objectives
- Identify common risk factors associated with Pilonidal disease
- Describe significant findings of Preoperative History and Physical Exam
- Define common differential diagnoses associated with Pilonidal disease
- Define acute, chronic and complex stages of Pilonidal disease
- Discuss preoperative care of Pilonidal disease
- Discuss non-operative management of Pilonidal disease

Pilonidal Disease - Preoperative

Risk Factors
- Common in Adolescents (puberty-40 years of age)
- Male to female ratio 3:1
- Family history of Pilonidal disease
- Obesity/sedentary lifestyle
- Poor personal hygiene/sweating
- Thick, coarse hair
- Buttocks friction/sitting jobs

Pilonidal Disease - Preoperative

Chief Complaint

History of Presenting Illness (HPI)
- Duration and severity of symptoms including presence of painful mass to sacral area, fevers, redness or swelling, purulent/blood tinged drainage, sacral pits
- History of pilonidal disease or recurrent abscesses
- Previous MRSA infections
- Prior non-operative treatment including hair removal, skin exfoliation, sitz baths, prior use of antibiotics, wound care
- Past surgical history including incision and drainage, excision of pilonidal abscess/cyst, wound care, silver nitrate to granulation tissue
Pilonidal Disease - Preoperative

Preoperative History and Physical (H&P)

- **Past medical history**: Review of systems, birth history, medication/food allergies, current medications/vitamins, immunization status.
- **Past surgical history**: Prior anesthesia/sedation (reactions), OSA/asthma, seizures, bleeding/clotting disorders, cardiac history, diabetes (may impair wound healing), other specialists involved (preoperative clearances), recent use of steroids.
- **Social history**: School attendance, involvement in activities or sports, support for home wound care and follow up visits.
- **Family history**: Preoperative risk factors such as obesity, clotting/bleeding disorders, HTN, sudden cardiac death, complications with anesthesia, cancers.

Pilonidal Disease - Preoperative

Physical Exam

- Sacral tenderness, erythema or cellulitis
- Fluctuant abscess or mass
- Location and quality of drainage
- Sacral dimple
- Sacral sinus/pit formation above natal cleft
- Perianal abscess or fistula
- Anal fissures

Pilonidal Disease – Preoperative

Pilonidal Disease
Pilonidal Disease - Preoperative

Differential Diagnoses
- Perianal abscess or fistula
- Crohn's disease
- Skin infections
- Sacrococcygeal teratoma
- Dermoid cyst
- Hidradenitis suppurativa
- Sacral dimple
- Squamous cell carcinoma

Pilonidal Disease - Preoperative

Diagnosis: Pilonidal Disease Categorization
- **Acute:** Acute formation of abscess or pilonidal cyst infection requiring incision and drainage, antibiotics for cellulitis, sitz baths, warm compresses, good hygiene, future hair removal
- **Chronic:** Asymptomatic pits or sinus formation that occurs after pilonidal cyst/abscess drainage and may cause recurrent infections. The sinus pits may heal, close on own or require surgical excision. May require local wound care such as silver nitrate application to granulation tissue or dressing changes
- **Complex or recurrent:** Surgical excision of previous wound and scar with removal of inflamed tissue. Occurs with reinfection of first abscess drainage, chronic friction or a sinus present that was not previously seen

Pilonidal Disease - Preoperative

Operative Management
- PMD history and physical within 30 days of OR date
- Preoperative clearances
- Review surgical risks and benefits
- Incision and drainage of abscess/pilonidal cyst
- Pilonidal cyst excision with primary versus delayed closure, wound vac device, etc.
- Postoperative wound care/dressing changes, activity or return to school restrictions, follow up considerations
Non-operative Management
- Hair removal with chemical depilatories every 2 weeks, shaving, electrolysis, laser hair treatments
- Good personal hygiene, sitz baths, warm compresses
- Oral antibiotics for recurrent abscess or cellulitis
- Phenol injections or fibrin glue to fill sinus cavity and eliminate granulation tissue
- Abscess reoccurrence rate is ~25-50%
- Seek medical attention with erythema or pain, redness or swelling, purulent drainage to sacral area, sinus/pit formation, fevers

Family counseling – How do you support?
- No imaging needed unless concern for sacral dimple or spina bifida
- No labs unless concern for bleeding/clotting disorders, anemia or other chronic medical conditions
- Explanation of diagnosis and treatment options including non-operative versus operative management, review surgical risks and benefits
- Wound care teaching
- Abscesses require drainage & antibiotics for cellulitis but chronic pilonidal disease or sinus drainage is not usually infectious!

Preoperative teaching – Methods and Documentation
- Discussion
- Patient education handouts – APSNA website
- Preoperative booklet
- Pain management
- Wound care and dressing changes
- Parent return demonstration
- Follow up care
- After visit summary
References


Disclosure Information

No Disclosures

Objectives

- Review risk factors of surgical intervention of pilonidal cyst/sinus disease
- Discuss different surgical techniques used in excision of pilonidal cyst/sinus disease
- Discuss risks and recurrence of different surgical techniques used in pilonidal cyst/sinus disease excision

Pilonidal Sinus/Cyst Disease

- Etiology under debate
- Penetration of hair in the intergluteal cleft
  - Foreign body reaction
  - Inflammation
  - Abscess formation
Pilonidal Abscess

- Probe the sinus tract
- Unroof
- Dressing care to avoid premature healing of skin
- Multiple daily Sitz baths
- Recovery: **6 to 13 weeks**

60% resolve without further need for intervention

Pilonidal Sinus

Probing of Sinus Tract

- Probe the sinus tract
- Unroof
- Dressing care to avoid premature healing of skin
- Multiple daily Sitz baths
- Recovery: **6 to 13 weeks**

60% resolve without further need for intervention
When to Excise

- Recurrent exacerbations/infections
- Multiple I&Ds, drain placements
- Complex and persistent wound care
- Pain
- Missed school days or productivity over time

Surgical Techniques

- Excision & Curettage of all sinus tracts
- Excision & Curettage of all sinus tracts and/or Marsupialization
- Bascom’s operation
- Flaps
  - Karydakis flap
  - Limberg rhomboid flap
  - VY-plasty
  - Z-plasty

Excision & Curettage of All Sinus Tracts

- Sinus located (methylene blue)
- Excision of all sinus tracts
- Washout
- Incision left out to heal by secondary intention
**Closure Techniques**

- Primary closure (sutures or staples)
- Daily cleansing and packing of cavity
- Negative Pressure Wound Therapy (NPWT) closure*

* Time for closure (2-6 weeks-many months) depends on many factors-body habitus, wound size, wound environment, compliance, and complications.
NPWT Dressing Change S/P Excision

Additional therapies to assist healing

- Antibiotics (optional)
- Hair removal (shaving, depilatory, clipping, or laser hair removal)
- Marsupialization
  - Decrease wound size
  - Faster healing time
  - Prevent early wound closure

Primary closure techniques

- After removal of sinuses, close incision:
  - Midline
  - Oblique
  - Lateral to midline
  - Flap over wound
Surgical Techniques - Marsupialization

- Pilonidal follicles excised individually
- Small incision lateral to natal cleft/excised follicles
- Gauze run through excised follicles and incision
- Left open or closed

Bascom’s Operation

- Pilonidal follicles excised individually
- Small incision lateral to natal cleft/excised follicles
- Gauze run through excised follicles and incision
- Left open or closed

Karydakis Flap

- Asymmetric technique that distorts the appearance of the gluteal cleft and are often avoided in the pediatric population.
Limberg rhomboid flap

- Lower recurrence rate (incision away from midline)
- Less tension, less pain (faster return to work & shorter hosp.)
- Complications
  - Wound infection
  - Seroma
  - Wound separation
  - Flap necrosis

VY-plasty

- Fasciocutaneous flap
- Complex disease
- Unilateral or bilateral
- Used in wide excision and recurrent PSD
- Close larger defects
- Recurrence 0=11.1% (2)

Z-plasty

- Shorter healing time
Recurrence Rates

- Sinus tract unroofing 2% to 10%
- Marsupialization 4% to 8%
- Excision and closure 1% to 21%

Case Study

Pilonidal mass vs Pilonidal

Myxopapillary Ependymoma

- Rarely occurs in pelvic cavity
  - In pediatrics, usually presents intracranial
  - In adults, in spinal
- Most anaplastic
- Treatment: Full resection, clear margins
- Case: 12 year old male with 1-2 week hx of mass
  - Imaging (CT chest, abd., pelvis, Bone scan, MRI brain, & then continued imaging q3months with hemoc with pelvic MRI)
References


Pilonidal Disease: Postoperative Care

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Disclosure Information

I have nothing to disclose.

Objectives

- Discuss care after drainage of acute abscess or removal of pits
- Review recommendations after extensive intraoperative surgical excision of pilonidal disease and/or reconstruction
- Describe aspects of maintenance care common to all procedures

Care recommended after all procedures

- Good, consistent hygiene – must be stressed
- Routine hair removal
- Both are imperative to promote healing and prevent recurrence
- Dressing to allow aeration of area

- Only 15% of patients with Pilonidal Disease need large excision, remaining can be managed successfully with above measures
Pit Removal in Office

- Minor procedure performed with local anesthetic
- May require 1 – 2 sutures
- Possible need for packing of fistulas or opening created off midline for drainage
- Dressing over area
- Silver nitrate to hypergranulation tissue or open fistula tracts at follow-up visit
- Hygiene and hair removal

Incision and Drainage of Acute Abscess

- If cellulitis present treat with antibiotics, including coverage of anaerobes
- Do not pack
- Sitz baths
- Silver nitrate if hypergranulation forms
- Dressing to allow aeration
- Hygiene and hair removal
- May need pit removal to prevent recurrence after edema resolves

Open Procedure

- Excision of pits and sinus tracts with wound left open to heal by secondary intention
- Lower recurrence but longer healing time
- NPWT
- Wet to dry
- Irrigations
- Hygiene and hair removal
- May return to activity immediately in most cases
Cleft Lift Procedure – Excision with closure

- Incision will be off midline – considered standard treatment for surgical excision with closure
- Discharge from hospital on day of surgery or POD #1
- Cephalexin and metronidazole pre-op, then some recommend PO for 4 days post-op, not well supported that antibiotics decrease post-op infection
- Drain placement will be individualized to patient - vessel loop, penrose, bulb drain
- Early mobility, slow walking, may sit, some recommend minimally

Cleft Lift Procedure - continued

- Remove sutures in 1 – 2 weeks, some surgeons remove ½ at one week then other half
- Closure varies: tape in X to decrease shearing, mattress sutures, glue, absorbable sutures
- Incision care varies by specifics but all recommend cleaning routinely
- Hygiene and hair removal continues long-term to prevent recurrence and infection

References


Pilonidal Disease: Long-Term Management

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Disclosure Information

- No financial disclosures or conflicts of interest
### Objectives

- Identify best practices for long-term management of pilonidal disease
- Optimize open or closed wound environment for wound healing
- Understand the role of hair control and hygiene in successful pilonidal care
- Consider the role of long-term, permanent hair removal to prevent pilonidal disease recurrence and improve wound healing

### Post-Surgical Care: Primary Closure

Optimize wound healing:
- No sports/gym for 6 weeks
- Off-loading to prevent shear injury
- Monitor for wound dehiscence, infection, or recurrence

### Open Wounds: The Basics

- **SHAVING**, **SHAVING**, **SHAVING** – 3-5 cm margin
- **SOAKING**, **SOAKING**, **SOAKING** – daily after removing packing
- Document size, depth, skin, drainage @ visits
- Optimize wound environment: warm, moist, minimize trauma
- Manage pain prior to dressing changes → compliance
Open Wound Packing

- Avoid saline gauze packing (poor absorption, no antibacterial property, frequent changes, lint, abrasive)
- Two dressings:
  - Packing: Alginate with silver, honey, etc for 24 hours+ (next slide)
  - Packing must be flexible, adherent, prevent wound cooling/disruption, avoid wound contamination from stool, be in intimate contact with entire surface area
  - Secondary dressing: soft, woven gauze with border or cover with tape to absorb extra drainage – dressing should prevent granulation tissue from touching
- Dressings should never be too dry or too soaked – adjust material or frequency prn

Dressings

Open Wounds

- For very large, cavernous wounds consider NPWT
- Moisture-management is key for surrounding skin (prevent rashes)
- For small, contracted wounds: d/c packing and only soak
- Beware of biofilm for non-healing chronic “stalled” wounds
Biofilm

Prevention of Recurrences

- Hygiene – soaking
- Hair control most important → shaving + watch for head hair
  - 2 inch margins
- Pit-picking procedure described by Bascom in 1980
  - Small incisions using a punch biopsy
  - Done under local
  - In office
  - Minimal recovery
- Consider Laser Hair Removal

Laser Hair Epilation

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**Midlevel Clinic**

- Pilonidal Clinic started March 2014 by 1 PA + 1 Pedi Surgeon
- All patients enrolled in database, intake and f/u questionnaires
- Streamlined patient education, revamped materials, conservative, non-operative treatment approach, easy access to clinicians
- December 2014 – laser hair removal initiated
- As of March 2017 – seen >160 new patient referrals, 450+ patient encounters, 50-60 patients received laser treatments, 2 patients underwent traditional surgery

**Family Education Materials**

**References**