Pilonidal Disease
A Royal Pain in the ...

Jeffrey A. Sternberg, MD
Attending Colon And Rectal Surgeon
Surgical Director, Center for Inflammatory Bowel Diseases
California Pacific Medical Center
Assistant Professor, Department of Surgery
University of California, San Francisco
School of Medicine

Financial Disclosures

• None
Pilonidal Disease
An Economic Problem

- Affects productive, young adults (teens – 30s)
- Economically important
  - WWII – 80,000 cases
    - Each soldier admitted to Army Hospitals for a mean 55 days
  - Vietnam
    - 2,075 US Navy sailors - 90,392 sick days in 1 year of conflict
  - 1980 > 40,000 operations
    - Mean LOS > 5 days
  - 2011
    - Unknown incidence (est. 70K/yr) because mostly outpatient procedures
    - Young patients still missing school and work

Pilonidal Disease
A compounded problem

- Etiology widely misunderstood
- Leads to over-aggressive treatment that worsens problem
- Over-aggressive surgery results in large midline wounds wounds that may not or are slow to heal

Pilonidal Disease
Etiology

- **Myth:** ‘A congenital disorder caused by an infected cyst’
  - No cyst exists
  - Not a disease of ingrown hair
- Predisposing factors
  - Hairy young guys with deep natal clefts
- Affects the young
  - Teens-30
  - Often ‘burns-out’ after 40, but not always

Pilonidal Disease
Pathophysiology

- An acquired disease
- Not a disease of the skin
- Caused by mechanics of a deep natal cleft
  - Evidence
    - Disease can recur if cleft remains deep after surgery despite removal of infected tissue
    - The disease recurs in new skin in the midline of a deep cleft
- Sequence
  - Hair follicles located in deep natal clefts are traumatized by motion (stretches the follicle)
  - Hair falls out leaving an open pit (aka pore)
  - Shed hair or debris from above lodges in the open pore
  - ‘natal cleft vacuum’
  - Pore gets plugged by Keratin
  - Closed space forms abscess
    - Moist, airless cleft perpetuates the infection
  - Complications of chronic infections
    - Sinus formation to top of cleft
Uncomplicated disease

The Treatment

- Incise and drain abscess
  - Drain laterally
  - Make elliptical incision
  - Don’t pack
  - Antibiotics only if cellulitis

- Be conservative
  - Good hygiene
  - +/- shaving – little data to support
- Pit excision +/- lateral clean-out
- Consider larger operation if recurs

Complex Pilonidal Disease

- Bad primary disease
- Recurrent disease with or w/o prior surgery
- Unhealed wound resulting from surgery
Treatment of Complex Pilonidal Disease

- No Consensus – a misunderstood disease
- Non Surgical Options usually delay definitive treatment:
  - Wound Vacs
  - Wound Care Centers/Dressings/Packings

Surgical Options:
- Traditional operations
  - Wide excision with midline closure or marsupialization
  - Asymmetric closure
  - Flaps

The Argument against Wide Excision

- Report of >80,000 soldiers treated during WWII
- Surgical Treatment = wide excision/marsupialization
  - 4-8 weeks + healing
  - 40% + rates of recurrence or non-healing
  - Eventually outlawed by the Army
- So why must we relearn this valuable lesson?

Pilonidal Disease Misconceptions

- Traditional wide-excision surgical treatment based on misconception that a cyst exists
- ‘Cyst Excision’ followed by:
  - Midline closure under tension, or
  - Marsupialization
- Patient often left with a more serious situation

Cochrane Review supports Asymmetric Procedures

- Cochrane review 2007 w/2009 update:
  - Benefits were clearly shown with off-midline closure compared with midline closure
  - Off-midline closure should become the standard management for pilonidal sinus when closure is the desired surgical option
Pilonidal Disease
Asymmetric Closure

• And we should aim for closure
  – More comfortable
  – Less maintenance
  – Quicker recovery
• Asymmetric Flap Procedures
  – Karydakis
  – The modified Limberg
  – Bascom – the Cleft-Lift
• They all work well

Data Supporting Asymmetric Closure
High heal rates, low recurrences

  – 31 pts with 141 prior operations underwent Cleft Lift repair
  – 20 mo f/u in 87%
  – 100% healed (3 required > 1 operation)
• Tezel et al. Dis Colon Rectum 2009; 52:135
  – 76 patients primary or recurrent disease underwent Cleft-Lift repair
  – Mean f/u 16.4 mo
  – 1.3% recurrence
  – Cleft Lift vs Wide Excision and Packing in Adolescents
  – CL had 2.5% recurrence vs. 20.6% recurrence in WE grp
• Daphan et al. Dis Colon Rectum 2004; 47:233
  – Limberg Flap - 147 patients
  – 4.8% recurrence

Asymmetric Closure Principles
“Shallow, Pad and Close the Cleft”

• Principles
  – Fix the cause
    • Flatten
      – make the cleft less deep
    • Aerate
      – Lateralize the incison
      – Place the majority of the incision in the open air
    • Don’t create or leave ‘Dead Space’
  – Pad the sacrum
  – Close the wound without tension

The Cleft-Lift Procedure

• Outpatient procedure
• Less pain
• Shorter recovery
• Cosmetically superior
• More reliable
• But....
  – Possibly more difficult to learn and master
Pilonidal Disease
The Cleft-Lift Procedure

- Start 2 cm above cleft to avoid creating a divot
- Excise an island of skin but not the infected tissue beneath
- Mobilize flap
- Open the abscess and scrub free of debris
- Score the cavity wall to make mobile
- Divide the A-C ligament or the sub-cut EF muscle
- Fold the sides of the abscess inward and sew the fatty tissue together to obliterate dead-space and pad the sacrum

- Place drain to prevent seroma
- Meticulous closure in multiple layers
- Closed incision is lateral to now-shallowed cleft

The Cleft-Lift Procedure
“Shallow, Pad and Close the Cleft”

- Outpatient procedure
- Spinal or general anesthesia + bupivacaine
- Post-Op
  - Oral antibiotics x 2 weeks
  - Patients can sit and shower
  - Drain removed 7-9 days later (?sooner)
  - Full activity 2 weeks post op
Pilonidal Disease
The Cleft-Lift Procedure

Pilonidal Disease
The Cleft-Lift Procedure

Pilonidal Disease
The Cleft-Lift Procedure

Pilonidal Disease
The Cleft-Lift Procedure
Who Should Do This Operation?

- General Surgeons
- Colon and Rectal
- Plastic Surgeons
- Not for the occasional operator

JAS Cleft-Lift Results

- >400 cases since 2002
  - >200 cases since 2007 with current technique
  - 40% had failed 1+ prior surgeries by others
- After 2007, 1 pt required reoperation for recurrent disease
  - 1 pt hidradenitis
  - 1 sacral osteomyelitis
- Now the primary procedure for complex cases

Surgical Pitfalls

- Is this really pilonidal disease?
- Don’t miss the lowest pit
- Don’t just address the sinus at the top of the cleft
- Don’t place the wound in the midline of a deep cleft
- Don’t leave ‘dead space’

Pilonidal Disease

Conclusions

- Acquired disease due to complications of a deep natal cleft
- Significant economic impact on society
- Pilonidal Disease is an abscess, not a cyst
- Wide excision not needed
- Asymmetric closure supported by Cochrane review and the literature
Pilonidal Disease
A Royal Pain in the ...

Jeffrey A. Sternberg, MD

Attending Colon And Rectal Surgeon
Surgical Director, Center for Inflammatory Bowel Diseases
California Pacific Medical Center

Assistant Professor, Department of Surgery
University of California, San Francisco
School of Medicine