PILONIDAL SINUS

Pilos= hair; nidus= nest (Latin)
First described by Herbert Mayo in 1833 (term first used in 1880 thanks to Hodges) and first case series by Warren in 1854

Epidemiology

Age: 15-30yo (after puberty, hormones affect pilosebaceous gland and alter body hair growth); rare over 40 (Dwight & Maloy, NEJM 1953); rare under 15 (Bailey & Love 2003), declines after 25 (P&P of Surg for the Colon 1992)

Gender: 3:1 male predominance(hirsute, occupational)

Incidence: 26/100000 (Sondenaa et al IntJColoDis1995)
Prevalence

Aetiology

Uncertain; congenital sinus from failure of coalescence of primitive ectoderm?

Risk factors

Family history
Friction eg prolonged sitting (Sondenaa et al)
Sweat/dampness
Poor hygiene
Obesity: BMI>25 (Bolandparvaz)
Deep natal cleft (especially in the obese, where it is also wet and fragile)

Pathogenesis

Karydakis' theory depends on 3 factors
H-hair as an invader
F-force applied driving it into skin; infolding and sequestration of hair follicle
V-vulnerability of skin to penetration deep in natal cleft

Leaves blind-ending tract vulnerable to infection

Clinical features

Acute: abscess
Chronic: sinus +/- pus, pain, fibrous band

Investigations

MANAGEMENT

Risk factor reduction: regular baths, weight loss

Asymptomatic: not recommended to treat
Acute abscess: I&D with delayed definitive treatment (some have aspirated and given antibiotics)

NON-OPERATIVE

PHENOL (CARBOLIC ACID)
Aromatic alcohol with weak acidic properties; sterilises sinus tract and acts as sclerosant, causing granulation and contraction by irritating wall of tract
First described by Morris & Greenwood (Br J Surg 1964) (41 cases healed in 42.7 days mean and 95.1% successful after 2-3 injections)
Liquid form and crystal form (easier to handle)

Dalal et al: The role of phenol application in the management of pilonidal sinus disease (Archives of International Surgery 2016)
30 cases: 1ml of 80% phenol found 80% cure rate with 83.4% cure rate with some requiring 3 injections (94.5% after repeated injections by Bayhan et al 2016); 7% recurrence rate; time to healing 47.83 days (max was 74)

Simple to do in OPD, repeatable, inexpensive, low morbidity (pain, skin burn, necrosis)
Higher recurrence than flap surgery but repeatable

FIBRIN GLUE
Monotherapy or adjunct to surgery
Some low-quality evidence (4 RCTs, poor quality and underpowered) suggesting use as adjunct to Limburg reduces healing time and pain; similarly poor evidence in relation to adjuncting Karydakis flap
This is emerging; more data needed

PLATELET –RICH PLASMA
96% cure at 30 days (after repeated applications but only 2 applications needed, compared to Phenol); Karahan et al 2016 (only 15 months follow-up, 50 cases)

OPERATIVE

Aims: low-morbidity, low pain, early return to activities/work, low recurrence rate, cosmesis
Modification of natal cleft, move scar lateral to midline, remove appropriate volume of affected tissue

Wide (lay open)/limited excision
Excision with primary closure in midline/off-midline
Excision with wound left open
Excision with flap
+/- drain

BASCOM
Midline hair follicles excised with 2-4mm incisions and then parallel incision to midline and tunnelled towards midline

Bascom reported 3 weeks healing time
Recurrence: 6-17% (Bascom reported 16% at 9 years)

CYSTOTOMY

Recurrence: 5-19%

LAYOPEN

Only real complication is wound infection; longer time to heal and return to work (52.45 and 27.93 Shah et al 2016)

Recurrence: 0% (Yamashita et al 2016 in 9 cases) to 42% (doesn't remove the deep natal cleft as a risk factor so ongoing wetness and hair accumulation possible)

PRIMARY EXCISION AND CLOSURE
Midline tension can lead to necrosis/dehiscence

Quicker healing and earlier return to work but can get infection and dehiscence
Recurrence 16-22% (Foss reported 16% in 1129 patient study) (18.4% by Can et al 2009)
up to 42%

KARYDAKIS

Keeps suture line lateral to affected area with elliptical incision, deeper in contralateral side; quick healing and early return to work (earlier than Limberg)

Recurrence: 1-7% (0% in 7471 cases followed over 20 years by Karydakis in 1992)

LIMBERG FLAP
Prof AA Limberg introduced in 1963; widens and flattens the gluteal cleft and provides good cosmesis

Technique
Positon: Prone Jackknife
Injected with methylene blue or H2O2 to delineate tract
Rhomboid incision down to gluteal fascia; flap down to muscle
(MODIFIED LIMBERG by Mentes 2004: lower edge of incision shifted laterally from midline to prevent inferomedial recurrence seen in classical Limberg)

Return to work in 7-10 days (longer than Limberg) with mean healing 11.48 days (Shah et al 2016)

Complications:
Infection (15% Shah et al 2016)
Flap necrosis and dehiscence (doesn't affect recurrence)
Seroma (22.5% Shah et al)
Haematoma (doesn't affect recurrence)

Score better on SF-36 than primary closure (Duman K et al);
Recurrence: 0-5% (5% by Cubukcu in 129 patients) but Milito et al found 0 recurrence in 67 cases; Mentes et al 2008 found 3.1%

OTHER
V-Y has higher recurrence than Limberg and longer hospital stay as well as longer return to work
Z
Mutaf triangle

Emerging: video-assisted (said to be effective with faster return to activities/work

Guidelines: American Society of Colorectal Surgeons leaves choice of procedure to surgeon/patient

<u>POST-OPERATIVE</u>

Instructions:
Minimise time spent sitting

Hair removal for one month

Wound care:
NPT: Biter et al showed no benefit over standard wound dressing in open wound

LOCAL GENTAMICIN: some evidence that improves infection rate; no influence on recurrence

DRAIN

LASER EPILATION: supportive evidence lacking

FOLLOW-UP

Recurrence: appears to be higher with volume of excision (Alptekin et al), young age, high BMI (Bayhan et al 2016), failure to excise pits (will open gravitationally into natal cleft inferiorly)