

## Knowledge-based therapy of the pilonidal sinus

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### Wissensbasierte Therapie des Pilonidalsinus

**Zusammenfassung.** *Grundlagen:* Die operativen Therapie-Konzepte des Pilonidalsinus werden unterschiedlich bewertet.

*Methodik:* Zur Evaluation der chirurgischen Behandlung hinsichtlich Rezidivquote haben wir systematisch in verschiedenen Datenbanken nach randomisierten kontrollierten Studien (1960–2002) gesucht.

*Ergebnisse:* Wir fanden insgesamt vier solcher Studien, in denen die Rezidivquoten nach Operation mit sekundärer und primärer Wundheilung verglichen wurden. Die Rezidivquote nach Exzision mit primärer Naht ist doppelt so hoch wie nach Exzision mit sekundärer Wundheilung. Randomisierte kontrollierte Studien, die über den Vergleich nach Operation mit primärer Naht zu plastischen Deckungen berichten, wurden nicht gefunden.

*Schlussfolgerungen:* Der Pilonidalsinus sollte exziiert und der sekundären Wundheilung überlassen werden.

**Schlüsselwörter:** Pilonidalsinus, Operation, wissensbasierte Therapie.

**Summary.** *Background:* Controversy still exists concerning the surgical management of the pilonidal sinus.

*Methods:* Comparison of surgical treatment options with regard to recurrence based on review of randomized controlled trials (1960–2002).

*Results:* Four randomized studies were found that compared the recurrence following secondary vs. primary wound healing after excision. Recurrence after excision with primary closure is twofold when compared to secondary wound healing. Randomized controlled trials comparing primary suture and flap-plasty do not exist.

*Conclusions:* Excision with secondary wound healing represents the optimal therapy for pilonidal sinus disease.

**Key words:** Pilonidal sinus, surgery, knowledge-based therapy.

### Disease

Pilonidal sinus represents an acute or chronic inflammation of subcutaneous fatty tissue. It is localized in the midline of the sacral region. Pilonidal cyst, sacrococcygeal cyst, hair nest pit, hair nest fistula and jeep disease are synonymous; the terms coccygealdermoid, sacraldermoid, dermoidcyst, sacrococcygeal fistula are inappropriate.

Three phenotypes of the pilonidal sinus are distinguished: asymptomatic, acute and chronic. Granulation tissues, hairs and cell detritus, are always found in the pilonidal sinus. The disease appears mainly in men in the 2–3<sup>rd</sup> decade of life. Menzel, Dörner and Cremer [9] report on 103 patients, 84 men and 19 women. During World War II, a total of 77,637 American soldiers had to undergo operation for treatment of pilonidal sinus [2]. Söndena et al. [10] report an incidence of 26 per 100,000 inhabitants. Men were more frequently affected in comparison to women. A familial disposition was found in 38 % of the patients; 50 % of the patients are of normal weight – 37 % are overweight.

The pilonidal sinus is considered an acquired illness. The cause of the disease seems to be multifactorial: hairs broken off and pushed by a rubbing motion of the skin into the dermis with root sided ends. Because the horn dandruff of the hair functions in a barb-like fashion, hair always insists more deeply towards the subcutaneous fatty tissue [11]. A foreign body granuloma develops, which does not heal spontaneously (asymptomatic type), but may give rise to acute or chronic infection [3]. Risk factors include strong hairiness, adipositas, excessive perspiration and insufficient body hygiene. A pilonidal sinus is frequently also found in acne-inversa-patients.

The problems involved correspond to the phenotype: the asymptomatic type is indicated by one or several primary openings in the rima ani; the acute type manifests with tumescence and pain in the region and in the chronic stage, patients suffer from serous or purulent discharge.

Spontaneous recovery of the disease does not exist. However, an asymptomatic pilonidal sinus may exist throughout life and vary from acute to chronic inflammation. Longer duration may lead to malignant degeneration [4, 6].

Diagnosis is carried out by means of inspection, palpation and if necessary probing. Upon pressure, pus or fluid may extrude from acute or chronic pilonidal sinus. Injection of dyes or contrast media into the fistula system is not helpful; imaging-like sonography, computed tomography or MRT are just as dispensable.

Fistulas due to anal disease (Crohn's) or acne inverse have to be excluded.

### Disease management

Due to high recurrence of chronic pilonidal sinus following conservative treatment this management is no longer indicated.

Conservative treatment options include systemic antibiotics, injection of phenol (80 per cent) into all fistulas and abscess cavities and the incision and curettage of the fistula system according to Lord and Millar [8].

Surgical therapy represents the method of choice for treatment of chronic pilonidal sinus. The following techniques are available:

Excision with secondary wound healing

Excision and primary closure

a) in the midline or asymmetrical

b) using rhomboid flap (Limberg, Dufourmentel)

c) using VY flap

d) using Z-flap

### Material and methods

For evaluation of operative therapy with regard to recurrence we have systematically reviewed publications (1960–2002) using different databases. Randomized controlled trials (RCT) were of major interest but clinical studies were also taken into account. The randomized controlled trial represents the gold standard for assessment of effectiveness of an operation. It represents a study in which patients are randomly assigned into one of two or more therapy groups. Due to high recurrence of chronic pilonidal sinus this management is no longer indicated.

### Results

Although the results of the clinical study are not very meaningful, they will also be quoted here.

We found a total of 66 clinical studies reporting primary closure:

16 studies	rhomboid flap	Recurrence	1.5 %
11 studies	Z-flap	Recurrence	2.4 %
4 studies	VY flap	Recurrence	2.7 %
35 studies	primary closure	Recurrence	9.4 %

We found a total of four randomized controlled trials in which the recurrence after secondary and primary healing was compared. The results are depicted in Table 1.

### Discussion

The recurrence following excision and primary suture is twice as high when compared to excision and secondary wound healing. Furthermore, the decreased complication rate clearly favors open wound treatment.

**Table 1.** Number of patients, follow-up times and recurrences following excision with secondary or primary wound healing for treatment of pilonidal sinus

Author (year)	Excision, sec. healing N	Excision, prim. healing N	Follow-Up (years)	Re-currence (%)
Füzün et al. [5] (1994)	45	46	0.3–3	0/4.4
Söndenaar et al. [10] (1996)	60	60	4.2	5/10
Al Hassan et al. [1] (1990)	48	48	2.5	12/20
Kronborg et al. [7] (1985)	29	29	3	13/25
Mean average values				7.5/14.8

However, longer duration of healing process and prolonged inability to work have to be taken into account. In addition, open wound treatment results in development of a scar: i.e. a follicle-free, hair-free zone, in which the pathogenetic mechanism cannot happen. We did not find reports on randomized controlled trials comparing primary suture vs. flap.

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