

Hair-follicle obstruction – hidradenitis suppurativa and pilonidal cyst: clinical features and histological picture

C Felding¹, J Moesgaard¹, L Clevin¹, S Fischer²

¹ The Specialist Centre, Diakonissestiftelsen, DK-2000 Frederiksberg; ² Institute of Pathology, Frederiksberg Hospital, DK-2000 Frederiksberg, Denmark

In this prospective study, 50 consecutive patients with hidradenitis (HS) and/or pilonidal cyst were reviewed. The patients were questioned about predisposing factors and at operation biopsies were taken and examined for apocrine glands with or without inflammation. Fifty-two per cent of the patients had acne, 25–33% had previously been treated for HS in the same or another region. Only 62% of the patients had apocrine glands at microscopy, with abscess in 33% of cases, which did not affect the healing of the wound. We concluded that HS is a recurrent disease with typical clinical features, however, it was felt that the name 'hidradenitis' was inadequate and should probably be substituted with 'obstructed hair-follicle'.

Key words: Hidradenitis suppurativa, cystis pilonidalis, histopathology, treatment

Introduction

Hidradenitis suppurativa (HS) is a recurrent disease, initially described by Velpeau in 1839¹. The aetiology of HS is unknown, but several predisposing factors and associated conditions are seen². The clinical features have been shown not always to correspond with a clear-cut histological picture; e.g. furunculosis and inflamed atheroma are often included in the differential diagnosis. The aim of this study was to relate the clinical and histological picture of HS, as this could be important both for the initial treatment and for the prevention of HS. As some authors include pilonidal cysts in the disease complex³ and many patients suffer from both HS and pilonidal cysts, with or without inflammation, we have chosen to include both groups of patients.

Materials and methods

This prospective study included 50 consecutive patients submitted to our specialist centre, with HS and pilonidal cysts, from 1st August, 1989 to 1st May, 1993. All were treated on an outpatient basis with excision and in most cases primary closure of the wound, and all were seen 1 week later. From all abscesses and pilonidal cysts, tissue was sent for histopathological examination

in order to demonstrate apocrine glands and inflammation of surrounding tissue⁴. No bacterial culture was made, nor was any kind of antibiotic used.

The patients were interviewed in order to discover any predisposing factors such as inheritance, relation to pregnancy, influence of oral contraceptives (OCs) and other associated conditions.

The clinical features were compared to the histological pattern and the results of treatment were evaluated in relation to the presence of apocrine glands, i.e. if a genuine hidradenitis was found.

The biopsy specimens were fixed immediately in formaldehyde and histopathological examination was made after HE staining (haematoxylin-eosin). The presence of apocrine glands was noted, as was infiltration of leucocytes and signs of abscess.

Results

After informed consent, 50 patients participated in the study; 14 men (28%), (median age 35.5 yr, range 22–68 yr) and 36 women (72%), (median age 29 yr, range 16–63 yr). Six patients (all female) had recurrent disease during the observation period.

The affected areas in the patient material are shown in Table 1. As far as pilonidal cysts were concerned, the male:female ratio was 5:2. Fifty-eight biopsies were examined from the 50 patients; in 31 cases (62%) apocrine glands were found at microscopy. In only half of these, abscess of inflammation was verified.

Table 1. Location of the disease in 50 patients presenting with HS \pm pilonidal cyst

	Men	Women
Regio anogenitalis		
Pilonidal cysts (\pm inf)	5	2
Nates	1	5 (3 ppt)
Perineum	1	–
Scrotum, labiae, mons pubis	3	5 (2 ppt)
Regio axillaris	2	11
Right side	10 (8 ppt)	
Left side	4	
Bilateral	1	
Regio genitofemoralis	2	18
Right side	14 (13 ppt)	
Left side	6	
Bilateral	1	

Forty-five patients (90%) were treated with excision of the afflicted area and primary suture. Ten per cent of the patients had recurrence of disease and large abscess areas and were treated with excision, but without closure of the wound. All wounds healed after less than 14 days. The five patients whose wounds were treated with excision only all had hidradenitis previously, either at the same location or in another region. All five had apocrine glands revealed on histopathological examination, but only two of them had signs of abscess on microscopic examination.

Eighteen per cent of the patients had neither family history of HS nor recurrence of the disease. Sixteen per cent had only experienced acne without concomitant HS. Forty-eight per cent of the women had been on OCs for between 2 and 10 yr without effect on the disease. None had been given high-dose oestrogen combination pills. One patient had her first occurrence of HS in the genito-femoral region during pregnancy.

Fifty-two per cent of the patients had present or earlier acne, 24% had earlier had axillary HS, 38% had had HS in the genitofemoral region and 32% had either had pilonidal cyst or HS in the perineum (Table 2).

Discussion

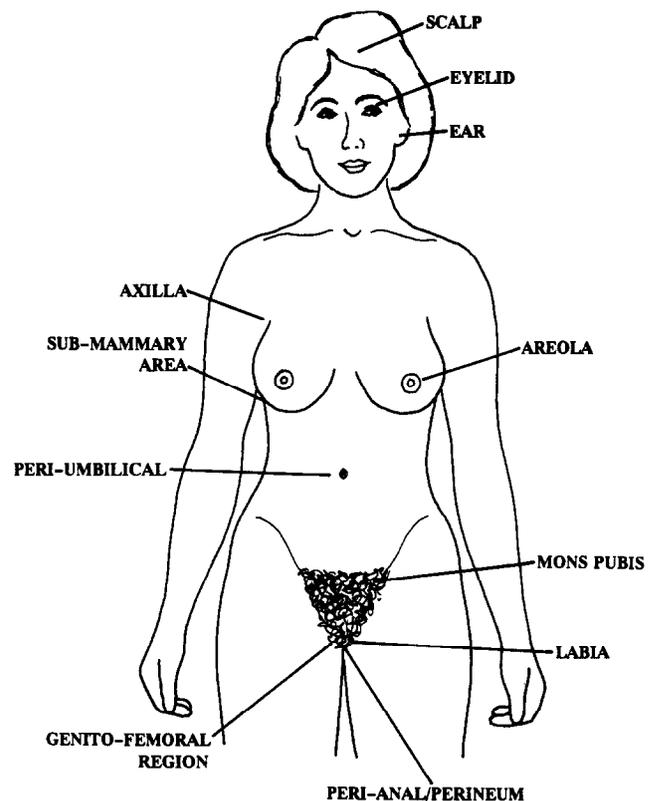
The most frequent locations for HS are the axillae, anogenital region and under the breasts (Figure 1). Women are more likely to be affected than men (13:5)⁵. The disease often starts during puberty and may present itself as either acute or chronic. The origin is a hair-follicle adnex with apocrine glands (Figure 2)⁶. The differential diagnoses are furunculosis and inflamed atheroma; tuberculosis (TB) and actinomycosis are also seen but less frequently⁷. Several associated conditions are often seen in connection with HS. Endocrine factors – many patients improve during pregnancy and worsen in the puerperium. Changes in the bleeding pattern such as shorter intermenstrual periods and menorrhagia are seen⁸ and often an eruption of the disease is seen just

Table 2. Predisposing factors to HS and pilonidal cyst

Patients with	AX	GF	PIL	n	%
n	13	20	17	50	100
Predisposing factors	3	3	1	7	14
Acne	9	9	8	26	52
Recurrent AX	6	3	3	12	24
Recurrent GF	5	10	4	19	38
Recurrent PIL	2	5	9	16	32
No predisposing factors or recurrent HS/PIL	1	8	3	9	18
Acne only	2	3	3	8	16
OC	5	9	1	15	48

AX, Axillary hidradenitis; GF, hidradenitis in the genitofemoral region; PIL, pilonidal cyst/HS in the perineum; OC, oral contraceptives.

SITES AFFECTED BY HIDRADENITIS SUPPURATIVA

**Figure 1.** Distribution of apocrine glands

before menstruation⁵. Comedones (especially behind the ears) are seen in connection with HS⁹ and an 'obstructed follicle-triad' has been described. This includes HS, acne conglobata and perifolliculitis capitis abscondens et suffodiens⁴. Eunuchs neither develop HS nor acne, which supports the theory of an endocrine cause⁷. Furthermore it has been demonstrated that women with acne have an increased amount of androgens in their blood¹⁰. Stellon et al.¹¹ reported on seven women with HS who used OCs. Some of the women got better when they were put on OCs with a higher oestrogen/progesterone ratio. Jemec⁸ felt that the disease is seen in predisposed persons and Fitzsimmons¹² disclosed autosomal dominant inheritance in some families with HS. Twelve cases of squamous cell

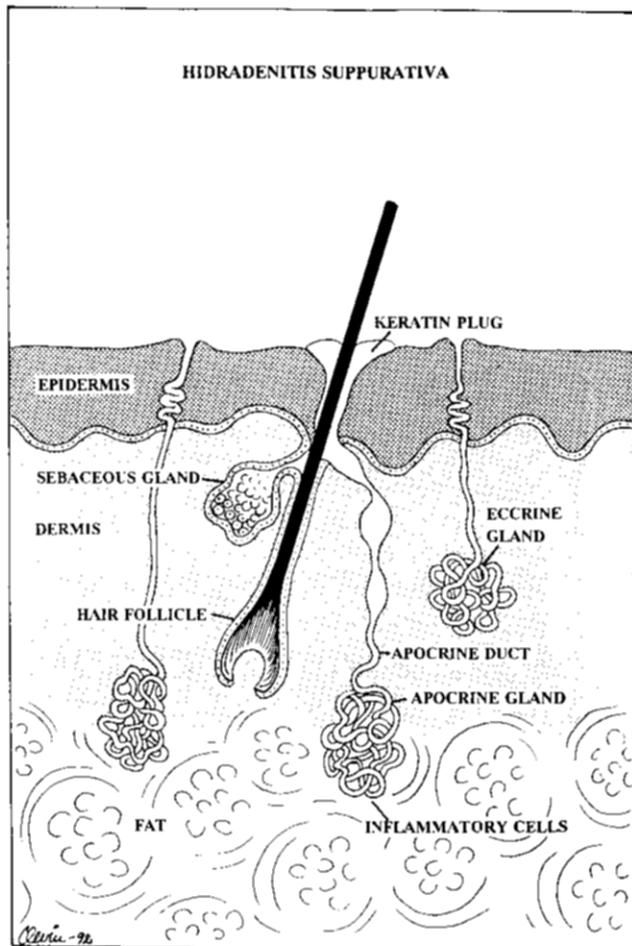


Figure 2. Hidradenitis suppurativa – pathogenesis

carcinoma in patients with chronic HS have been described¹³. Obesity and diabetes mellitus (DM) may be mentioned as associated metabolic factors⁷; although no significant connection has been disclosed between DM and HS. O'Loughlin reported findings in which 22% of the patients had impaired glucose tolerance¹⁴. Mechanical and chemical factors such as shaving and ointments for hair removal may also provoke HS. Diarrhoea and chronic salpingitis are infections commonly seen in connection with HS. The congenital factor is where pilonidal cysts occur as part of the 'obstructed follicle triad'³. Franckowiak et al.¹⁵ have thoroughly described the aetiology and pathogenesis of the pilonidal cyst. Pilonidal cysts are more frequently seen in men in their twenties (3 : 1). Strangely enough, the disease is not seen in Asians. The microbe most frequently found in bacterial cultures from HS is *Staphylococcus aureus*¹⁶. A recent publication has demonstrated that in perineal HS, *Streptococcus milleri* was the most common pathogen¹⁷. Shelley et al.¹⁸, concluded that a bacterial infection in an obstructed apocrine gland is a prerequisite for the development of HS. They made a study in young men who had one axilla shaved and plastered for a week. Three out of 12 developed clinically and histologically verified HS. The microscopic picture was dominated by nonspecific, acute as well as chronic inflammation, not always

including the apocrine glands. Often, concomitant epidermal cysts, 'atheroma' are seen¹⁹. The description 'HS' is often looked upon as a misnomer, as the disease in reality is a deep folliculitis which only secondarily involves the glands^{3,4}.

The treatment of HS varies depending on whether a single abscess is found²⁰, where the roof is excised under local anaesthesia and the wound is treated openly afterwards, or if several abscesses are present, eventually occupying most of the axilla. For example, some authors recommend surgical excision of the whole afflicted area and later transplantation of skin⁷, whereas others laser evaporate the area until no more pus is seen²¹. A new method for surgical treatment of HS in the perineum has recently been described by Brown²² as a 'deroofting' procedure, where the top of the abscess is extirpated, while the bottom is left to achieve renewal of the epithelium.

In our study, 90% of the patients had the afflicted area excised, the wound was closed primarily and rapid healing was achieved. In 10% of the cases, we chose to treat the wound unsutured, partly due to the family history and partly because of the size of the affected area. The wounds also healed rapidly in these cases. All these patients had apocrine glands at histopathological examination but only two of the five patients had regular abscess formation.

That HS is a recurrent disease is shown by the fact that in our study between 25% and 33% of the patients had earlier experienced eruption of disease, either in the same place or in a totally different location. Furthermore, more than 50% of the patients had acne as part of the disease feature, but only one patient had diabetes mellitus.

Conclusion

Hidradenitis suppurativa is a clinical diagnosis which is used concerning inflammation, most frequently in the axillae, the genitofemoral region, or the perineal area. Apocrine glands were only present in 62% of the patients at histopathological examination and regular abscess formation was seen in only 33% of these cases. As the clinical and histological diagnoses are not always congruent, it would be more correct to name the disease 'hair follicle obstruction'. The condition of the apocrine glands has no effect on the healing of the wounds. Recurrences healed as rapidly as the first time cases.

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