The symptomatology of hidradenitis suppurrativa in women

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SUMMARY

In order to establish the possible role of androgen in the development of hidradenitis suppurrativa the symptomatology of the disease was studied in a group of 70 female patients. The results were compared with those obtained from an age-matched control group of healthy women.

The incidence of women with signs of androgenization in the two groups did not differ significantly. The only significant differences found were a shorter menstrual cycle and a longer duration of menstrual flow in the women suffering from hidradenitis, and that women with hidradenitis were more likely to have a positive family history of hidradenitis. The prevalence of hidradenitis in the control group was 4%.

The results show that hidradenitis is not accompanied by other signs of androgenization. The disease may be due to local changes in the apocrine glands of predisposed individuals.

Hidradenitis suppurrativa is a disease of the apocrine glands, occurring predominantly in women and causing considerable morbidity. Although a number of studies have been made of the disease the aetiology remains obscure. It has been shown that a significant degree of hyperandrogenism can be measured in female patients with hidradenitis. Studies of families have suggested a genetic predisposition. The use of depilatories, deodorants, talcum powder and shaving have frequently been suggested as causing the disease, but the use of these by patients with hidradenitis has been shown not to differ significantly from that in a matched group of healthy controls.

In order to establish the possible influence of androgens in patients with hidradenitis suppurrativa, information on other symptoms of androgenization was obtained from a group of female patients with hidradenitis suppurrativa.
METHODS

Patients referred for surgical treatment of hidradenitis suppurativa by either general practitioners or practising dermatologists, were systematically questioned about possible symptoms of cutaneous virilization, menstrual cycle, pregnancy, and family history. The diagnosis of hidradenitis suppurativa was based on the clinical presentation at the time of the operation, and a history of recurrent and chronic inflammation, recurring at the same place in the groin, under the arms, between the buttocks or on the breasts, the lesions suppurating, and unresponsive to normal treatment for boils, such as lancing.

Subjective scoring systems for acne and menstrual cycles are reported to be reliable. The data on menstrual cycles was compared with previously published data. Data on acne and hirsutism was condensed into a yes or no answer and no grades were recorded. Information obtained from the patients was supplemented by information taken from the patients’ records.

A control group was chosen from female hospital staff and from patients referred for cosmetic excision of naevi or warts. None of the women in the control group had any personal history of hidradenitis suppurativa or any other infection involving the axillae, submammary regions or the groin. Information on menstrual cycles was compared with data from previous studies of the general population in order to have as large a control group as possible.

Student’s t-test and Fischer’s exact test were used for statistical analysis.

RESULTS

Information was obtained from 70 women (mean age 31 years, range 17–59 years) suffering from hidradenitis suppurativa. The mean age at onset of the disease was 23 years (range 6–58 years). The distribution of the ages of onset of the disease is shown in Figure 1. The localization of the hidradenitis is shown in Figure 2; of the 70 patients 49 had disease in one region only. The lesions were residual, resistant lesions after medical therapy. Not all patients were able to give complete answers, but they did not differ from the remainder of the group.

![Figure 1](image_url)
An age-matched control group of 100 women was selected at random from healthy hospital staff or patients referred for cosmetic excisions of naevi or warts. As the patients studied were all in good general health apart from their hidradenitis, the control group was not in any other way different from the group of patients studied.

In the control group 4 women were found to have hidradenitis suppurativa and were transferred to the study group. This would suggest a prevalence of approximately 4% in the general female population.

No significant difference was found in the number of women complaining of acne, hirsutism, or irregular menstrual periods in the two groups (Table 1).

Eighteen of the 70 patients had a positive family history of one or more cases of hidradenitis. This was significantly more than in the control group where only two of 96 subjects had a positive family history of hidradenitis ($P < 0.001$).

The menstrual cycle in the patients with hidradenitis was found to be significantly shorter than that of the general female population between 23 and 45 years of age ($P < 0.001$) and the
TABLE 1. Numbers of patients and controls complaining of acne, hirsutism or irregular periods, and duration of the menstrual cycle

<table>
<thead>
<tr>
<th></th>
<th>Patients</th>
<th>Controls</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acne</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face</td>
<td>Yes</td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>45</td>
<td>65</td>
</tr>
<tr>
<td>Back</td>
<td>Yes</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>52</td>
<td>78</td>
</tr>
<tr>
<td>Excessive growth of hair</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face</td>
<td>Yes</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>61</td>
<td>85</td>
</tr>
<tr>
<td>Chest</td>
<td>Yes</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>61</td>
<td>85</td>
</tr>
<tr>
<td>Legs</td>
<td>Yes</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>48</td>
<td>77</td>
</tr>
<tr>
<td>Irregular periods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>43</td>
<td>59</td>
</tr>
<tr>
<td>Length of menstrual cycle (days) (mean ± SD)</td>
<td>26.1±3.2</td>
<td>28.9±0.4*</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Duration of menstrual flow (days) (mean ± SD)</td>
<td>5.4±1.4</td>
<td>5.0±0.1*</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Not all subjects answered all questions.
* Control values taken from previously published study.5

TABLE 2. Changes in the severity of hidradenitis suppurativa during and after pregnancy

<table>
<thead>
<tr>
<th></th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Better</td>
</tr>
<tr>
<td>During pregnancy</td>
<td>9</td>
</tr>
<tr>
<td>Post-partum</td>
<td>2</td>
</tr>
</tbody>
</table>

* Three patients were pregnant at the time of interview.

duration of the menstrual flow was found to be significantly longer in patients with hidradenitis (P<0.05). Thirty-three of 65 patients experienced exacerbation of the disease during menstruation, two noted improvement during menstruation and 30 had found no change during the menstrual cycle. The influences of pregnancy and childbirth are shown in Table 2.

DISCUSSION

Hidradenitis suppurativa is an inflammatory disease of the apocrine glands. It occurs more frequently in women1,6,7 than in men, and it has been suggested that axillary disease
Symptomatology of hidradenitis suppurativa

predominates in women. The present study suggests that genito-femoral disease is also more common in women.

Experimental evidence suggests that poral occlusion is essential to the pathogenesis of the disease, and the presence of retroauricular comedones has been suggested as a diagnostic sign of hidradenitis. Several authors have also suggested that acne may be part of the clinical picture of hidradenitis although later studies have only found acne in 45% of patients with hidradenitis. Other studies have mentioned an unspecified incidence of acne or acne scars, and some cases have been reported in which hidradenitis occurred together with acne conglobata. This in turn has led to therapeutic trials of anti-androgens in hidradenitis, but although a number of patients have been helped, the response has not been complete. This suggests that other factors may be important in the development of the disease.

The results of the present study suggest that the number of women with hidradenitis complaining of symptoms of cutaneous virilization is not significantly different from that among age-matched healthy controls. Generally the role of androgens in hidradenitis seems unclear. Men are afflicted much less frequently than women, and there are contradictory reports some stating that the male sex hormone has caused flares of hidradenitis and others in which it has been used successfully for the treatment of the condition.

Some form of hormonal influence on the course of the disease is, however, strongly suggested by the natural course of the disease and the cyclic variations coinciding with the menstrual cycle. The disease becomes progressively rarer with age. During periods where there are high levels of oestrogens the disease is ameliorated, while menstrual flow, which reflects falling levels of oestrogens, is accompanied by a flare of the hidradenitis. Menstrual flare was noted by a major proportion of the patients in the present study. In the present study the only significant differences regarding the menstrual cycle in hidradenitis patients were found to be a shorter cycle and a longer period of menstrual flow. The number of women complaining of menstrual irregularities did not differ significantly from that in the control group. The longer menstrual flow and shorter menstrual cycle seem to be the only signs of an affected, pituitary-ovary-axis in the women suffering from hidradenitis. It is possible that the relatively longer menstrual flow represents periods of relative hyperandrogenism in these patients, or it may be that these changes are due to inherent differences of steroid-receptor dynamics in different individuals. At present this remains unexplained.

Pregnancy and childbirth are also reported to influence the course of the disease, with improvement during pregnancy and post-partum flaring. The present findings seem to confirm this general trend, although it was not the case in all the patients. The changes occurring during pregnancy have previously been ascribed to the high levels of oestrogens in the blood, but in view of the many general changes associated with pregnancy other explanations may prove to be as important.

On the basis of family studies a genetic predisposition to hidradenitis has been suggested, possibly involving autosomal dominant inheritance. The exact prevalence of the disease is unknown, but has been estimated at 1 in 3000. The results obtained in the present study suggest a substantially higher prevalence of approximately 4% in the female population. A highly significant proportion of the patients studied had a positive family history when compared with the controls, supporting the hypothesis that a genetic factor may be important in the aetiology of hidradenitis. Such a genetic predisposition may offer an explanation of the confusing role of androgens in hidradenitis. It is possible that the increased incidence in families is due to a genetically determined end-organ malfunction, which is only manifest in certain circumstances,
thus making any manifestation of the disease dependent on concurrent internal and external factors.

The results of the present study suggest that hidradenitis suppurativa in women is due to local changes in the apocrine glands of predisposed individuals and that a positive family history and a clinical picture of prolonged menstrual flow in a short menstrual cycle may be helpful in the diagnosis of the disease.

REFERENCES

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