# Pruritus: a 'coat of many colours'

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SUMMARY. The symptom of pruritus was studied in one general practice. Approximately 2.8 per cent of consultations were found to involve pruritus. Information about site, duration, precipitating factors, relieving factors, and relationship of time of day to pruritus was obtained from 100 patients. Seventy-four of the patients were female, of whom one-third were in the age range 20–29 years. The cause of pruritus was classified into 29 categories. Only three patients had an underlying systemic disease causing their itch. Four patients were referred for a dermatologist's opinion. The importance of pruritus the symptom in relation to both disease and patient behaviour is considered.

## Introduction

EVERYONE is familiar with the sensation of itching, or pruritus (L *prurire* to itch). It is both a normal physiological modality and a symptom of disease. It is by far the commonest symptom of skin disease, and can also be the presenting feature of hepatic, renal, endocrine, haematological, neoplastic and psychotic disease.[1]

Throughout recorded history man has suffered from pruritus. Hippocrates[2] made reference to itch, but antiquity's best-known sufferer is perhaps Job.[3] It is well known, too, that James I (VI of Scotland)[4] and Napoleon[5] were scratchers.

Clinical studies of pruritus have been predominantly from hospital dermatology clinics and have concentrated on generalized pruritus.[1,4,6-8] There is little published work on pruritus in general practice. Bearing in mind the small proportion of skin and related ailments which general practitioners refer to hospital, this is an important omission.

Pruritus is notoriously difficult to quantify or, indeed, document. By looking at a group of primary care patients with pruritus, it was hoped to contribute to the understanding of the symptom.

## Method

One hundred consecutive cases of pruritus were investigated. The study was undertaken in an urban teaching practice comprising five partners and one trainee. The list size is approximately 9,700 patients, with an age distribution similar to the national figures; the male to female ratio is 46:54. The surgery is located near a university campus, and between 2 and 3 per cent of patients are students. With six doctors participating, it was difficult to be certain that all cases of pruritus were recorded. However, in the interests of preserving an overview of patients, all doctors were included in the study rather than just those with a particular interest in pruritus. The study assumes that doctor–patient behaviour was normal during questioning — that patients would sometimes voluntarily mention the symptom, and sometimes the doctor would elicit this information in the course of questioning. Participating doctors were asked to complete a form at the time of, or immediately after, seeing any patient complaining of itch.

The complaint of pruritus could be the presenting symptom ('I have an itch, Doctor') or a secondary symptom ('I have a rash, it is itchy'). Cases of localized and generalized pruritus, with or without skin rash, were considered. Recent onset and long-standing symptoms were considered, but repeat consultations for the same problem were excluded.

Information sought at the time of consultation included: age, sex, date of consultation, site of itch (a diagram was used), descriptive appearance of any skin rash, duration of itch, precipitating factors, relieving factors, relationship of severity of symptom to time of day, drug history over previous six months, and a provisional diagnosis. If two separate sites of itch were mentioned, then the site of the most troublesome itch was recorded. As far as possible the patient's own words were used to document precipitating and relieving factors. Obviously some direct questioning by doctors took place, for example, when dealing with suspected cases of contact dermatitis. Topical preparations with an established role in treatment of skin disease were not listed as relieving factors (for example, relief obtained from applying Betnovate borrowed from a friend).

The diagnosis recorded on the study forms were the working diagnoses used by the participating doctors at the time of consultation. To avoid bias, there were no attempts to introduce a standardized classification of skin and related diseases during the course of the study. Procedures such as blood tests, skin scrapings or bacteriological cultures were not solely undertaken for the

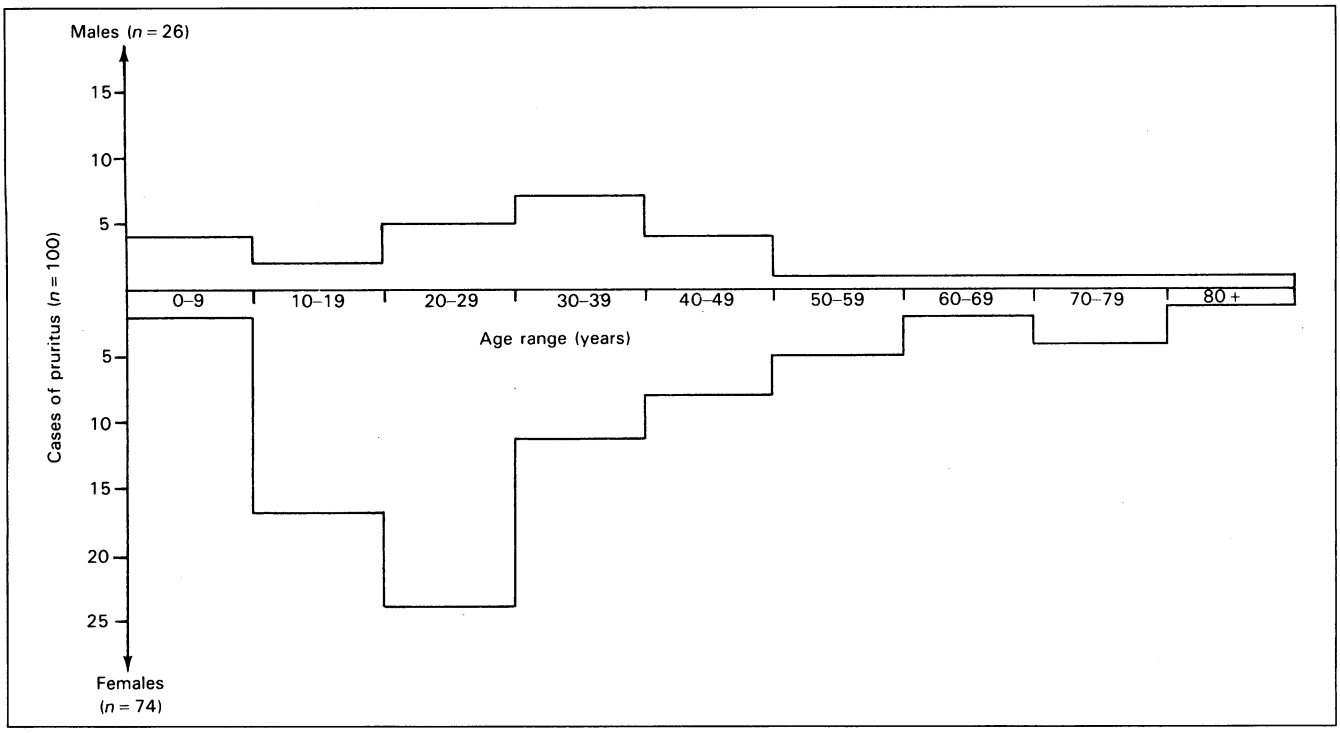


**Figure 1.** *Age/sex distribution of 100 cases of pruritus.*

purpose of the study. If the doctor's diagnosis was 'don't know', then 'don't know' was entered on the study form. It was assumed that no additional referrals to the dermatology department would be initiated for the sake of the study.

The case records of all 100 participating patients were reviewed three months later, and the outcome of follow-up consultations, diagnostic procedures and hospital clinic referrals were noted. The diagnoses used were then standardized — that is 'contact dermatitis' used in preference to 'eczema', 'tinea corporis' in preference to 'body ringworm'.

## Results

Estimating that approximately 3,600 patients were seen during the collection of the 100 cases of pruritus, then the consultation frequency for pruritus was 2.8 per cent of all consultations. The age–sex distribution of the 100 patients was markedly different from that of the practice population: three times as many females as males consulted their general practitioner about an itch (the practice has a female to male ratio of 3:2 for all consultations). The predominance of female patients was most marked in the age ranges 10–19 years, 30–39 years, and in particular 20–29 years. The trend persists whether or not cases of genital itch are included (see Figure 1 and Table 1). Three of the study patients were students — a figure in keeping with the practice population. Only 10 of the patients were over the age of 60 years, and there were no cases of underlying systemic disease in the over-60 age group.

In most cases the itching was of short duration: over one half of patients having had their itch for two weeks or less (Table 2). Acute self-limiting skin infections were responsible for many of these cases. Patients whose itch had persisted for over one year, 13 in total, form an interesting group. The diagnoses were: tinea corporis, three cases (all adult males); stasis eczema, two cases; pruritus vulvae, two cases; and one case each of atopic eczema, allergic conjunctivitis, skin infestation, seborrhoeic eczema, papular urticaria (intermittent) and 'don't know'.

**Table 1.** Sex breakdown of patients with pruritus. (Percentages in parentheses.)

| | All cases | | Number of cases excluding genital itch | |
|---|---|---|---|---|
| Males | 26 | *(26)* | 24 | *(31)* |
| Females | 74 | *(74)* | 53 | *(69)* |
| Total | 100 | *(100)* | 77 | *(100)* |

**Table 2.** Duration of symptom of itch before consultation.

| | Number of patients |
|---|---|
| Less than 7 days | 36 |
| 1–2 weeks | 22 |
| 3 weeks–1 month | 14 |
| 1–3 months | 7 |
| 3–12 months | 8 |
| Over 1 year | 13 |
| Total | 100 |

Discounting the one 'don't know' patient, there were no systemic causes of pruritus within this group with chronic itch. Nor were there any serious, life-threatening or untreatable cases within the chronic itch group. (The chronic itch category of patients here is obviously very different from the chronic itch category of patients in hospital practice.)

The body distribution of itch is listed in Table 3. Generalized pruritus — itch all over the body with or without visible skin lesions — was the most common type. Genital cases numbered 23, or 30 if anal itch is included.

**Table 3.** Distribution of itch. If two parts of the body were affected, then the site of worst itch is listed.

| Site | | Number of patients |
|---|---|---|
| Generalized | | 29 |
| Genitals | | |
| Female | 21 | 23 |
| Male | 2 | |
| Face, head and neck | | 20 |
| Hands | | 7 |
| Anus | | 7 |
| Trunk | | 6 |
| Legs | | 5 |
| Arms | | 2 |
| Feet | | 1 |
| Total | | 100 |

The diagnostic classification of itch was difficult to compile because the participating doctors were not obliged to conform to a rigid classification of diagnoses, the categories being standardized after the study had been completed. The 100 patients were allocated to a total of 29 categories (Table 4). The totals in each diagnostic subgroup do not always correspond to 'distribution of itch' (Table 3) owing to the inclusion of a 'don't know' diagnostic category. The diagnosis made most frequently was contact dermatitis. In 15 cases no firm diagnosis was reached, that is 'don't know'. Of these patients, eight had had the pruritus for one week or less. Only one patient had had the symptom for more than one year. If the seven cases of 'pruritus vulvae — cause uncertain' are added to the 'don't know' group, then this makes a total of 22 per cent of cases without a firm diagnosis at the initial consultation. Conversely, this implies that in 78 per cent of cases a firm diagnosis was achieved.

In only three cases was an underlying systemic illness thought to be responsible for pruritus. All three cases are well-documented associations (Table 4). In every case the general practitioner had suspicions about the cause of pruritus before referral and investigation.

The precipitating and relieving factors mentioned by patients are listed in Tables 5 and 6. The 16 patients with contact dermatitis are excluded from the precipitating factors list, leaving a total of 84 patients; this was to avoid confusion between agents causing the disease process

**Table 4.** Diagnostic classification of itch.

| | Cases ($n = 100$) |
|---|---|
| Dermatitis/eczema | |
| Contact dermatitis | 16 |
| Seborrhoeic dermatitis | 3 |
| Drug allergy | 3 |
| Atopic eczema | 2 |
| Stasis (varicose) eczema | 2 |
| Discoid eczema | 2 |
| Perioral dermatitis | 1 |
| Allergic conjunctivitis | 1 |
| 'Dermatological' | |
| Psoriasis | 1 |
| Pityriasis rosea | 1 |
| Papular urticaria | 1 |
| Necrobiosis lipoidica (non-diabetic) | 1 |
| Infection | |
| Scabies and skin infestation | 8 |
| Insect bites | 4 |
| Tinea corporis | 4[a] |
| Otitis externa | 2 |
| Tinea pedis | 1 |
| Tinea versicolor | 1 |
| Tinea capitis | 1 |
| Impetigo | 1 |
| Female genital | |
| Vaginal candidiasis | 10 |
| Pruritus vulvae — cause uncertain | 7 |
| Trichomonas vaginal infection | 2 |
| Anus | |
| Threadworms | 4 |
| Pruritus ani | 2 |
| Haemorrhoids | 1 |
| Underlying sytemic disease | 3[b] |
| 'Don't know' | 15[c] |

[a] Includes two male genital cases.
[b] Chronic renal failure — male aged 45 years presented with generalized pruritus secondary to chronic end-stage membranous glomerulonephritis; myelofibrosis — female aged 49 years developed perineal itch two years after diagnosis; liver disease — male aged 39 years, generalized itch during episode of jaundice resolved (biochemically and clinically) after four weeks, not investigated further.
[c] Four males and 11 females, with an age distribution similar to overall figures — 11 patients in this group had generalized pruritus.

and those precipitating the symptom pruritus. Drugs, creams or ointments which had previously been prescribed for the treatment of skin disease are omitted from the list of relieving factors. Fifty-seven patients failed to mention any precipitating factor, and 82 patients had no relieving factor. Heat and hot baths were the most common of the few precipitating factors mentioned. Most of the precipitating factors are expected findings. There are insufficient numbers of patients mentioning precipitating factors such as dust, touch or elastic underwear to draw valid conclusions. Of the 18 relieving factors mentioned, cold was the most prevalent. Four patients were honest enough to admit to scratching (the true figure must

**Table 5.** Precipitating factors mentioned by patients.

| Factor | Number of patients | Diagnosis in corresponding cases |
|---|---|---|
| Heat | 11 | 'Don't know' (3); tinea corporis (2); scabies (2); threadworms (2); pruritus ani (1); seborrhoeic eczema (1) |
| Hot baths | 4 | Myelofibrosis; pruritus vulvae; tinea versicolor; vaginal infection |
| Sweating | 2 | Tinea corporis (2) |
| Diarrhoea | 2 | Pruritus ani; threadworms |
| Cold | 2 | Perioral dermatitis; contact dermatitis |
| Touching | 1 | Seborrhoeic eczema |
| Dust | 1 | 'Don't know' |
| Sexual intercourse | 1 | Trichomonas vaginal infection |
| Elastic underwear | 1 | Trichomonas vaginal infection |
| Menstrual cycle, days 20-27 | 1 | Pruritus vulvae |
| Prolonged standing | 1 | Varicose eczema |
| No precipitating factor mentioned | 57 | |
| Total | 84 | |

**Table 6.** Relieving factors mentioned by patients.

| Factor | Number of patients | Diagnosis in corresponding cases |
|---|---|---|
| Cold | 8 | Scabies (2); tinea corporis; tinea pedis; seborrhoeic eczema; myelofibrosis; 'Don't know' |
| 'A good scratch' | 4 | Scabies (2); tinea corporis; stasis eczema |
| Defaecation | 1 | Threadworms |
| Savlon antiseptic | 1 | Contact dermatitis |
| Hair washing | 1 | Tinea capitis |
| Heat | 1 | Contact dermatitis |
| 'Baby cream' | 1 | Contact dermatitis |
| Fingernail in ear canal | 1 | Otitis externa |
| Total | 18 | |

approach 100 per cent). Poking a fingernail into the external auditory meatus — a time-honoured remedy for the symptoms of otitis externa — was mentioned by one young girl.

Twenty-eight of the 34 patients who related their itch to the time of day said that the itching was worst at night (Table 7). The diagnoses associated with nocturnal itch are unremarkable, although both scabies and genital itch figure prominently.

Analysis of the drug history of all the patients did not reveal any trend linking a drug or group of drugs with pruritus. There were, however, three clear examples of drugs precipitating an itchy skin rash (classified as drug allergy in Table 4). Ten women taking the combined oral contraceptive Pill and two taking the progesterone-only Pill are included in the study. Two of the 12 women had a genital itch. These numbers are of the order one would expect to find. The diagnoses of the women on the Pill were in keeping with the study's overall diagnostic classification.

**Table 7.** Relationship of itch to time of day.

| Time of day when itch worst | Number of patients | Diagnosis in corresponding cases |
|---|---|---|
| Night | 28 | 'Don't know' (5); scabies (4); seborrhoeic eczema (3); contact dermatitis (3); tinea corporis (2); threadworms (2); pruritus ani (2); pruritus vulvae (2); psoriasis (1); atopic eczema (1); vaginal candidiasis (1); systemic illness (hepatic) (1); stasis eczema (1) |
| Morning | 3 | Contact dermatitis; perioral dermatitis; otitis externa |
| Evening | 3 | Stasis eczema; necrobiosis lipoidica; vaginal infection |
| Afternoon | 0 | |
| Unrelated to time of day | 66 | |

Referral of patients to hospital was analysed. Four patients were referred to a dermatology clinic at the time of initial consultation. A dermatologist established the diagnosis in two patients (skin infestation, tinea versicolor). Of the remaining two patients, one was referred with the diagnosis already made (contact dermatitis) and the other patient's symptoms and signs had resolved before outpatient attendance. Two further cases were referred to a general physician (chronic and renal failure, myelofibrosis).

## Discussion

The symptom pruritus played a part in approximately 2.8 per cent of doctor–patient consultations during the period of the study. This ranks alongside cough, runny nose, headache, malaise and insomnia as one of the commonest symptoms in general practice.

Pruritus possesses dual qualities — being both a common sensation and a symptom of disease. In doctor–patient consultations, therefore, pruritus can be a valuable 'indicator'. In other words, what one person might consider a trivial nuisance is to another a distres-

sing complaint worthy of medical attention. Thus, when a patient presents with pruritus, the underlying reason for the consultation is often of more interest than the aetiology of the itching. From this study it is clear that few patients with pruritus in general practice have a serious cause for their symptom: if serious cause is taken to mean an underlying systemic disease, the figure is only 3 per cent; if the definition is widened to include conditions where the individual's lifestyle is greatly affected, the figure is still only around 10 per cent. These figures are in contrast to three hospital-based studies quoting incidence rates for underlying systemic disease of 18 per cent,[4] 15 per cent[1] and 20–30 per cent[6] respectively.

The predominance of females with pruritus warrants explanation. Young women seem to have a predilection for consulting their general practitioner about an itch. It is debatable whether pruritus is an ailment commonest among young women, which is true for contact dermatitis, or whether young women use pruritus the symptom as 'a flag of convenience' for attending the doctor. Patients may initially mention a troublesome itch and later in the course of the consultation request advice on contraception; similarly, emotional problems often masquerade as an itch.

In medical antiquity genital itching was a subject for vilification. In medical practice genital itching has a comparable reputation as a difficult condition to manage, partly owing to its tendency to recur. Thirty per cent of patients in this study had an anogenital itch. None admitted to scratching. Is there such an entity as psychogenic pruritus? Perhaps some such cases present as anogenital itch.

The link between the oral contraceptive Pill and pruritus is interesting. The effect of the Pill on certain skin lesions is well documented,[9] as is the relationship with pruritus secondary to liver disease genital itch which is due to vaginal discharge, either physiological of infective, is commoner among women on the Pill. However, not all women on the Pill have a symptomatic discharge and not all women with a vaginal discharge complain of an itch: hence even the relationship of the Pill to genital pruritus is far from clear.

The low number (10) of elderly patients complaining of itch is noteworthy. It may reflect a reluctance among the elderly to complain of so called 'trivia'; alternatively, it may be related to the physiology of ageing. Does the perception of itch diminish with age? The inference is that pruritus in elderly patients is a symptom to be taken seriously, particularly when it is generalized. Despite this, none of the 10 patients aged over 60 years had an underlying cause for their symptom: the spectrum of diagnosis in this group was unremarkable, although the small number of patients precludes the drawing of statistically valid conclusions.

The delay pattern of presentation for pruritus is similar to the delay pattern for many other symptoms,[10] that is, most patients had had their itch for two weeks or less. Of interest, though, is the group of 13 patients who had suffered from an itch for one year or longer. In this respect, pruritus must be unique: there can be few other potentially treatable symptoms which patients are prepared to tolerate for so long before seeking help from their general practitioner. It is to these patients that so much medical folklore is devoted. One cannot help feeling sorry for the three men with treatable ringworm. Perhaps with improved patient education such chronic sufferers would seek help earlier. The most persistent scratcher, a man of 30 years with tinea corporis of five years duration, was surprised to learn that there was a cure for his ailment.

The diagnostic classification reflects the opinions and expertise of the participating doctors. Unfamiliarity with some of the less common dermatological conditions may account for the absence of dermatitis herpetiformis, pompholyx and lichen planus among the categories. Such cases may be disguised by the 'don't know' label. Whether or not psoriasis is a cause of itch is debatable. The inclusion of only one case may reflect the reluctance of doctors to ascribe an itch to psoriasis alone. Senile pruritus is notable for its absence. The inclusion of as many as 13 patients in the 'don't know' diagnostic category may signify lack of knowledge or poor diagnostic skills among the participating doctors; alternatively, it may simply indicate honesty. Is the absence of a working diagnosis in 13 per cent of cases (or 22 per cent, if pruritus vulvae — cause uncertain is included) acceptable? Perhaps it is a reasonable figure, comparable to the work of most general practitioners. The 'don't know' diagnoses will form the basis of a later study. None of the patients in the 'don't know' category subsequently attended with pruritus within a follow-up period of three months. Let us hope this implies that it was the itch that had vanished rather than the patient's faith in the doctor's ability.

It is surprising how few were the patients mentioning a specific precipitating or relieving factor for their itch. That only 4 per cent of patients mentioned 'a good scratch' is obviously due to under-reporting. Reluctance to admit to scratching was often apparent even when excoriation marks were found on examination. Efforts at self-medication range from the ingenious to the absurd. For most of the minor complaints there is invariably some self-medication before consultation.[11] Perhaps a higher response rate for the topic of precipitating and relieving factors could have been obtained by issuing patients with a questionnaire or by asking more direct questions. The results of the study lend support to the traditionally nocturnal pattern of itching and scratching. Nocturnal exacerbation of symptoms was a frequent finding in patients with an anogenital itch. Curiously, all three patients with seborrhoeic eczema said their symptoms were worst at night.

Referral rates to hospital are dependent on many factors, including nature of medical complaint, patient demand, skills and attitudes of general practitioners, and

availability of outpatient appointments. It is difficult to form conclusions about quality of care in general practice from analysis of referral rates. This study showed a referral rate to the dermatology clinic for a second opinion of only 4 per cent (and 2 per cent for general medical referrals). This prompts the question, 'What happened to the remaining patients?' The answer is that the diagnosis and management of such patients remains the preserve of the general practitioner.

In conclusion, let us recall the biblical story of Joseph and his 'coat of many colours'. In many ways the symptom pruritus presents a diagnostic 'coat of many colours': when a patient complains of pruritus, the general practitioner must consider not only why the patient has pruritus but also why the patient has come to the surgery with pruritus.

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## Accident and emergency departments

The 600 accident and emergency departments in England are now treating more people than ever before. New cases seen at accident and emergency departments have risen by half a million from 9.2 million in 1978 to 9.7 million in 1982, and the numbers are still growing. The total number of attendances including patients who return for additional care was 13.5 million in 1982 — 37,000 patients every day.

Source: Department of Health and Social Security. Press Release 84/297.