

## CLINICAL REPORT

# Delusional Parasitosis: Lessons Learnt

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**Delusional parasitosis manifests in the patient's firm belief that they have skin symptoms due to an infestation with insects. Patients often refuse to seek psychiatric care. This study reassessed patients with delusional parasitosis in order to review and learn from them, which is important due to the significant morbidity of this condition and the therapeutic difficulties it presents to the dermatologist. Between 1995 and 2008, 13 patients with delusional parasitosis (6 men, 7 women; mean age 46 years) were included in this retrospective study. Mean duration of follow-up was 50.1 months. Nine patients were treated with pimozide, but only two had complete remission. Four were treated with sulphiride with two reported partial remissions. Risperidone was given to four patients, resulting in one partial remission. Eight patients were seen in the last 6 months and five were lost to follow-up. These findings highlight the difficulties encountered in diagnosing delusional parasitosis, the lack of response to neuroleptic medication, compliance problems and the dermatologist's dilemma of managing a psychiatric condition in a dermatological setting. Key words: delusion; parasitosis.**

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Delusional parasitosis (DP) manifests in the patient's firm belief that they have skin symptoms due to an infestation with insects. True infestations and primary systemic diseases that cause pruritus are not involved. DP is a psychiatric disorder, but patients usually seek help from their primary care physician or dermatologist. By the time the patient presents to the dermatologist, it is not uncommon that they have been seen by many doctors and specialists. We were keen to review and learn from our patients because we were conscious of the significant morbidity of this condition and the therapeutic difficulties it presents to the dermatologist trying to help the patient to accept psychiatric drug treatment. With this aim we reassessed patients with DP.

## METHODS

There were 13 patients (6 men, 7 women, mean age 46 years, age range 23–74 years) diagnosed with DP seen between 1995

and June 2008 (Table I). The diagnosis was made on detailed history and clinical findings. All patients were under the care of one consultant dermatologist (BR) and were seen at 4–6 month interval in the dermatology outpatient department. The patient's records were retrieved by our departmental database. The following data were collected: age, sex, date of diagnosis, age at diagnosis, duration of symptoms, marital status, partner affected, employment history, previous psychiatric illness, previous parasitic infection, treatment, response to treatment, course and outcome of the disease. We also gathered the written and verbal words used by patients to describe their symptoms during the consultation. Further reassessment was made by telephone contact with the patients and their family doctors. The response to treatment was categorized as complete remission (CR), partial remission (PR) or no response (NR).

## RESULTS

Of the 13 patients, 5 were married, 2 separated and 6 single (Table I). All were employed. Mean age at presentation was 41 years (age range 22–68 years) and mean duration of symptoms at first consultation was 44.5 months (range 3–155 months). Mean duration of follow-up was 50.1 months (range 3–153 months). Four patients had consulted other dermatologists before attending us. Eleven patients had primary DP (as an isolated delusional disorder) and two had secondary DP (case 8 with associated cocaine abuse and case 10 with Alzheimer's disease). Folie à deux (i.e. where the delusion is shared by a partner) occurred in two couples. Proof of the infestation, such as "specimens" delivered in a matchbox, were provided by three patients. No parasites were found in the matchboxes.

Three patients had had symptoms for more than 9 years (cases 2, 6 and 7). Although they were troubled with daily symptoms, all three acknowledged the intensity of their symptoms had diminished over the years. Patients described the parasite as black or brown colour living on or just beneath the skin. Case 3 observed the parasite just above his skin as well as penetrating through an external fixation wound on his arm, which he sustained after an accident, i.e. a visual component to his delusion (Fig. 1). Two patients described that "the insects ran through their skin". Table II shows the clear language used by several patients to describe their distressing symptoms.

Seven patients gave a history of previous scabies infection, diagnosed and treated by their family doctors. Although, the distressing "crawling sensation within the skin" was graphically described by all 13 patients, we

Table I. Summary of case series of 13 patients with delusional parasitosis

Case no.	Sex/age (years)	Marital status	Age at presentation (years)	Duration of symptoms at first presentation	Partner affected	Previous parasitic infection	Background psychiatric history	Treatment	Outcome	Lost to follow-up
1	M/30	Single	23	10 months	No	Yes	No	Pimozide	CR after 2 years. Off pimozide	No
2	F/62	Separated	54	13 years	Yes	Yes	Benzodiazepine addiction	Pimozide	NR. Off pimozide and lost to follow-up	Yes
3	M/42	Single parent	40	4 years	No	Yes	Depression	Pimozide, Risperidone, Sulpiride	PR and on sulpiride	No
4	F/61	Married	52	18 months	No	Yes	Depression	Pimozide	NR. Off pimozide and lost to follow-up	Yes
5	M/24	Single	22	10 months	No	No	No	Pimozide, Sulpiride	PR and on sulpiride	No
6	F/54	Separated	43	9 years	No	Yes	Depression	Pimozide	CR after 6 years and off pimozide	No
7	F/52	Single	41	13 years	Yes	Yes	Depression	Pimozide, Sulpiride, Risperidone, Sertraline	NR and off all medication	Yes
8	M/28	Married	25	6 months	No	No	Cocaine and alcohol abuse, depression	Pimozide, Stelazine, Olanzapine	PR and off all medication	No
9	M/30	Single	26	4 years	No	Yes	No	Pimozide	NR. Off pimozide and lost to follow-up	Yes
10	F/74	Married	68	4 months	No	No	Alzheimer's	Risperidone	PR and on risperidone	No
11	F/57	Married	57	3 months	No	No	No	Sulpiride	NR and off all medication	No
12	M/62	Married	61	6 months	No	No	No	Gabapentin	PR after 6 months and off all medication	No
13	F/23	Single	22	4 months	No	No	No	Risperidone	No record of response and lost to follow-up after 4 months	Yes

CR: complete remission; PR: partial remission; NR: no response.



Fig. 1. Case 3 was convinced that parasites gained entry through external fixation wound scars on his left forearm.

initially misdiagnosed two patients as having scabies and a third with neurotic excoriations. Five patients had previously attended psychiatrists with depression, but this was not a current diagnosis in any of them. Although excoriations, erythema and lichenification were observed in six patients, seven patients had no skin abnormalities.

Twelve patients were treated with antipsychotic drugs: nine were treated with pimozide and, of these, only two had CR (cases 1 and 6). The non-responders had to discontinue because of dose-related extra-pyramidal side-effects. Four were treated with sulpiride and two (cases 3 and 5) had PR. Four patients had risperidone and one (case 10) reported PR. Case 11 had PR to gabapentin (an anti-epileptic drug). Four patients had more than one antipsychotic drug for DP. At present, only three of our patients are on antipsychotic medication (cases 3, 8 and 10). Eight patients were seen in the last 6 months and five were lost to follow-up (Table I).

## DISCUSSION

DP, named in 1946 (1), is a chronic psychiatric disorder in which patients have an incorrect and unshakeable

Table II. Descriptions given by a few of the patients of the symptoms of their delusional parasitosis

- It is like bugs crawling all over me.
- A virus is running inside me, irritating and biting all over my skin.
- Insects entered into my skin through a wound and they crawl on me.
- I fear that I can pass these bugs to my partner.
- I feel like a virus is biting me and I cannot sleep.
- My biggest fear is that I am contagious.
- Itchy mites drive me mad. I use ice-cubes in my stockings to relieve the itch.
- Insects are crawling beneath the skin disturbing my sleep.
- It feels like bugs all over my body just eating me.
- I see black things on my skin and my skin feels dirty.

belief that they are infested by parasites. A comprehensive meta-analysis of 193 articles showed the mean age of DP patients was 57 years, and the ratio of female to male patients was 1.4:1 for persons aged less than 50 years and 2.5:1 for those above 50 years of age (2). The prevalence of these delusions is not known with any certainty but Trabert (2) estimated that the incidence in Germany was 1.6 cases per million people and Lyell called the condition "rare" (3). In the same meta-analysis of 1223 case reports, the mean duration of symptoms was  $3.0 \pm 4.6$  years. In common with previous reports of DP, our patients had chronic symptoms with a mean duration of 44.5 months.

The pathogenesis of delusions have been theorized for almost a century because of inadequacies of definition and lack of laboratory tests. One possible model for explanation is the vulnerability-stress model, which proposes that an individual has unique biological, psychological and social elements (4). These elements include strengths and vulnerabilities for dealing with stress. Research supports the notion that stressful life events may trigger the exacerbation of psychotic symptoms. DP according to this model may be triggered by stress (i.e. scabies). Thus, at the start of complaints, there may be a parasitic infestation and the delusional disorder occurs for the first time according to the vulnerability-stress model.

Patients often bring in "specimens" in a small container, which are actually pieces of skin or hair, or may identify "bugs" during examination by probing into the skin. This behaviour is very characteristic and has been referred to as "the matchbox sign". In our series, three patients brought in "proof" of their infestation, in a matchbox. Case 5 was pleased to have "captured" some of the parasites that tormented him and entombed them in the dark coffin he made out of a matchbox. Usually patients have no to minimal signs, which may include excoriations and lichenification. By the time the patient presents to the dermatologist or psychiatrist, it is not uncommon they would have been seen by many doctors and specialists. The isolated symptomatic nature of this condition is illustrated in that we had previously seen case 3 in his capacity as the main carer for his son with atopic dermatitis. He was in all respects entirely normal until he presented as a patient and began to explain his DP symptoms.

The treatment of DP is difficult, as these patients may be otherwise well but have a fixed unshakeable belief that they are infested. The condition may be intractable, partly because the exact neurochemical cause is not known, and although patients have no obvious cognitive impairment, it may be associated with other psychiatric conditions. Therefore, management involves first excluding a real infestation and any underlying condition, including psychiatric disorders such as depression and schizophrenia, medical conditions with altered sensa-

tion, use of drugs (prescribed and illicit) or withdrawal from alcohol, cocaine and other recreational drugs (5, 6). Patients with DP almost always reject the diagnosis and psychiatric referral. An empathic approach is required, acknowledging the reality of patients' symptoms without challenging or confirming their views about the cause. The successful treatment of DP requires an establishment of trust with the patient. The physician should take time to listen to the complaints of the patient and examine the evidence for parasitosis. Case 8 wept with relief when we acknowledged what he was going through by saying "this must be simply awful for you". He then said that he had been afraid that we might be "like all the other doctors" who thought it was "all in his head". Simply acknowledging the misery of his symptoms opened therapeutic windows and encouraged him to take his treatment. Our patients did seem to appreciate the chance to express the distressing nature of their symptoms (Table II) and a supportive approach allowed a therapeutic relationship to develop. This type of supportive therapeutic alliance may be more difficult to achieve in patients with a psychosis, but is very important in successfully helping the patients. Initiation of treatment is particularly difficult and we tried to encourage patients to take neuroleptic medicine partly by explaining that these drugs can have more than one therapeutic action and that they particularly target the biting and crawling sensation within the skin.

It is difficult to know what percentage of patients will accept neuroleptic medication. The Reilly & Batchelor survey reported that 60% of patients will accept the neuroleptics, and of these patients, two-thirds will benefit (7). There is no evidence suggesting that persons who experience parasitic delusions go on to develop a generalized psychosis. Pimozide was the first antipsychotic drug that was used broadly to treat DP (8). A meta-analysis of 1223 case reports demonstrated a full remission rate of 50% with pimozide treatment, compared with a 30% remission rate in patients treated before pimozide was used (2). A limited number of case reports have documented the effectiveness of risperidone (9), olanzapine (10) and sulpiride (11) in the treatment of DP. We were surprised by the persistence of symptoms and poor response to pimozide and risperidone in our patients. However, the evidence in favour of the use of pimozide is limited by the paucity of controlled trials (12). In our series, the side-effects of neuroleptics limited treatment efficacy in spite of initiating therapy at low dosage to minimize toxicity. Factors contributing to poor prognosis in our group included prolonged DP symptoms before referral and past history of depression (5 out of 13). A recent systematic review of the effectiveness of typical and atypical antipsychotics in primary DP by Lepping et al. concluded that, in the absence of controlled trials, there is limited evidence that antipsychotics are effective in primary DP (12).

Supportive psychotherapy is a good adjunct to somatic treatment, as these patients lack insight into illness. This liaison may be very important as our series shows that DP can be a chronic disorder that may persist for many years. A treatment guide (13) focusing on whether the belief is likely to be shakeable or fixed offers a therapeutic approach, starting with benzodiazepine to modern antidepressants. Use of screening tools such as the Hospital Anxiety Depression (HAD) scale may help to clarify whether there is an associated underlying depression (14).

Dermatologists are in a dilemma when a patient with DP presents. While they have the skills to make an accurate diagnosis, dermatologists are not experienced in guiding a delusional patient to take oral neuroleptic medicine nor do they have sufficiently daily experience of maximizing the therapeutic effects and minimizing the toxicity of neuroleptic drugs. Our series therefore, underscores the need for liaison with the psychiatry service within the dermatology outpatients. This would allow the patients with DP to have a consultant psychiatrist opinion in collaboration with the dermatologist in a non-psychiatric setting. Such liaison is important in order to clarify whether there is an underlying depressive or paranoid illness and to optimize the therapeutic approach with modern neuroleptic drugs. If liaison with the psychiatry service is not available or is rejected by the patient, awareness of modern antipsychotic drugs with their lower side-effect profiles may enable the dermatologist to initiate therapy successfully.

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