Delusional parasitosis or Ekbom syndrome: a case series

To the Editor,

1. Introduction

Delusional parasitosis (DP) is a neuropsychiatric syndrome in which the patient has the fixed delusion of infestation by parasites such as lice and mites [1]. Although several cases have been recorded since the end of the 19th century, it was the Swedish psychiatrist Karl-Axel Ekbom who first studied systematically the presenile syndrome of delusional dermatozoid parasitic infestation in 1938 [2]. After a multitude of different names being used over the years such as acarophobia or parasitophobic neurodermatitis, Ekbom’s name has become the eponym attached to the condition referred to later as DP [2–4]. One reason for this nomenclature change was the recognition that DP is not a phobia, i.e., an irrational fear of being infested by parasites, but rather a delusional condition. Some still debate whether the primary disorder in DP is a tactile or cestesthesic phobia, i.e., an irrational fear of being infested by parasites, or a primary paranoid psychosis [3–6].

Delusional parasitosis is considered a rare condition in neuropsychiatric settings. It has been mainly described in case reports or small case series [6–8]. Delusional parasitosis patients usually seek dermatological care since the presenting symptoms include several skin lesions such as excoriations from scratching. Thus, some surveys performed with dermatologists suggested that DP may be more common than previous thought [9,10].

In this study, we report a Brazilian series of DP derived from a psychiatric clinic.

2. Methods

All patients with DP seen by the authors since 1995 were carefully reviewed. The diagnosis of DP was based on a detailed clinical history. The psychiatric classification was done according to the structured clinical interview Mini International Neuropsychiatric Interview [11,12]. The Mini-Mental Status Examination (MMSE) was also applied to all patients [13]. In order to exclude secondary causes of DP, an extensive laboratory evaluation was performed, including complete blood cell count; liver, renal and thyroid function tests; serum electrolytes and glucose levels; vitamin B12, folate and iron studies; urinalysis; serological study for syphilis. Neuroimaging studies were available for all subjects. Demographic data were also obtained.

3. Results

Ten patients with DP were identified. The demographic and clinical characteristics of the patients are depicted in Table 1. Of the 10 patients, seven were female, resulting in a female-to-male ratio of 2.3:1. The age at first clinical evaluation ranged from 67 to 81 years (mean age ± S.D., 72.4 ± 5.2). Duration of symptoms ranged from 6 months to 3 years, with a mean (± S.D.) of 18.0 (± 9.4) months. The mean (± S.D.) time of follow-up of patients was 9.9 (± 2.8) months.

The presenting dermatological signs were considerably variable, including excoriations from scratching, lichenification, contact dermatitis to different topical products applied. The “matchbox sign,” defined as the behavior of bringing samples of the alleged parasites inside small containers, was observed in just one patient (Case 9). The phenomenon of folie à deux, i.e., shared delusion of infestation by a partner, was not found in the present series.

Most patients were unmarried (widow, six; single, two) or living alone (five). All had some clinical comorbidity, mainly diabetes (four), hypertension (four) and thyroid disease (three). None of the clinical illnesses could be etiologically related to the diagnosis of DP. Five subjects (50%) were diagnosed with a delusional disorder, a primary psychotic category that cannot be attributed to another major psychiatric disorder or physical illness [14,15]. Two patients were diagnosed with major depression with psychotic symptoms, while another two with dementia. One patient had a psychiatric background of schizophrenia. The score in the MMSE was below the expected value in three subjects (dementia, two; schizophrenia, three). Of note, three patients exhibited pathological findings on neuroimaging studies, marked cortical atrophy (Cases 8 and 10) and multiple small infarctions of subcortical white matter (Case 7), which were compatible with their diagnosis.

All patients used some antipsychotic medication in low dose: half typical (haloperidol or pimozide) and half atypical...
Two patients developed acathisia (Cases 1 and 8) and one significant sialorrhea (Case 3). No other serious adverse effect was noticed. Four subjects used antidepressants, and the patient with Alzheimer’s disease also used the acetylcholinesterase inhibitor rivastigmine. Full clinical remission of the delusional symptom was obtained in six subjects, while four had partial or no improvement.

4. Discussion

Our DP cases were etiologically categorized into three main groups. The first group (50%) comprised a primary psychotic disorder referred to as a delusional disorder of the somatic type according to the present classification schemes [14,15]. The second group (30%) was composed of other functional psychiatric disorders such as depression and schizophrenia that exhibited typical symptoms of DP. The last group (20%) included DP secondary to a physical or a neurological illness. In the present study, two cases were associated with dementia, one with Alzheimer’s disease and the other with vascular dementia.

Several organic conditions have been causally related to DP, including substance abuse, infectious and endocrine disorders [16,17]. Although DP is known to occur in a wide variety of these physical illnesses, previous studies also found a primary psychotic disorder as the main cause of DP [8,18,19]. In our series, thyroid disease, diabetes, cardiovascular and pulmonary diseases were considered comorbid conditions rather than etiological factors. The advanced age of the patients studied (mean age ± S.D., 72.4 ± 5.2 years) may explain this high occurrence of comorbidities.

As the mean duration of symptoms was 18 months, the average age at onset of the symptoms in the present series would be over 60 years. Associated with the female preponderance, the high frequency of social isolation represented by many patients living alone — these are the typical features of DP according to the literature [8–10,17,18]. Thus, our series is consistent with previous studies performed in different genetic and sociocultural backgrounds. This reinforces the view that DP may be a stable diagnostic category across different cultures. Another relevant point is that the present series came from a psychiatric clinic, while others were derived mainly from dermatological services [8–10,17].

The outcome was favorable in six patients (60%), while the remaining subjects (40%) had partial improvement or no improvement. This picture is also compatible with other studies [8,17,18]. In our series, we did not have considerable adverse effects either with typical or with atypical antipsychotics. We cannot draw any conclusion about the clinical superiority of a specific antipsychotic. Until recently, pimozide was the drug of choice in the treatment of DP [17]. Based on a better side-effect profile and tolerability, atypical antipsychotics have been prescribed to DP patients. There are some case reports on the use of atypical antipsychotics, such as risperidone, quetiapine, olanzapine in DP, but controlled studies are lacking [8,20]. Such studies may be difficult to perform, as DP is an uncommon and heterogeneous syndrome.

In conclusion, rather than a unique illness, DP is a neuropsychiatric syndrome that can follow primary psychotic and depressive disorders, dementia or other organic diseases. The typical patient is an elderly woman who is

<table>
<thead>
<tr>
<th>Case</th>
<th>Sex</th>
<th>Age (years)</th>
<th>Marital status</th>
<th>Formal education (years)</th>
<th>Clinical comorbidities</th>
<th>Psychiatric diagnosis (ICD-10 [14])</th>
<th>Duration of symptoms (months)</th>
<th>MMSE [13] score</th>
<th>Treatment (mg/day)</th>
<th>Outcome (remission)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F</td>
<td>67</td>
<td>Widow</td>
<td>4</td>
<td>Hypertension</td>
<td>F22</td>
<td>12</td>
<td>25</td>
<td>Risperidone (1)</td>
<td>Partial</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>67</td>
<td>Widow</td>
<td>4</td>
<td>Hypertension, Diabetes</td>
<td>F22</td>
<td>24</td>
<td>26</td>
<td>Haloperidol (1.5)</td>
<td>Complete</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
<td>68</td>
<td>Widow</td>
<td>9</td>
<td>COPD</td>
<td>F32.3</td>
<td>6</td>
<td>26</td>
<td>Haloperidol (1), citalopram (20)</td>
<td>Partial</td>
</tr>
<tr>
<td>4</td>
<td>F</td>
<td>69</td>
<td>Widow</td>
<td>5</td>
<td>Hyperthyroidism</td>
<td>F22</td>
<td>24</td>
<td>26</td>
<td>Olanzapine (5), citalopram (20)</td>
<td>Complete</td>
</tr>
<tr>
<td>5</td>
<td>M</td>
<td>69</td>
<td>Married</td>
<td>3</td>
<td>Hypertension</td>
<td>F32.2</td>
<td>12</td>
<td>24</td>
<td>Olanzapine (2.5), moclobemide (300)</td>
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</tr>
<tr>
<td>6</td>
<td>F</td>
<td>73</td>
<td>Single</td>
<td>7</td>
<td>Hypertension, Diabetes</td>
<td>F22</td>
<td>36</td>
<td>27</td>
<td>Pimozide (2), venlafaxine (75)</td>
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<tr>
<td>7</td>
<td>F</td>
<td>74</td>
<td>Single</td>
<td>4</td>
<td>Heart failure, Hypothyroidism</td>
<td>F01</td>
<td>6</td>
<td>17</td>
<td>Risperidone (1)</td>
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<tr>
<td>8</td>
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<td>7</td>
<td>Hypertension, Diabetes</td>
<td>F20</td>
<td>18</td>
<td>21</td>
<td>Haloperidol (2)</td>
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<tr>
<td>9</td>
<td>F</td>
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<td>Widow</td>
<td>6</td>
<td>Hyperthyroidism</td>
<td>F22</td>
<td>24</td>
<td>26</td>
<td>Pimozide (2)</td>
<td>No improvement</td>
</tr>
<tr>
<td>10</td>
<td>M</td>
<td>81</td>
<td>Married</td>
<td>7</td>
<td>Heart failure</td>
<td>F00</td>
<td>18</td>
<td>18</td>
<td>Quetiapine (100), rivastigmine (12)</td>
<td>Complete</td>
</tr>
</tbody>
</table>

COPD, chronic obstructive pulmonary disease.
unmarried or living alone. Clinicians should be alert to skin lesions in these geriatric patients in order to exclude DP.

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