

## **DESCRIPTION OF DELUSIONAL PARASITOSIS? ABOUT A PATIENT IN TIJUANA, BAJA CALIFORNIA**

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**Abstract:** Delusional parasitosis is a neurological or psychiatric illness that can be caused by chronic metabolic disorders, infections, or drug addictions, skin symptoms could resemble like ecto-parasites as pediculosis or scabies, although patient refer parasites crawling under the skin and the physicians must be careful to recognize is not a skin parasitosis and look for the real diagnosis. **Objective** to describe a case of delusional parasitosis to help physicians and dermatologist to recognize the symptoms of delusional parasitosis and guide the patient accept go to psychiatry for the correct treatment and avoid the patient wanders with the wrong treatment. **Method;** a female patient who comes for medical advice due to for long time she feels symptoms under skin, refer parasites scrawling and brought a sample with such's parasite. **Result;** the sample is called "matchbox" presented unidentified insect remains, cellular remains, and negative to parasites, the symptoms she referred were not caused by parasites. **Conclusion** parasitosis such as pediculosis, scabies, toxocariasis and gnastotomiasis were discard, clinical findings led us to delusional parasitosis diagnosis.

**Keywords:** Discarded parasitosis, delusional parasitosis, Ekbom syndrome, matchbox, harmless insects

## INTRODUCTION

Delusional Infestation or delusion of parasitosis, is a disease with low epidemiology 23.7 / 100,000 (Orsolini, et al, 2020) the patient begins with symptoms and sensations that feel have parasite crawling under the skin continuously present a serious itchy condition, after continuous scratching, wounds, abrasions and scars, some patients feel also extrusion of hair and try to extract them with the real belief they did it, then putting them in a container and taking it to the doctor (match box sign). There are two types,

delusion with animated material (animals) and delusion with inert material ( Hylwa & Ronkainen, 2018) Delusional parasitosis, Ekbom syndrome is related to belief there are small parasites that live under the skin (Soltan-Alinejad, et al, 2021), until know there is not real evidence of such parasite, however exist reports of harmless insects are capable of causing dermatitis related with delusional parasitosis(Altschuler, et al, 2004), in some cases causality has been found in harmless insects, in 1903 and 1924 a case report of a man infested in the head and pubic area with Springtail insects , 1962 another infested man who presented dermatitis due to infestation by insects (Scott, et al,1962) was documented Collembola order as etiological agent of dermatitis and infestation. In Oklahoma, a study of 20 patients with dermatological symptoms and diagnoses with delusional parasitosis, skin scrapings samples were reviewed in different preparations and results of 18 samples was found insects from Collembola order (Altschuler, et al, 2004).

(Mumcuoglu, et al, 2018) mentions over 80 patients with delusional parasitosis were histologically studied, 13% of samples were observed harmless insects. (Mumcouglu, et al, 2018) to complete this scenario in forensic medicine it has been found Collembola insects in humans causing accidental infestation causing dermatitis (Arnaldos, et al, 2010). (Beccati, et al, 2011) finds insects Collembola order infesting the skin of a cat who had itching and abrasions on the over skin Beccati, et al, 2011). The symptoms of itching and the sensation of having parasites crawling under the skin persistently in patients, skin lesions such as abrasions, lichenifications and scars, extraction of parasites [matchbox sign] insomnia, stress, depression, social isolation, behavioral disturbances and functional disturbance of time could be defined delusional parasitosis (Altunay, et al, 2012;

Shenfield, et al, 2013).

This disease was described since 1896 under different names (table 1).

Delusional parasitosis frequency in older women  $\geq 50$  years is 3:1 and women less  $\leq 50$  years 1:1 (Ahmad, et al, 2009; Mumcoughlu, et al, 2018; Martins, et al, 2015) the persistence of skin symptoms, cause wound and scars, that must be treated with emollient creams and for de pruritus, however this persistence tends to trigger psychosis and behavioral changes, since it takes one to seven years to reach a delusional diagnosis (Moriarty, et al, 2019; Krooks, et al 2018). Chronical metabolic disease and chronical infectious disease and diseases that can trigger like neoplasms, neuropathy or neurological damage (Soltan-Alinejad, et al, 2021) other causes such as substance use-induced psychosis, major depression with psychotic symptoms, or mania (Munoz & Bayona, 2015) To understand the neurological disease origin, studies were carried out with Magnetic Resonance and morphometry based on voxels in patients with delusional parasitosis, it was found that the white matter presented a significant greater volume  $p < 0.005$  with a decrease in gray matter, with structural changes in the region. prefrontal, temporal insular and cingulate (Wolf, et al, 2013; Ramírez Bermudez, et al, 2010) Mexican clinical cases were reviewed to understand globally the presentation of delusional parasitosis delusional parasitosis is

related to different context of the neurological condition and brain physiopathology in psychiatric patients were observed different anatomic lesions that could be explain the different presentations patterns of this disease, (Ramírez Bermudez, et al 2010)

## METHOD

### CLINICAL CASE DESCRIPTION

A 70-year-old woman, a resident of California USA, who comes to Mexico to consult a Regen and aesthetic clinic to present pruritus and sensation of having parasites crawling under the skin in arms, face, and scalp, usually begins to itch at night, is intense sensation and feels despair, she pinches the skin trying remove the parasites, she also comment that the parasites have hairs and brings a sample in a small plastic container with the belief that she extracted the parasites from under her skin in face. Explains that she has been auto treated with different products on her skin, including insecticides due to the intense itching caused by the animals and causing anxiety and despair. She refer, has had symptoms for more than a year and visited many physicians without relief, she was treated with Invermectin for more than a month without relief, she has been visiting various physicians, she looks clean, oriented and lucid, congruent when speaking, nonetheless she thinks someone bewitched her also says he

Year	Desease Name	Authors
1896	Parasitophobic Neurodermatitis	Thibierge George
1938	Dermatological parasitic presenile delirium	Ekbohm Karl A
1946	Ekbohm syndrome	Wilson y Miller
1988	Delusional Parasitosis	Munro
2009	Delusional infestation	Fruedenmann and Lepping

(Orsolini, et al 2020)

Table1 Historical names that describe delusional parasitosis

Age	Gender	Dermatological affection	Neuro-psychiatric affection	Treatment	Remission
54	M	scalp neck	No	pimozide	remission
50	M	face-mouth	No	pimozide	remisión
49	M	lower extremities	Addiction cocaine, alcohol	pimozide fluoperacine olanzapine	No remisión
48	F	lower and upper extremities	Affective disorder	pimozide sulpiride risperidone	remisión
71	F	All body pruritus, parasite crawling	Depression, neurological damage by cysticercoids, dementia	sertraline, quetiapine fluoxetine, risperidone	No remission
72	F	legs, vagina and rectum	Neuropathy, radiculopathy for DMtype2	risperidone, duloxetine quetiapine	Parcial remission
53	F	estomach and espinal invasion	Small strokes in White matter,	fluoxetine	No remission
72	F	All extremities stomach and head	Dementia, poli neuropathy by B12 deficiency	fluoxetine, hidroxibalamine ,perphenazine	remission
73	M	Scalp, face, residual hypopigmentation	No, neurological damage CA prostate	paroxetine	Surveillance remission
56	F	face, trunk ,arms excoriations, hypopigmentation, match box sing	No reported	Referred psychiatry	No surveillance
48	F	disseminated dermatosis, trunk, arm hyperpigmentation	No reported	Referred psychiatry	No surveillance
36	F	disseminated dermatosis, chest, arms, hyperpigmentation match box sign,	No reported	Referred psychiatry	No surveillance
63	F	face, excoriations, hypopigmentation disseminated dermatosis	No reported	Referred psychiatry	No surveillance

Table 2. Description of patients who presented delusional parasitosis in Mexico

felt small spiders walk under his skin and tries to remove them. At the exploration, patient presents crusty and scratching on the face and the arms, also hypopigmented skin were observed, she presented contact dermatitis.

## RESULTS

The container [match box] was send to microbiology lab, it was found remains of insects and hair, cellular remains, negative a louses or any type of microorganism. (See Fig 1, 2, and 4) The lab results were not evidence of an accidental parasite, or harmless microorganism, diagnoses of parasitosis was discard.

## LAB RESULTS

Negative a parasitosis by lices, mites, migrans larvae (toxocariasis), gnathostoma larvae or filarias cutaneous, the manifestations of this different parasites were no found and parasitosis were discard.

## ETHICAL PROCEDURE

Patient consentient was signed previous explanation of this paper.

## TREATMENT

With emollient creams for your skin and photo protectors.

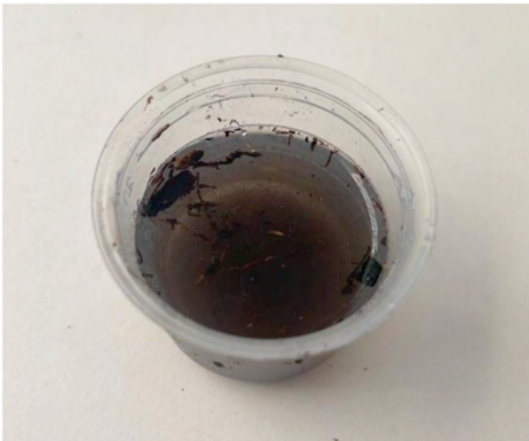


Fig1. Bottle with sample "Match Box"

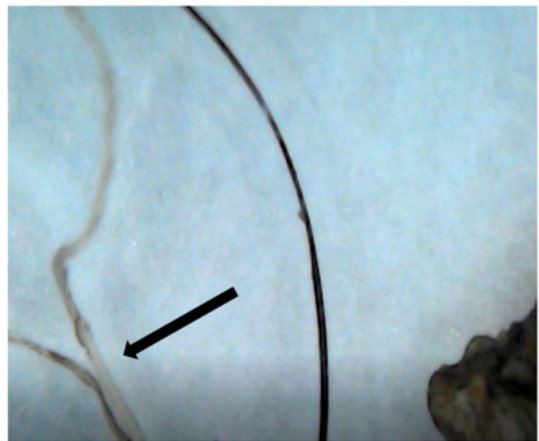


Fig 2. Insect leg

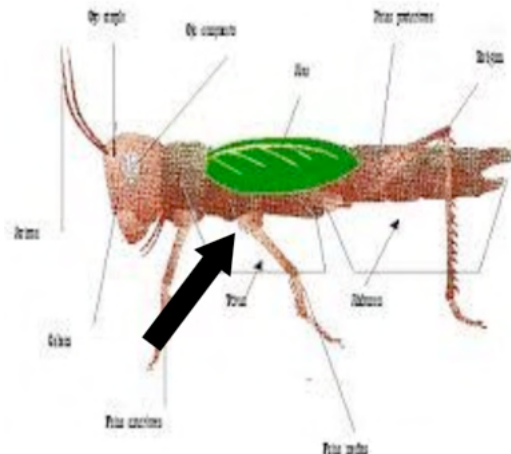


Fig 3. Picture insect anatomy



Fig4. Segmented amorphous remains insects forms



Fig 5. Dermatological lesions on face and arms

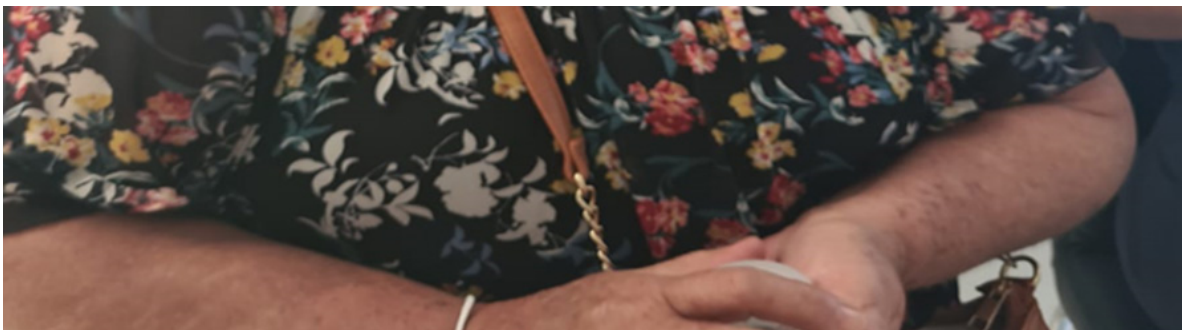


Fig 6. Dermatological lesions e hypopigmentation in forearm

## FINAL DX

Delusional parasitosis with the information literature was reviewed signs and symptoms are linked Ekbom syndrome and the patient was referred to psychiatry clinic.

## DISCUSSION

Delusional parasitosis is a not easy to be diagnosed at the first consultation, due to the symptoms were in the face and arms skin it was confused so we accept for true that patient said, in second consultation it was found the patient was talking about to be bewitched and match box sign, called our attention for real, so were realized a meeting with lab personal and it was an agreement to check it over the literature to the diagnose.

After reviewing the cases in the literature, everything suggested the patient had neurological damage due to metabolic chronic disease, somehow it is clear that the origin of this disease is multifactorial and depends on patient life history, to recognize delusional parasitosis is suggested a parasitic skin infection will be suspected, in this case after reviewed for the lab the contents of the

match box the patients brought us, it was showed some parts of insects such as leg as can be seen in photos 1, 2, 3, anyway, it is not enough evidence to say that small harmless organisms are involved in this disease, even though there are reports to the contrary (Becatti, et al,2011;Scott, et al, 1962)that fact is involved in controversy (Christiansen, et al, 2008). It was understood that this kind of patients should be studied to find the neuropathological damage and help them in their recovery, no matter the specialist or physician be the important is get the correct diagnosis. Despite the low frequency of this disease, it was understood that we must listen to the patient with great attention since their talk may reveal that something is not normal.

## CONCLUSION

It is necessary for general physicians to have the bases to recognize diseases of low epidemiology such as delusional parasitosis, at first we were puzzled by this patient, however the final diagnosis could be reached after team meeting and literature review and believed what the patient said.

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