# Delusion and Rose's disease

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***Delirio en el mal de la rosa***

**Summary**

*A clinical case of a patient who was admitted to the psychiatric service due to persecutory type delusion manifestations, deterioration of general physical condition and dermatological disorders is presented. The psychiatric, family and personal background, on the one hand, and the cachectic condition of the patient, explained by the nutritional history, on the other, explain the psychitic expression of underlying vitamin-nutritional deficit. The clinical evolution presented after onset of treatment helps understand the etiological conditioning factors of the syndrome presented.*

***Key words:*** *Cachexia. Delusion. Scurvy. Hipovitaminosis. Pellagra.*

**Resumen**

*Se presenta el caso clínico de una paciente que ingresa en psiquiatría por manifestaciones delirantes de tipo persecutorio, deterioro del estado físico general y alteraciones dermatológicas. Los antecedentes psiquiátricos, familiares y personales, por un lado, y el estado caquéctico de la paciente, explicado por la historia nutricional por otro, explican la expresión psicótica del déficit vitamínico nutricional subyacente. La evolución en el tiempo presentada tras la instauración del tratamiento ayuda a comprender los condicionantes etiológicos del sindrome presentado.*

***Palabras clave:*** *Caquexia. Delirio. Depresión, Escorbuto. Hipovitaminosis. Pelagra.*

## INTRODUCTION

With the presentation of this clinical case, it is aimed to manifest the importance of assessing, at first, the existence of organic processes that may be responsible for or influence the clinical expression of certain psychiatric manifestations, although these or the presence of a psychiatric, family and personal background lead us to think that a mental disorder is the principal responsible aspect for the symptoms shown. Furthermore, we should not scorn certain deficiency diseases as being possibly responsible for certain clinical syndromes due to their rareness in developed countries, especially when we treat patients with eating behavior disorders who live in poverty or who suffer evolved mental deterioration.

## CLINICAL CASE

### Reason for admission

A 56 year old white race female patient who comes to the Emergency Service of this hospital, referred by her general practitioner due to sad mood and persecutory type delusional ideas (she has the firm belief that CIA agents are following her, watching her and trying to do her away) since her partner died 3 days ago. She also reports headache, general pain, hyposthesia of the lower limbs and dry sensation of skin and mucosas. She is legally committed as she was reluctant to remain hospitalized and had delusional, depressive and cachectic clinical characteristics.

### Present clinical history

Depressive, anxious and delusional manifestations that have evolved for several months and that have been more intense since the death of her partner 3 days ago, together with a marked picture of long time malnutrition, stand out.

Since 15 years ago, the patient had maintained a partner relationship with a man whose nationality was North American, who was 30 years older than she was, and, according to that reported by the patient, an ex-agent of the CIA. During the last year, she dedicated her time to taking care of him, before he died of bone cancer, being subjected to important psychophysical stress and decreasing her nutritional supply even more, since it had already been deficient, according to the references of the patient herself.

### Psychopathological examination

Cachectic and aged condition, height 150 cm and weight 26 kg. Emaciated facies, un tstylish clothes, not especially

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untidy. Walks with short steps, weak. Hypophonic, unspontaneous speech. little collaborator in initial stages, distrustful, sensitive, hyper-watchful, mistrusffful and suspicious.

Anxious, frankly hyophymic, asthenic, apatic, cries easily, negativist cognition, suicidal ideation, and self-blaming in relationship with the death of her partner.

Auditory type pseudohallucination manifestations (she perceives a male voice in her head that gives her different types of orders).

Tachypsychic, at times tangential, with speech that is sometime confusing. Persecutory-harmful and somatic type delusional ideas with delusional cognition and interpretation (extreme belief that she was being pursued. On entering her home, she reports that she had allergic manifestations due to the radiations of the computer). She did not present any formal thought disorders, not even in capacity of abstraction.

Without apparent intellectual harm and with a vocabulary in agreement with her cultural level (deficient schooling). Mild attention deficit and distractibility. Temporally, spatially and personally oriented. Without obvious defects in remote, recent and immediate memory.

Manifest eating restriction. Judgement of reality manifestly altered. Inadequate introspective capacity.

## Psychiatric background

*Documented material from the Psychiatry Service*

Very little. Psychiatric admission in 1970 in the entity and for inexact reasons. Isolated contacts with our service in 1981, 1988 and 1991 due to anxious-depressive symptoms.

*Family data*

Her sister defines her as a sickly person since she was little, who began with behavioral disorders at 16 years of age characterized by rare behaviors, with excessive use of tobacco, pronounced decrease in intake and marked oppositionism towards her father. She reports that since she was very young, she showed emotional disorders, with depressive symptoms and delusions of persecution, the latter ones afther a surgical intervention in 1965, with ideas of poisoning by the medical staff towards her person. Background of three suicidal gestures and resistance to follow the treatments.

*Medical background*

Tonsillectomy. Septoplasty. Polypoid sinusitis. Exodontias. Extrinsic bronchial asthma. Allergy to penicillin, pollens and mites. Cervical arthrosis. Peptic ulcer. Repeated cystitis. Fibrocystic mastopathy. Eating disorders.

## Family background

Only the suicide of her mother by intake of caustics stands out.

## Personal background

With no perinatal background of special interest. She hardly received schooling. At the age of 11 years, she found the cadaver of her mother. Behavior disorders since 16 years, already described. She developed many successive and not simultaneous sentimental relationships during her adult life, the last one during the last 15 years. The only paid work she has had was during 3 months as a secretary, more than 20 years ago, which she left because she did not feel emotionally stable. She lives in aprecarious econocmic situation, with a modest pension. She does not maintain contact with her only living family, which is her sister. She is fond of painting. She has been a vegetarian for the last 3 years and has nad nutritional disorders since 16 years of age. She recognizes her life as that of a sickly person who has had to face many difficult times.

## Initial management

Given the delusional and depressive symptoms, with suicidal ideation, as well as the resistance by the patient to be hospitalized, she was legally committed to the psychiatry ward. Intramuscular antipsychotic treatment was begun with zuclopenthixol acuphase and biperiden every 3 days. Vital signs were controllled, with wpecial control of behavior developed and anxiolytic treatment.

Based on the psychological studies performed, it is concluded that there is no clear cognitive deterioration with a mini-mental of 31/35, with depressive and delusional manifestations in a personality with paranoid and dependent traits.

Initially, a complete blood test was performed with midl increase in red blood cells, hemoglobin, hematcrit, monicytes and eosinophils and platelet decrease, biochemistry, urine analysis, ECG and leutic serology, without significant alterations.

## Consultation

Given the state of malnutrition and the verifying of dermatological lesions on legs and hands as well as the presence of cough, expectoration, dyspnea and eye problems, consultation was established with the following services:

*Endocrinology*

Extreme cachectic condition (height 1.50 cm, weight 26 kg and BMI of 11.5) with generalized severe muscular atrophy, with edemas, trophic disorders, petechia and cutaneous desquamation in lower limbs. With the initial impression of severe caloric-protein-vitamin malnutrition and possibility of beri-beri, scurvy or pellegry, a normal diet was established with weight control and vitamin and calcium supplements.

Ascorbic acid, thiamin and niacin levels were requested. Vitamin C levels were much lower than their normal values, 0.5-2 mg/dl, being practically undetectable. Vitamin $B_1$ levesl (68 µcg/l) were within normality, that is, above the minimun advised limit of 20 µcg/l. Vitamin $B_3$ levels cannot be determined directly, in any event, the serum levels of tryptophan, which should be between 2-8 mg/l or the NAD or NADP blood levels could have been assayed[1,4].

The patient developed favorably, gaining 9 kg in 12 days.

In the nutritional history, the manifest eating deficiencies of the patient who follows a practically vegetarian diet are seen (table 1). When the food eaten were known, they were evaluated using the Wander tables, it being possible to compare the daily supply advised of certain vitamins with those that were calculated to exist in the patient´s diet (fig. 1). Thus, we verified that the vitamin C supply (14 mg/d) was much lower than the recommended value (60 mg/d), this orienting us towards a hypovitaminosis C or scurvy; that the vitamin $B_1$ supply (0.7 mg/d) is close to the recommended value (0.8 mg/d), so that it is strange that beriberi existed; and that the vitamin $B_3$ supply (1 mg/d) was much below the recommended value (14 mg/d), which oriented us towards hypovitaminosis $B_3$ or pellagra[1,4].

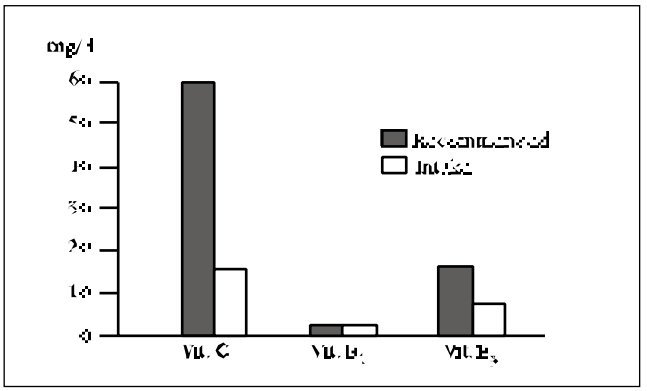


**Figure 1.** Comparisson of vitamin supply recommended and that received by the patient.

*Dermatology*

Mild symmetric and bilateral edemas on both legs, with desquamation and pigmentation that went from brown to violet in craniocaudal direction. Similar, although more discreet, lesions on both hands. At a few days of following a balanced diet, these lesions disappeared. Proteinogram, coagulation, immunoglobulins, complement and antibody levels were requested, all being normal except for a mild increase in IgM.

The Dermatology Service reached the conclusion that the lesions could correspond to non-specific disorders having a general and vascular trophic origin, although it could not be discarded that there were pellagroid lesions, since the patient had been closed up in her home for months without receiving any direct sun exposure[2].

Given the good evolution experienced by the skin lesions and the normality of the complementary tests, no specific dermatology treatment was established.

**TABLE 1. Nutritional history**

| | |
|---|---|
| **Breakfast** | |
| | Chicory (10 g), rice or almond milk, corn or oat cereals (15 g) |
| **Mid-morning** | |
| | Corn cereal with rice milk |
| **Lunch** | |
| | Boiled green beans or chard (40 g), fresh tuna (35 g), olive oil (10 g), bread made with rice flour with olive oil, apple |
| **Snack** | |
| | Bread made with rice flour sith olive oil |
| **Dinner** | |
| | Boiled green beans or chard (40 g), boiled or cured ham (10 g), pear |

*Pneumology*

Treatment of the asthmatic manifestations, favorably evolving.

*Ophthalmology*

Treatment was prescribed with lubricant eye drops due to dry eye syndrome.

## Hospital course

After administering the already mentioned antipsychotic medication and following a balanced diet with vitamin-mineral and nutritional supplements, she began to criticize the delusion, attributing these beliefs to the fact that she was very weak physically, and her emotional state also improved. She developed a veracious appetite and a manifest weight gain, and the dermatological lesions as well as the asthmatic manifestations experienced clear improvement. At 12 days of admission, administration of the antipsychotic agent in depot presentation was begun every 15 days. At one month of hospitalization, she had gained 11 kg, the dermatological disorders had disapperared and she was practically euthymic, without delusional belief, with good response to permissions to leave the hospital and without respiratory symptoms, and was discharged after 34 days of hospitalizacion, with low dose depot antipsychotic treatment, vitamin mineral complex and bronchodilator treatment.

### Posterior evolution

At ten days of the discharge, she came to a check-up, and was aware, oriented, without alterations of content or course of thought, absence of delusional production, with adequate criticism of the old delusional ideas, without sensoperceptive alterations and she was mildly anxious and hypothymic, as a consequence of pain in the right hip since 1 week before, that was being treated by her medical practioner as lumbosciatica and that limited her physically and socially. Given the clinical background of the patient and the acute pain reported, she was hospitalized for study, wehich she accepted. After an X-ray study, she was diagnosed of subcapital fracture of righ femur and was operated on by the Traumatology Service by osteosynthesis with 2 cannulated screws. She was discharged at 42 days of this second hospitalization, having positively evolved in regards to her traumatology problem and being asymptomatic from the psychiatric point of view, withyout needing psychopharmacological treatment during it.

At 8 months of the initial admission, the patient has experienced clear weight gain, weighing 46 kg, follows a balanced diet, does not shouw dermatological disorders, does not present depressive or delusional manifestations, is without psychopharmacological treatment since then and she has almost recovered from her traumatology problem.

## DISCUSSION

The clinical case presents a patient with family psychiatric (suicide of mother) and personal background (behavioral disorders since adolescence) who, when faced with a situation of psychophysical stress (care and death of her partner), develops delusional symptoms with manifest anxious and depressive component, suprassing that which is normally a grief reaction. She also presents pronounced physical weakness, showing cachetic state, in harmony with a nutritional history which, since adolescence, was characterized by irregularity and lack of balance, worsening in the last months as a consequence of the already mentioned circumstances of stress, which determined serious vitamin deficits, that transcendetally result in the evolution of the picture, especially if we consider that the physical and psychiatric manifestations improved parallely to the nutritional regularization, specific psychopharmacological treatments not being necessary to maintain, from the psychopathological point of view, the patient practically asymptomatic. In fact, the pellagra and scruvy suffered by the patient are included within the group of organic processes that can be responsible for psychiatric manifestations and, especially, for depressive and delusional symptoms[3,4]. All this makes up a good example of the present biopsychosocial approach to mental disorders, that is, of the psychiatric disease understood as the expression of the combination and interaction of social, psychological and biological factores that affect the patient and his/her world.

Finally, and to give a brief historical reference, we bring to mind the first clinical description of pellagra, made by the Spanish physician Gaspar Casal in the year 1762, that he called «rose's disease» because of the dermatological lesions with rosy apperance that appeared due to photosensitization[5] (fig. 2). According to Casal, the psychiatric manifestations were a complication in the pellagrous course that generally began in the months prior to summer. The discovery that niacin deficit was responsible for pellagra was made by Joseph Goldeberg from the United States of America.

Many Spanish clinicians, such as Grande Covián, Peralta or Bartolomé Llopis have stood out in the study of pellagra, describing a real epidemic in Madrid during the spanish civil war[6]. The latter author was responsible for a monograph called the pellagrous psychosis, edited in the post-war, and in which the psychiatric manifestations, principally melancholic and psychotic, are recognized as part of the natural course of the disease[7].

Although it is presently a rare disease in developed countries, it could occur in poverty-stricken persons,

**Figure 2.** Classical representation of the Casal's Rose's disease.

anorexia nervosa subjects, very deteriorated mental patients, alcoholics and malabsorption syndromes, among other series of conditions.

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