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# A new somatic-type delusional disorder subtype: delusion inversus

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## Abstract

The interplay between psychiatric and dermatologic conditions has been recognized for decades as evidenced by the widely accepted classification system of psychocutaneous disorders: (1) primary dermatologic disorder with psychiatric sequelae, (2) primary dermatologic disorder exacerbated by stress, (3) primary psychiatric disorder with dermatologic sequelae, and (4) miscellaneous. However, there is minimal literature regarding dermatologic patients who demonstrate a preoccupation with a more severe cutaneous disorder despite evidence confirming a diagnosis of a minor, treatable skin condition. These patients are a hybrid of the first and fourth categories and should be classified under a new entity known as delusion inversus. These patients have a primary dermatologic condition; however, they believe their condition to be more severe and malignant than it is, despite evidence to the contrary. Their beliefs are pathological and analogous to delusion disorder somatic type. Given the scarcity of data concerning delusion inversus, the epidemiology, diagnosis, and management of the disorder as described in this review is extrapolated from reported cases of delusion disorder and delusion disorder somatic-type. Often these patients will present to a non-psychiatric, outpatient clinic for medical care. Thus, it is imperative that dermatologists are able to identify the condition and manage the patient appropriately.

*Keywords: delusional disorder, delusional disorder somatic type, somatization, somatoform disorders, psychocutaneous disorders, illness anxiety disorder, hypochondriasis*

## Introduction

The field of psychodermatology was born out of the intersection of dermatology and psychiatry. Its

existence is not only a testament to the complex interplay between the two disciplines but a reminder to consider the associated psychiatric or dermatologic sequelae when making a primary diagnosis. Among the many psychocutaneous disorders seen by dermatologists, one that is not often described is the situation in which a patient presents with a minor, treatable skin disorder that the patient perceives as severe or incurable. To our knowledge, there is no mention in the literature of this clinical presentation or an associated diagnosis. In this review, we present a case of one such patient and propose the need for a new subcategory of psychocutaneous disorders, named delusion inversus, to classify these patients.

There is no universally-accepted classification system for psychocutaneous disorders. However, the most widely-published classification system described by Koo and Lee organizes the conditions into 4 categories: psychophysiological disorders (e.g. psoriasis, rosacea), psychiatric disorders with dermatologic symptoms (e.g. trichotillomania, delusions of parasitosis), dermatologic disorders with psychiatric sequelae (e.g. vitiligo, alopecia areata), and miscellaneous (e.g. cutaneous sensory syndromes, medication side effects), [1, 2].

One particular subtype of the psychiatric disorder with dermatologic symptoms is known as delusional disorder, somatic type. Delusional disorder is characterized by the presence of one or more delusions that persist for at least one month. The somatic type is defined by a single, discrete delusion of medical illness [3]. Typically patients will present with one of three types of discrete delusions: bromosis (belief that one is emitting a bad body odor), dysmorphosis (belief that one has a defect in a

physical feature), or parasitosis (belief that the skin is infested with insect or other foreign body), [3]. We propose the addition of a new subtype of delusional disorder somatic type known as delusion inversus. Unlike typical delusional disorder somatic type, delusion inversus is categorized as a primary dermatologic condition with psychiatric sequelae rather than a primary psychiatric condition.

### Clinical Case

A 64-year-old woman presented with annular scaly skin lesions, which had persisted for several months. She reported performing extensive research online to better understand the lesions and shared that she thought she had lupus erythematosus. A potassium hydroxide preparation showed branching hyphae consistent with a diagnosis of tinea corporis. Despite the evidence, the patient held firmly to the belief that she had lupus erythematosus. She refused topical antifungal therapy and departed the clinic without treatment.

## Discussion

### Defining delusional disorder

There are countless clinical cases, such as this one, in which patients anchor to a more severe diagnosis often influenced by internet searches, family, friends, or other providers. We believe that this is consistent with a new subtype of delusional disorder somatic type — delusion inversus. Delusion inversus is defined as a single, sustained delusion of a grave, incurable dermatologic condition in the setting of a diagnosed, benign skin condition persisting for at least one month. Patients with delusion inversus maintain their delusion despite clinicopathological evidence to the contrary. Their false belief contradicts the information available to them and is incongruent with the beliefs of the larger society. Moreover, these patients have no previous history of a serious dermatologic disorder and exhibit no signs of disruption to social or occupational functioning. This brief review examines the epidemiology, clinical features, differential diagnosis, and treatment of delusional disorder and delusional disorder somatic type and introduces this new concept of delusion inversus. The results of these reported studies may

aid in the diagnosis and management of delusion inversus.

### Epidemiology

The prevalence of delusional disorder is 0.03%, 17.4% of which are delusional disorder somatic type, which is estimated to be on the rise based upon recent epidemiological studies [4, 5]. Based on the literature, the condition is relatively uncommon; therefore, there is insufficient data to conclusively identify patient demographics. Gender distribution, for instance, is inconsistent across studies with some showing male predominance whereas others demonstrate a female predominance [5-7]. Other markers — age, immigration status, educational level, and socioeconomic status — have been more consistent across studies. Typically, patients present with delusional disorder in middle age (34 to 45 years old) with an estimated incidence of 20-25% in old age [7, 8]. Social risk factors frequently associated with delusional disorder include having low socioeconomic status, being married, being an immigrant, living in a city, having a family history of psychiatric disorders, suffering sensory deficit, and being exposed to stressful events [4, 9].

### Clinical Features

In clinical practice, patients with delusional disorder somatic type may present without any noticeable evidence of impairment. Their speech, psychomotor activity, and eye contact may be influenced by their emotional state, whereas their behavior, particularly their feelings and affect, are directly related to their delusions. It is critical that providers pay attention to these factors when conducting the history and physical examination. These patients typically perform well in their given occupation and may not demonstrate any other psychosocial limitations. All these factors are likely true of patients with delusion inversus.

### Diagnosis

The diagnosis of delusional disorder somatic type and delusion inversus is based on clinical judgment (**Table 1**) [10]. Delusional disorder somatic type is a diagnosis of exclusion and warrants initial investigation for another mental disorder, substance or medication-induced psychosis or dermatosis, or

infectious process [11]. The first step is to prove a pathologic psychiatric condition exists. This necessitates keen clinical judgment to discern an overvalued idea from a delusion. In his report, Manschreck suggested evaluating the extremeness or inappropriateness of a patient’s behavior to help judge between a delusion and an overvalued idea [12]. The second step is to evaluate for the presence of associated symptoms (e.g. confusion, agitation, perceptual disturbances, physical symptoms, mood changes) and the final step is to rule out alternative diagnoses with a comprehensive history, mental status exam, and/or laboratory or radiologic studies [12].

In the case of delusion inversus, the first step is to diagnose the underlying skin condition based on the clinical and/or pathologic findings. The second step is to discuss the patient’s perceptions and/or fears related to the diagnosis. If the patient’s perceptions and/or fears seem exaggerated and persist despite evidence to the contrary, the clinician should consider further work up for delusion inversus. The final step is to prove delusion inversus exists, which necessitates exclusion of an underlying, pathologic psychiatric disorder and diagnosis of a benign skin condition. Delusion inversus patients will exhibit a singular delusion in which they perceive their

**Table 1.** Diagnostic Criteria for Delusional Disorder, Somatic-type Delusional Disorder, and Delusion Inversus

Diagnostic Criteria for Delusional Disorder	Diagnostic Criteria for Delusional Disorder, Somatic Type	Diagnostic Criteria for Delusion Inversus
Presence of one or more delusions with a duration of one month or longer	Presence of one or more delusions with a duration of one month or longer	Presence of one delusion with a duration of one month or longer in the setting of primary, benign dermatologic condition
Criteria for schizophrenia have never been met (note: hallucinations if present are not prominent and are related to the delusional theme e.g., the sensation of being infected with insects is associated with delusions of infestation)	Criteria for schizophrenia have never been met (note: hallucinations if present are not prominent and are related to the delusional theme e.g., the sensation of being infected with insects is associated with delusions of infestation)	Criteria for schizophrenia have never been met (note: hallucinations if present are not prominent and are related to the delusional theme e.g., the sensation of being infected with insects is associated with delusions of infestation)
Apart from the impact of the delusion(s) or its ramifications, functioning is not markedly impaired, and behavior is not obviously bizarre or odd	Apart from the impact of the delusion(s) or its ramifications, functioning is not markedly impaired, and behavior is not obviously bizarre or odd	Apart from the impact of the delusion or its ramifications, functioning is not markedly impaired, and behavior is not obviously bizarre or odd
If manic or major depressive episodes have occurred, these have been brief relative to the duration of the delusional periods	If manic or major depressive episodes have occurred, these have been brief relative to the duration of the delusional periods	If manic or major depressive episodes have occurred, these have been brief relative to the duration of the delusional periods
The disturbance is not better explained by another mental disorder, such as obsessive-compulsive disorder, and is not due to the physiological effects of a substance or medication or another medical condition	The disturbance is not better explained by another mental disorder, such as obsessive-compulsive disorder, and is not due to the physiological effects of a substance or medication or another medical condition	The disturbance is not better explained by another mental disorder, such as obsessive-compulsive disorder, and is not due to the physiological effects of a substance or medication or another medical condition
Subtypes include erotomantic, grandiose, jealous, persecutory, mixed, or unspecified	This subtype applies when the central theme of delusion involves bodily functions or sensations. Subtypes include bromosis, dysmorphosis, and parasitosis	This subtype applies when the central theme of delusion involves having a serious dermatologic illness. This differs from illness anxiety disorder or somatic symptom disorder as patient(s) have a. a diagnosed, benign dermatologic condition and b. are unable to acknowledge the possibility that their false belief is fictitious or exaggerated in spite of the evidence

dermatologic condition to be more serious than it is. These patients tend to display anxiety about their symptoms and will associate any changes to their disease severity as confirmation of their delusion. Lastly, these patients may or may not spend excessive time or energy on their health concern.

Given that delusional disorder and delusion *inversus* are diagnoses of exclusion, clinicians must investigate for alternative diagnoses. Two conditions which are similar to delusional disorder somatic type are illness anxiety disorder and somatic symptom disorder. Illness anxiety disorder, formerly known as hypochondriasis, is defined as a preoccupation with and fear of having or acquiring a serious disorder persisting for at least 6 months. The patient's preoccupation and fear typically arises from misinterpretation of non-pathologic, physical symptoms. These thoughts tend to pervade the patient's social and occupational functioning. Somatic symptom disorder is an umbrella term and includes illness anxiety disorder as well as somatization disorder. Somatic symptom disorder is characterized by multiple, recurring physical complaints and associated maladaptive thoughts, feelings, or behaviors. Symptomatology of those patients with somatic symptom disorder may or may not accompany a medical illness.

Patients with a history of somatic symptom disorder or illness anxiety disorder often complain of bodily distress and typically have anxiety or preoccupation secondary to symptoms [13]. The defining factor for these two conditions is the patient's ability to acknowledge the possibility that their disease fears are exaggerated or fictitious [13]. This stands in stark contrast to patients with delusion *inversus* who are unable to acknowledge their beliefs may be exaggerated or fictitious.

### Treatment

There is limited evidence supporting any specific treatment guideline in delusional disorder or delusional disorder somatic type as data is only available in the form of case studies, case series, retrospective reviews, prospective studies, and one clinical trial. The management of delusional disorder and delusional disorder somatic type is mainly pharmacologic — including antidepressants,

anxiolytics, antipsychotics, antihistamines, and oral corticosteroids [14]. Second-generation antipsychotics (SGA) have become the mainstay of treatment in delusional disorder and delusional disorder somatic type given their side effect profile and efficacy as demonstrated by a nearly 50% positive response rate in a recent study [15]. Besides pharmacologic therapy, there are also nonpharmacologic interventions such as hypnosis, biofeedback, support groups, meditation, psychotherapy, guided imagery and progressive muscle relaxation, massage therapy, and cosmetic interventions [16]. Studies show that all subtypes of delusional disorder respond equally to treatment [15, 17]. Although prognosis is good if the condition is treated adequately, adherence is often challenging in this population and can affect treatment outcomes [15]. Because we are introducing delusion *inversus* as a new clinical subtype of delusional disorder and delusional disorder somatic type, there are no studies identifying effective treatment options. However, in a clinical setting, providers may utilize biopsy or laboratory results to provide patients with evidence of the clinical diagnosis. Given delusion *inversus* is a primary dermatologic condition with psychiatric sequelae, it is important that providers evaluate for suicidal or homicidal ideation. Any individuals who report suicidal or homicidal ideation warrant emergent referral to a psychiatrist for inpatient treatment or to a local emergency room for hospitalization [16]. Those patients displaying signs of severe anxiety, depression, or agitation warrant referral to a qualified mental health professional.

Lastly, patients fitting the criteria for delusion *inversus* may benefit from timely, interdisciplinary care from dermatology and psychiatry practitioners.

### Summary

More than 30% of dermatology patients may benefit from psychiatric evaluation in addition to their standard dermatologic care [18]. This is not an insignificant number given 25.3 million patient visits to office-based dermatologists were documented in one year [19]. Yet, there are significant barriers to

providing care in this patient population. The primary obstacle centers on the scarcity of research comparing treatment options among patients diagnosed with delusional disorder and delusional disorder somatic type. There are no randomized controlled trials comparing psychotropic drugs. This knowledge gap contributes to the deficiency in medical knowledge leaving clinicians unprepared to adequately diagnose and treat delusional disorder, delusional disorder somatic type, and therefore delusion inversus.

The second obstacle complicating the care in this patient population is the tendency of the patient to present to non-psychiatric providers. This is further complicated by internet-based resources (search engines, discussion boards, videos, podcasts, blogs, online communities), which patients may use to better understand their condition as well as garner information for self-diagnosis. Internet use among patients with delusion inversus may prove detrimental and solidify patient misconceptions. Several studies have shown individuals with high health anxiety (illness anxiety disorder, somatic symptom disorder) as more likely to use the internet for health information than other resources (books, magazines, journals), [20, 21]. These patients often use search engines to look up information on symptoms of concern [22-25]. Yet, this is not without risk. In their study, White and Horvitz found that 70% of patients who initially search for common, non-specific symptoms progress to searching for rare, more serious conditions [26]. These results suggest that using search engines as a diagnostic tool may

fuel a patient's concerns. This is a major obstacle to overcome, particularly in delusion inversus patients who may perceive their grave skin disease as the only issue.

Dermatologists must consider this inflation of disease by the patient even after a dermatologic diagnosis is rendered. More importantly, providers should be prepared to refer patients to a psychiatrist for co-management. The last obstacle to consider is the clinical diagnosis of delusion inversus itself. Differentiating a delusion from an overvalued idea can be challenging. A patient's personal belief may be misinterpreted as a delusion if his/her cultural or religious practices are disparate to those of the provider. These considerations must be considered when evaluating the patient for delusion inversus.

## Conclusion

We advocate for the addition of delusion inversus to the category of psychocutaneous disorders. These patients commonly present to dermatologists and are likely to continue to do so. To adequately prepare for these patients, further research should be conducted to provide clinicians with definitive guidelines for care, which should include sociodemographic profiles, standardized screening tools for the outpatient setting, and an outline for management.

## Potential conflicts of interest

The authors declare no conflicts of interests.

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