

From Cenesthesias to Cenesthopathic Schizophrenia: A Historical and Phenomenological Review

Gary Jenkins^a Frank Röhrich^b

^aNewham Centre for Mental Health, East London & The City Mental Health Trust, and

^bUnit for Social & Community Psychiatry, Queen Mary University of London, London, UK

Key Words

Cenesthesias · Cenesthopathic schizophrenia · Phenomenology · Psychopathology

Abstract

Background: Abnormal bodily sensations, ‘cenesthesias’, are frequently described psychopathological symptoms in schizophrenia. ‘Cenesthopathic schizophrenia’ is included but undefined within the category ‘other schizophrenia’ (F20.8) in the ICD-10 classification. **Method:** This narrative review pursues the development of the concept of cenesthopathic schizophrenia, from its foundation in the late 18th century to the present (phenomenology of cenesthesias). It explores its applicability and relevance as a diagnostic entity in psychiatry today. The review is based on a critical reading of papers identified through Medline (1951 to date), Psycinfo (1887 to date) and EMBASE (1974 to date) searches (using subject headings: cenesthesias, cenesthopathy, cenesthopathic schizophrenia) as well as a hand-search of related references in selected papers. **Results:** Current knowledge supports the notion of a distinct subgroup of schizophrenia patients with marked and dominating abnormal bodily sensations. **Conclusions:** Further research is necessary to identify other characteristics of the subgroup, to clarify the neurobiological and psychological basis of the phenomena and to determine as to whether the subgroup benefits from distinct treatment.

Copyright © 2007 S. Karger AG, Basel

Introduction

Schizophrenia patients frequently present with a range of different abnormal bodily sensations in prodromal, acute and chronic phases of their illness; these sensations sometimes phenomenologically dominate the clinical picture. The question as to whether a distinct corresponding subgroup of schizophrenia patients can be identified has hence been discussed in literature ever since Bleuler [1] first described the group of schizophrenias in 1911.

The concept of cenesthopathic schizophrenia appears undefined in the ICD-10 [2], without having been identified in previous editions. It is not recognized as a diagnostic entity in the Diagnostic and Statistical Manual of Mental Disorder, Fourth Edition [3], nor in any previous edition.

Definitions of the Concepts of Cenesthesia and Cenesthopathy

A psychiatric dictionary defines ‘cenesthesia’ or ‘cenaesthesia’ as, ‘the general sense of bodily existence (and especially the general feeling of well-being or malaise) presumably dependent on multiple stimuli coming from various parts of the body, including sensations of internal organ activity even though these are not necessarily on a conscious level’ [4]. In psychiatric literature the term was

mainly used to describe a range of difficult-to-describe and presumably abnormal bodily sensations. 'Cenesthopathy' is described as 'any localised distortion of body awareness, such as the feeling that a hand has turned to jelly; less commonly the term is used to refer to a feeling of general physical ill-being' [4]. Online searches reveal similar definitions in various encyclopaedias (e.g. 'cenesthopathy: A general feeling of discomfort, unease, and malaise not attributable to any particular part of the body').

Historical Perspective: From Philosophy to Psychiatry

Unanimously, different authors traced the origin of the word 'coenesthesia' to the doctoral thesis of a student of Johann Christian Reil [5–8], and recognize that the French equivalent was either 'sensibilité générale' or 'cenesthésie', with the German equivalent being 'Gemeingefühl'. Thus, according to Starobinski [5], Reil proposed a definition of cenesthesia as, '(the) means of which the soul is informed of the state of its body, which occurs by means of the nerves generally distributed throughout the body'. Starobinski [5] asserted that, according to Aristotelian doctrine, the information provided by the external senses reached the internal sense only after having been unified by the 'common sense', which was equivalent to the cenesthetic sense (Latin: *sensorium commune*, Greek: *koinon aistheterion*). The cenesthetic sense was seen as distinct from the five senses responsive to the environment. It was seen as a mediator between the external sensory apparatus and the internal sense and also as the common, integrative denominator for 'Meinhaftigkeit' (I-ness). Fuchs [6] regarded the introduction of the term cenesthesia or 'Gemeingefühl' as the philosophical attempt to establish a counterpart to the Cartesian model of a soul-less body.

Reil [8] described cenesthesia as the basis for instinctive drives and desires, closely connected with primary emotions; he already identified idiopathic disorders of cenesthesia, which were described as bodily illusions, and these ailments were characterized by a primary disturbance of bodily representations. Historically, this represented the inception of the recognition of cenesthopathic states.

Starobinski [5] observed that the concept of cenesthesia informed Sollier's [9] interpretation of hysteria and Seglas' [according to Starobinski, 5] formulation of the 'peripheral' mechanism states of depersonalization and

melancholic deliria state of negation. Thus, the phenomenological entity of cenesthesia seems to have been used as a basis of developing an understanding of other phenomenological entities.

The poet-psychiatrist von Feuchtersleben [10] believed that cenesthesia played a principal role in dreaming, and that dreaming was 'the unconscious language of the cenesthesia and the sensorium commune ... it very clearly shows, to those who comprehend its meaning, the state of the patient, though he himself is not aware of this'. This notion of cenesthesia as a subliminal process has major links with the Freudian theory of the unconscious. Freud [11] said, 'there can be no doubt that physical cenesthesia ... is among the internal somatic stimuli which can dictate the content of dreams ...' (p. 237). From a theory of dreams Freud [11] furthermore developed a theory of psychosis, in which he attributed importance to cenesthesia for the generation of the phenomena. Freud [11] quoted Radstock saying 'the majority of hallucinations and illusions occur in the region of the senses of sight and hearing and of cenesthesia. As in the case of dreams, the sense of smell and taste provide the fewest elements' (p. 90).

However, it was more than one hundred years after the introduction of the terminology in France, with Dupre and Camus [12], that the concept of disordered cenesthesia became widely known as cenesthopathy. Already at this time, a dichotomized distinction is noticeable between Dupre's concept of non-organic aetiology and the Russian and Scandinavian conceptualization of organic states being important in the aetiology of cenesthopathic states.

Phenomenology of Cenesthopathy

Cenesthopathy is a phenomenological entity that is recognized in psychiatric parlance in the English literature, but due to the scant literature on the topic, it is infrequently recognized in psychiatric practice in this country. Gelder et al. [13], in *The Oxford Textbook of Psychiatry*, make a fleeting reference to the concept of cenesthopathic states, yet in other standard texts, its existence is not acknowledged at all, and this includes all the major American textbooks on psychiatry.

As a descriptive phenomenological entity, cenesthopathy, but not cenesthopathic schizophrenia, is referred to briefly in a few texts on phenomenology [e.g. 14]. It may be surprising that cenesthopathic states have been largely forgotten when one considers the assertion by Dupre [15] in his monograph on cenesthopathic states that, 'psychiatrists are familiar with this syndrome as they see it

every day in their patients. Cenesthopathic states are, indeed, so common as to figure among the most frequent of the psychoses'. The scarcity with which this descriptive phenomenological entity is recognized is not because such experiences do not commonly exist. The experiences may be labelled as different phenomenology. Also there are phenomenological counterparts to cenesthopathic disturbances, i.e. Wernicke's [16] description of 'vital feelings', and Jasper's [17] description of 'awareness of body', which is discussed in more detail in the following section.

Phenomenological Counterparts to Cenesthopathy

There are understandable reasons for the general lack of recognition and knowledge of cenesthopathy by psychiatrists. For example, the authors note that the writers who have most influenced the tradition in phenomenology did not refer to the term cenesthopathy directly [18, 19] but interestingly they referred to concepts that bear striking analogies in different ways. This seems to have been the historical point of divergence, where similar descriptive phenomenologies became recognized as differently labelled phenomena. For example, Wernicke's [16] description of the somato-psyche implicitly includes the concept, with its emphasis on mind-body communication, and in Jaspers' *General Psychopathology* [17] the section on 'Awareness of Body' impressively describes comparable sensations. Wernicke [16] used the term 'vital feelings', referring to those processes by which the self was informed of the state of the body. In his description of bodily awareness, Jaspers [17] is indebted to Wernicke's [16] description of the somato-psyche, and vital feelings. When Jaspers [17] comments, 'Sensations that give rise to feelings blend in to an awareness of our physical state', this is congruent with the notion of vital feelings. Wernicke [16] had emphasized that disruptions in the vital feelings were commonly seen in affective psychoses, yet their importance in other psychotic illnesses was not recognized. However, more than half a century later, Jaspers [17] noted with respect to the vital feelings that 'we have a host of reports on these puzzling sensations, particularly from schizophrenic patients' (p. 91). This was in line with Bleuler's [1] early conceptualization of the psychopathology within the 'group of schizophrenias', where he described heterogeneous disturbances of body experience as characteristic and frequent accessory symptoms.

Describing the various psychopathological states of disturbed body experiences in 'endogenous psychosis', Lemke [18] and Glatzel [19] referred to the term 'Leibgefühlsstörungen' (disturbances of bodily feelings) and de-

fining those as 'endosensations', a bodily induced and bodily focussed perception, associated with certain feelings. Hereby they differentiated the phenomena from 'vital feelings' and placed the latter sensations nosologically closer to affective disorders. Thiele [20] emphasized that the variety of peculiar somatic sensations in psychosis had been described under the umbrella term 'hypochondria'. The concept of hypochondrias also featured in literature regarding paranoid psychosis, where abnormal bodily sensations are described under the umbrella term hypochondriacal delusions [e.g. 21, 22]. More recently, the description of abnormal bodily sensations in severe mental illness has advanced towards a more precise description of distinct perceptive, cognitive, affective and psychomotor dimensions of body experiences; the phenomena are described under the headings body schema, body image, body cathexis and body awareness [23, 24].

The Development of the Clinical Nosological Concept 'Cenesthopathic Schizophrenia'

Dupre and Camus [12] had introduced the notion of cenesthopathy as a symptom of mental illness and of pathological bodily sensation. Subsequently, different authors related cenesthopathy to different nosologies. Some related them to hysterical neuroses [9], others to organic processes, some saw them as the primary cause of delusional misidentification in Capgras syndrome [25]. From a medical perspective Halliday [26], for example, referred to cenesthopathic states as 'psychosomatic rheumatism' and 'induced headaches'. Kehrer [27] regarded cenesthopathy as a product of organic brain damage. Cenesthopathic disturbances have also been granted a place in organic psychiatry in relation to migraine [28, 29], alcohol withdrawal [30], multiple sclerosis [31] or infection with varicella zoster virus [32] and other neurological diseases [e.g. 33, 34]. Furthermore, Driesch et al. [35] discussed cenesthesia in relation to body dysmorphic disorder.

Over the course of the 20th century, there seemed to have been a shift in the psychiatric literature, with cenesthopathic disturbances not primarily being attributed any longer to affective psychoses, but also described in schizophrenia.

The descriptive phenomenological literature on schizophrenia gives evidence to the fact that schizophrenic patients have a wide variety of disturbances in their bodily feelings. Nevertheless, it appears not to be common psychiatric practice to refer to such feelings as disruptions of vital feelings or the analogous cenestho-

pathic states; neither is there a tradition to describe the phenomena as disturbances of body image or body schema. In Anglo-American literature, the experiences are most commonly described as hallucinations of the bodily senses or somatic passivity phenomena [36–38].

On the contrary, Russian psychiatry has a rich and more varied phenomenological tradition, not so dependent upon Wernicke [16] and Jaspers [17], and a body of publications on cenesthopathy exists in Russian psychiatric literature. It is this tradition which has culminated in the common recognition of the cenesthopathic variant of schizophrenia in Russia and the former Soviet Union [39–45]. There is furthermore limited literature with a similar notion from other central European countries and Japan on cenesthopathic/cenesthetic ('somatic') forms of schizophrenia [46–52].

'Cenesthetic schizophrenia' as an explicit subtype of the group of schizophrenias was first described by Huber [53]. He felt that the cases described by Dupre and Camus [12] as 'les cenestopathies' may have corresponded directly to the cenesthetic schizophrenia that he was describing. Huber [54] defined the syndrome as a schizophrenia which is characterized during its whole course by abnormal bodily sensations (variety of cenesthesias), combined very closely with affective disturbances. Certain central-vegetative, motor, and perception disorders were other symptoms frequently occurring. The symptoms are characterized as changing rapidly in nature, occurring often in paroxysms and phases. In his original conceptualization, Huber [53] furthermore emphasized the newness and the subjectively different quality of the bodily sensations for the patient with their strange, peculiar and partly bizarre character. Huber [54] observed that the patients did not have adequate ways to express and verbalize the cenesthesias, in that they used comparisons, pictures and neologisms. He acknowledged that, 'the fact that the cenesthetic type of schizophrenia was long disregarded and evaded systematic description is partly due to the difficulty in diagnosing it'. In cenesthetic schizophrenia, typical schizophrenic symptoms are limited to short psychotic episodes. Huber [54] suggested that the cenesthetic subtype is a schizophrenia that comes to a standstill at its beginning or develops into pure residual syndromes after one or a few short psychotic episodes. Whilst he asserted that cenesthetic schizophrenia represented a distinct psychopathological entity, he also recognized that cenesthetic disturbances also occurred in other schizophrenic subtypes.

The dominating psychopathological symptoms in another sample of 16 patients with established 'cenesthetic

schizophrenia' (described by Bräunig et al. [55]), as assessed on the 'Bonn Scale for the Assessment of Basic Symptoms' (BSABS) [56, 57], were sensations of pain (100%), unclassified (100%), desomatization (68.8%), electric and thermic sensations (62.5%), movement (50%), and numbness and stiffness (56.3%). Applying a wider range of psychopathological measures that capture abnormal body experiences (cognitive, perceptive, affective) for defining a corresponding nosological subtype of schizophrenia, Röhrich and Priebe [58] identified symptoms in a cluster-subgroup of schizophrenia patients as follows: centralization of body schema with underestimation of extremities, corresponding with feelings of body size changes (mainly shrinking and to a lesser degree enlargement), somatic depersonalization, boundary loss and – even though not statistically significant – higher cenesthesia scores [BSABS, most frequently reported: somatopsychic depersonalization (48.3%), sensations of abnormal heaviness/lightness/emptiness, of falling or sinking or of levitation or elevation (43.3%), sensations of numbness/stiffness/feeling strange (31.0%), circumscriptive sensations of pain (28.3%), sensations of extension/diminution/shrinking/enlargement or constriction (26.7%), or thermic and electric sensations (21.7%)].

Clinical Features of Cenesthetic/Cenesthopathic Schizophrenia

Prevalence

Within his first publication, Huber [53] assigned 18% of the patients in a sample of 223 schizophrenia patients to the subgroup of 'cenesthetic schizophrenia'. The characteristics of the subgroup were investigated within the group of those 50 patients. Since then, the prevalence was only investigated twice: Bräunig et al. [55] assessed 112 schizophrenic patients for the diagnosis of 'cenesthetic schizophrenia' according to standardized criteria and identified 16 patients, suggesting a prevalence of 6.25%. In a study on cenesthesias and body image aberration, aiming to identify a subgroup of schizophrenia patients with marked and dominating bodily sensations [58], a corresponding cluster comprised of 14 subjects, accounting for 23.3% of the total sample of paranoid schizophrenia patients.

Aetiological Factors

The notion of an organic origin of the phenomena (latent somato-neurological pathology) dominates the literature.

Huber [54] suggested that the limbic system, diencephalic and parietal areas of the brain may have aetiological importance in the genesis of cenesthesias. This was based on the observation of cenesthetic phenomena occurring in somatically definable brain diseases resulting from damages in these areas. It was felt that there was a close correlation between cenesthetic phenomenology and the spontaneous sensations of the thalamus (see also Schuettler and Auerbach [59]).

He also noted that some patients showed a central atrophy of the brain identifiable by pneumencephalography, computer tomography and magnetic resonance imaging. His findings supported the hypothesis that the cenesthetic subgroup of schizophrenia is probably associated with functional and partly morphological lesions in the diencephalons and the limbic system. Bär et al. [60] conducted a functional magnetic resonance imaging study, investigating the rapidly fluctuating painful somatosensory hallucinatory perceptions of a 'cenesthesia patient'. They found a significantly stronger activation of an area in the medial parietal cortex in comparison with a control condition (non-painful external somatosensory stimulation to the body part previously affected by hallucinations). According to Huber [53, 54], a sex disposition for cenesthetic schizophrenia exists in favour for men, whereas a sex disposition for cenesthetic depressions exists in favour for woman.

From a phenomenological perspective, the impact of disintegrated ego-consciousness and the corresponding ego-pathology [58, 61] and 'the splitting of the psyche' [1] on the development of abnormal bodily sensations was described.

Course and Prognosis

Huber [53] characterized the course of cenesthetic schizophrenia as a chronic-insidious-progressive disease, and Basov [47] found that 62% out of a sample of 101 cases with cenesthetic schizophrenia developed more profound negative changes, leading to profound disabilities. However, Huber [54] later indicated that after a follow-up period of twenty years, the prognosis was more favourable than he had expected in 1957 [53]. Whilst acknowledging that complete remissions were seldom seen (15%) – with a minimal residual state or slight pure deficiency syndromes in the majority of cases (60%) – there was rarely a progression to typical schizophrenic defect

psychoses (20% of cases only). The study of Bräunig et al. [55] nevertheless confirmed a rather chronic course with dominating negative symptoms and personality decline. Kobayashi and Kato [62] equally found hypochondriacal-cenesthetic symptoms as predictors of a less favourable outcome in a group of first-admission schizophrenic patients.

Differential Diagnosis

The slow onset of the disorder with up to years of un-specific, even though peculiar and often difficult to describe, somatic sensations leads to a variety of differential diagnoses up and until more specific symptoms (i.e. first rank symptoms, delusions and hallucinations) point in the direction of a schizophrenic illness. The range includes schizotypal and schizoid personality disorder, monosymptomatic delusional disorder, 'neuroses', Munchausen's syndrome, melancholic depression, organic brain diseases such as tumours, vascular, traumatic and inflammatory diseases (particularly multiple sclerosis and epileptic aura – especially the aura of complex-partial seizures), hypochondrias, and certain drug-induced psychoses, e.g. mescaline, ecstasy/methylenedioxy-methylamphetamine (MDMA) or lysergic acid diethylamide (LSD) psychoses.

Clinical Implications

Independent of the discussion as to whether the characteristics of the subgroup qualify for the nosological distinction of cenesthetic schizophrenia, the phenomena (cenesthesias and body image aberration) are considered to be important in relation to attempts to identify early predictive factors, decisive for the development of schizophreniform illnesses. Discussing the psychology of bodily feelings in schizophrenia 'as a particular mode of ego-body integration', Szasz [63] emphasized that 'many schizophrenias begin with characteristic hypochondriacal sensations'. Qualitative abnormal disturbances in bodily sensations have been identified as symptoms of the initial period or as relevant early warning signs of schizophrenic syndromes among children and adolescents [64–69]. More systematically, cenesthesias are assessed amongst other so called 'basic symptoms' with the BSABS; those symptoms are described as occurring on three 'developmental levels' [70] with progression from uncharacteristic to first rank schneiderian symptoms, more specifically described as a transition from a range of qualitatively abnormal bodily sensations (cenesthesias) to somatic passivity phenomena/bodily hallucinations [71]. As a result of recent research they

were assigned significance for the prediction of later onset of schizophreniform psychosis [68, 72, 73]. Prodromal symptoms, cenesthesias and body image aberration often precede the onset of the first psychotic episode for many years, according to Huber [54] on average seven years, and in the study of Bräunig et al. [55] the patients experienced hypochondriacal prodromal symptoms prior to the manifestation of schizophrenia for 15 years. These patients frequently presented with their inexplicable sensations to different specialists, 'some had undergone surgery' [55] and gave cause for concern, because the presentations were very similar to those of patients with somatoform disorders. Implications for recognition and prevention of schizophrenic psychosis are discussed with reference to early recognition projects on schizophrenia [72]. Klosterkötter et al. [74] investigated the predictive power of impaired bodily sensations (cenesthesias) amongst other prodromal symptoms on the BSABS. The results regarding the prognostic accuracy at a cut-off of 15% symptoms (any 2 of 13 symptoms/items of cluster 2 'bodily sensations') present suggested – compared with other clusters – slightly below average sensitivity (0.47), although clearly exceeding the minimum value of 0.30–0.40 required for diagnostically relevant symptoms of schizophrenia (as described by Andreasen and Flaum [75]). Furthermore, cluster 2 had the second highest specificity (0.52) as well as an average positive predictive value and second lowest false positive prediction score. Parnas [76] added a phenomenological perspective and described somato-psychic depersonalization ('it feels as if my body does not belong to me') as an example for morbid self-experiences in premorbid phases of schizophrenia. Emphasizing the importance of embodiment for the formation of a basic sense of self ('my-ness of experience') he outlines the 'corporeal aspect of self-awareness'. Equally Sass [77] referred to the human being as a bodily subject: '... a person's self feeling or ipseity is based, at least part, on awareness of proprioceptive and kinaesthetic sensations'. The results of a recent study, attempting to identify and characterize a subgroup of schizophrenia patients with marked and dominating bodily sensations, provide further evidence for the fundamental association of disturbed self-experiences and body-related psychopathology. Röhricht and Priebe [58] described significantly higher ego-psychopathology scores ('demarcation', 'vitality' and 'identity') in a group of patients with marked disturbances of body experience (underestimation of lower extremities, desomatization, boundary loss and diminution).

In a series of 11 case studies, Schmoll [78] evaluated how patients with 'cenesthetic schizophrenia' perceive the disturbances of body experiences; he found two main behavioural responses, either – in the majority – denial of symptoms and subsequently non-compliance with treatment despite good responses in 8 out of the 11 patients, or attempts to utilize the symptomatology for the compensation of ego-weaknesses. Bräunig et al. [55] characterized the behaviour of the patients in their study as 'bizarre and peculiar', with a variety of ritualistic habits, suggestive of coping strategies in relation to disturbances of body experience.

Given the overall lack of attention towards cenesthetic/cenesthopathic schizophrenia, specific treatments for the syndrome have not been systematically evaluated. Clinically, on the basis of case studies, these patients are regarded as relatively treatment resistant. Summarizing clinical experiences, Huber [79] emphasized a preference towards treatments with thioridazine, perazine and amitriptyline, also administered in combination. Smulevich et al. [80] referred to their experience in the treatment of 155 schizophrenia patients with 'cenestho-hypochondriacal disturbances' and describe a combined therapy with benzodiazepine tranquilizers (parenteral application) and small doses of neuroleptics as most effective, whereas Belokrylov [81] reported that those patients with cenesthopathic conditions benefited from treatment with atropine comatose therapy and subsequent intensive therapy with intravenous application of other psychotropic agents. Evaluating the efficacy of the antipsychotic zotepine in refractory psychosis, Harada et al. [82] found that 10 out of 22 patients benefited from treatment, and in this group cenesthetic hallucinations were markedly improved. It was furthermore suggested that this group of schizophrenia patients might specifically respond to body-oriented psychological intervention strategies [58, 83].

Conclusion

This literature review on the nosological subtype of cenesthetic/cenesthopathic schizophrenia reveals a striking discrepancy between the vast amount of references regarding the clinical observations of severely disturbed body experiences in schizophrenia and the lack of systematic research on the psychopathological phenomena. The subtype remains vaguely defined and operationalized criteria equivalent to those described for other types of schizophrenia within ICD-10 are required.

Further research is needed to identify other characteristics of the proposed nosological subtype of schizophrenia, in particular studies to clarify the neurobiological basis of the phenomena. Therefore, studies should be designed in a way that they go beyond mere listing of the phenomena in isolation; complex multi-modal assess-

ments of various distinctively defined aspects (cognitive, perceptual, affective, psychomotor) of abnormal bodily experiences must be carried out in order to examine the association with other psychopathological as well as neuropsychological findings.

References

- 1 Bleuler E: Dementia Praecox or the Group of Schizophrenias. New York, International Universities Press, 1952 (originally published in 1911).
- 2 World Health Organization: The ICD-10 Classification of Mental and Behavioral Disorders. Clinical Descriptions and Diagnostic Guidelines. Geneva, WHO, 1992.
- 3 American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, ed 4. Washington, American Psychiatric Association, 1997.
- 4 Campbell RJ: Psychiatric Dictionary, ed 6. Oxford, Oxford University Press, 1989.
- 5 Starobinski I: A short history of bodily sensation. *Psychol Med* 1990;20:23–33.
- 6 Fuchs T: Coenesthesia. On the history of general sensibility (in German). *Z Klin Psychol Psychopathol Psychother* 1995;43:103–112.
- 7 Hübner F: Coenesthesia. Abhandlung über das Gemeingefühl; in de la Roche (ed): *Zergliederung der Verrichtungen des Nervensystems*. Halle, Curt, 1794, vol 2, pp 225–303.
- 8 Reil JC: *Gesammelte kleine physiologische Schriften*, herausgegeben von einer Gesellschaft angehender Ärzte. Wien, 1811.
- 9 Sollier P: On certain cenesthetic disturbances with particular reference to cerebral cenesthetic disturbances as primary manifestations of a modification of the personality. *J Abnorm Psychol* 1907;2:1–8.
- 10 von Feuchtersleben E: *The Principles of Psychological Medicine*. London, Sydenham Society, 1947 (originally published in 1845).
- 11 Freud S: The interpretation of dreams; in Freud S, Strachey J, Freud A: *The Standard Edition of the Complete Psychological Works of Sigmund Freud* London, Hogarth, 1955, vol 5, pp 611ff (originally published in 1900).
- 12 Dupre E, Camus P: Les Cenestopathies. *L'encephale* 1907;2:616–631.
- 13 Gelder M, Gath D, Mayou R: *The Oxford Textbook of Psychiatry*. Oxford, Oxford University Press, 1988.
- 14 Sims A: Symptoms in the Mind: An Introduction to Descriptive Psychopathology, ed 2. London, Saunders, 1995.
- 15 Dupre E: Les cenestopathies; in Hirsch SR, Shepherd M (eds): *Themes and Variations in European Psychiatry*. Bristol, Wright, 1974, pp 385–394.
- 16 Wernicke C: *Fundamentals of Psychiatry* (in German). Leipzig, Thieme, 1906.
- 17 Jaspers K: *General Psychopathology*. Baltimore, John Hopkins University Press, 1997 (originally published in 1959).
- 18 Lemke R: Über die Bedeutung der Leibgefühle in der psychiatrischen Diagnostik. *Psychiatr Neurol Med Psychol* 1952;3:325–340.
- 19 Glatzel J: Leibgefühlsstörungen bei endogenen Psychosen; in Huber G (ed) *Schizophrenie und Zylothymie. Ergebnisse und Probleme*. Stuttgart, Thieme, 1969, pp 163–176.
- 20 Thiele W: Über das Wesen der Leibgefühlsstörungen bei den Schizophrenen. *Fortschr Neurol Psychiatr Grenzgeb* 1971;39:279–286.
- 21 Opjordsmoein S, Retterstol N: Hypochondriac delusions in paranoid psychoses. *Psychopathology* 1987;20:272–284.
- 22 Munro A: Monosymptomatic hypochondriacal psychosis. *Br J Psychiatry* 1988;153:37–40.
- 23 Röhrich F, Priebe S: Disturbances of body experience in schizophrenia patients (in German). *Fortschr Neurol Psychiatr* 1997;65:323–336.
- 24 Priebe S, Röhrich F: Specific body image pathology in acute schizophrenia. *Psychiatry Res* 2001;101:289–301.
- 25 Coleman SM: Misidentification and non-recognition. *J Ment Sci* 1933;79:42–51.
- 26 Halliday JL: The concept of psychosomatic rheumatism. *Ann Intern Med* 1941;15:666–671.
- 27 Kehrer HE: Anatomy of hypochondriac conditions (in German). *Arch Psychiatr Nervenkr Z Gesamte Neurol Psychiatr* 1953;190:449–460.
- 28 Sviridova E, Vladimirova S: Mental disorders in migraine patients (in Russian). *Soviet Neurol Psychiatry* 1988;21:58–64.
- 29 Podoll K, Bollig G, Vogtmann T, Pothmann R, Robinson D: Cenesthetic pain sensations illustrated by an artist suffering from migraine with typical aura. *Cephalalgia* 1999;19:598–601.
- 30 Anufriev A, Treskov V: Types of alcoholic withdrawal (in Russian). *Soviet Neurol Psychiatry* 1986;19:78–86.
- 31 Wurthmann C, Daffertshofer M, Hennerici M: Qualitative abnormal body sensations in multiple sclerosis (in German). *Nervenarzt* 1990;61:361–363.
- 32 Brüggemann BR, Machleidt W: Coenaesthesia after infection with varicella zoster virus. The psychodynamic meaning of suffering a children's disease at adult age (in German). *Nervenarzt* 2004;75:688–690.
- 33 Erkwow R: Psychopathology of vestibular auras. *Psychopathology* 1990;23:129–135.
- 34 Rommel O, Bokeloh M, Malin JP, Bräunig P, Strumpf M, Zenz M: Coenesthesia – an important differential diagnosis in chronic pain syndromes (in German). *Schmerz* 1999;13:201–204.
- 35 Driesch G, Burgmer M, Heuft G: Body dysmorphic disorder. Epidemiology, clinical symptoms, classification and differential treatment indications: an overview (in German). *Nervenarzt* 2004;75:917–929.
- 36 Fish F: *Fish's Schizophrenia*, ed 3, ed by M Hamilton. Bristol, Wright, 1984.
- 37 McGilchrist I, Cutting J: Somatic delusions in schizophrenia and the affective psychoses. *Br J Psychiatry* 1995;167:350–361.
- 38 Liddle PF: Descriptive clinical features of schizophrenia; in Gelder MG, Lopez-Ibor JJ, Andreasen NC (eds): *New Oxford Textbook of Psychiatry*. New York, Oxford University Press, 2000, vol 1, pp 571–576.
- 39 Guteneva TS: Psychopathology and the dynamics of cenesthopathy in schizophrenia (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1979;79:1703–1707.
- 40 Guteneva TS: Clinical picture of schizophrenia with cenesthopathic disturbances (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1980;80:74–78.
- 41 Avedisova AS: Onset of slowly progressive hypochondriacal schizophrenia (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1982;82:91–97.
- 42 Matveev VF, Kochergina Y, Prokudin V: Clinical time-course of cenestho-hypochondriac neurosis-like disturbance in adolescents with schizophrenia (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1985;85:1545–1549.

- 43 Zav'ialov AV, Baranova LM: Status of the sensory sphere in schizophrenia patients with a cenesthopathic-hypochondriacal syndrome (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1985;85:84–89.
- 44 Mamtseva VN: Pseudoneurological symptoms of latent depression in childhood schizophrenia (in Russian). *Soviet Neurol Psychiatry* 1988;21:46–52.
- 45 Drobizhev M, Luk'ianova LL: Depression in protracted simple schizophrenia (on the problem of correlation between positive and negative disorders) (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1991;91:60–64.
- 46 Saavedra A: Cenesthopathic form of schizophrenia (in Spanish). *Rev Neuropsiquiatr* 1966;29:320–351.
- 47 Basov AM: Clinical independence of cenesthopathic schizophrenia (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1980;80:586–592.
- 48 Maier C: Delusions of parasitosis. Psychopathological and diagnostic considerations (in German). *Nervenarzt* 1987;58:107–115.
- 49 Kato S: Psychopathological study of hypochondriac-cenesthopathic symptoms in schizophrenia (in Japanese). *Seishin Shinkeigaku Zasshi* 1994;96:174–219.
- 50 Kato S, Ishiguro T: Clinical courses of hypochondriac-cenesthopathic symptoms in schizophrenia. *Psychopathology* 1997;30:76–82.
- 51 Kobayashi T: Psychopathology and outcome in first-admission schizophrenia: a 13 year follow-up study at a medical school hospital (in Japanese). *Seishin Shinkeigaku Zasshi* 2001;103:383–410.
- 52 Wichowicz H, Wisniewski G: Diagnosis of somatoform schizophrenia among patients treated in the last decade in the 1st Department of Psychiatry of Medical University in Gdansk in 1989–1999 (in Polish). *Przegl Lek* 2003;60:625–629.
- 53 Huber G: Die coenästhetische Schizophrenie. *Fortschr Neurol Psychiatr* 1957;25:491–520.
- 54 Huber G: 'Cenesthetic schizophrenia' – a subtype of schizophrenic disease. *Neurol Psychiatry Brain Res* 1992;1:54–60.
- 55 Bräunig P, Krueger S, Rommel O, Börner I: Coenaesthetic schizophrenia (in German). *Schweiz Arch Neurol Psychiatr* 2000;151:16–21.
- 56 Gross G, Huber G, Klosterkötter J, Linz M: Bonner Skala für die Beurteilung von Basis-symptomen. Berlin, Springer, 1987.
- 57 Klosterkötter J, Ebel H, Schultze-Lutter F, Steinmeyer EM: Diagnostic validity of basic symptoms. *Eur Arch Psychiatry Clin Neurosci* 1996;246:147–154.
- 58 Röhricht F, Priebe S: Do cenesthesias and body image aberration characterize a subgroup in schizophrenia? *Acta Psychiatr Scand* 2002;105:276–282.
- 59 Schuettler R, Auerbach P: Disturbances of cenesthesia in schizophrenia as a source of diagnostic error (in German). *Psycho* 1977;3:111–117.
- 60 Bär KJ, Gaser C, Nenadic I, Sauer H: Transient activation of a somatosensory area in painful hallucinations shown by fMRI. *Neuroreport* 2002;13:805–808.
- 61 Scharfetter C: Ego-psychopathology: the concept and its empirical evaluation. *Psychol Med* 1981;11:273–280.
- 62 Kobayashi T, Kato S: Psychopathology and outcome of first-admission schizophrenic patients: hypochondriac-cenesthopathic symptoms as predictors of an unfavorable outcome. *Psychiatry Clin Neurosci* 2004;58:567–572.
- 63 Szasz TS: The psychology of bodily feelings in schizophrenia. *Psychosom Med* 1957;19:11–16.
- 64 Uschakow GK: Symptomatology of the initial period of schizophrenia starting in childhood or adolescence (in German). *Psychiatr Neurol Med Psychol* 1965;17:41–47.
- 65 Glatzel J, Huber G: Phenomenology of a type of endogenous juvenile asthenic insufficiency syndrome (in German). *Psychiatr Clin* 1968;1:15–31.
- 66 Mikhilin VM, Burbulia BA: Prepsychotic period in schizophrenic patients first arising and becoming acute in advanced age (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1980;80:726–731.
- 67 Matveev VF, Kochergina Y, Prokudin V: Clinical time-course of cenestho-hypochondriac neurosis-like disturbance in adolescents with schizophrenia (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1985;85:1545–1549.
- 68 Resch F, Koch E, Möhler E, Parzer P, Brunner R: Early detection of psychotic disorders in adolescents: specificity of basic symptoms in psychiatric patient samples. *Psychopathology* 2002;35:259–266.
- 69 Watanabe H, Takahashi T, Tonoike T, Suwa M, Akahori K: Cenestopathy in adolescence. *Psychiatry Clin Neurosci* 2003;57:23–30.
- 70 Gross G: The 'basic' symptoms of schizophrenia. *Br J Psychiatry Suppl* 1989;7:21–25.
- 71 Klosterkötter J: The meaning of basic symptoms for the genesis of the schizophrenic nuclear syndrome. *Jpn J Psychiatr Neurol* 1992;46:609–630.
- 72 Ebel H, Gross G, Klosterkötter J, Huber G: Basic symptoms in schizophrenic and affective psychosis. *Psychopathology* 1989;22:224–232.
- 73 Klosterkötter J, Schultze-Lutter F: Is there a primary prevention of schizophrenic psychosis? (in German). *Fortschr Neurol Psychiatr* 2001;69:104–112.
- 74 Klosterkötter J, Hellmich M, Steinmeyer E, Schultze-Lutter F: Diagnosing schizophrenia in the initial prodromal phase. *Arch Gen Psychiatry* 2001;58:158–164.
- 75 Andreasen NC, Flaum M: Schizophrenia. *Schizophr Bull* 1991;17:27–49.
- 76 Parnas J: Self and schizophrenia: a phenomenological perspective; in Kircher T, David A (ed): *The Self in Neuroscience and Psychiatry*. Cambridge, Cambridge University Press, 2003, pp 217–241.
- 77 Sass LA: Self-disturbance in schizophrenia: hyperreflexivity and diminished self-affectation; in Kircher T, David A (ed): *The Self in Neuroscience and Psychiatry*. Cambridge, Cambridge University Press, 2003, pp 242–271.
- 78 Schmoll D: Coenaesthetic schizophrenia. Case studies on self-rating of the disease and compliance (in German). *Fortschr Neurol Psychiatr* 1994;62:372–378.
- 79 Huber G: Cenesthetic schizophrenia as a significant type in schizophrenic diseases (in German). *Acta Psychiatr Scand* 1971;47:349–362.
- 80 Smulevich AB, Basov AM, Dubnitskaia EB, Izmailova LG: Psychopharmacotherapy of slowly progressive hypochondriacal schizophrenia (in Russian). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1979;79:1583–1587.
- 81 Belokrylov IV: The place of atropine coma therapy in the complex treatment of hypochondriacal schizophrenia (non-delusional hypochondriasis) (in German). *Zh Nevropatol Psikhiatr Im S S Korsakova* 1986;86:749–754.
- 82 Harada T, Otsuki S, Sato M, Wake A, Fujiwara Y, Kashihara K, Fukuda K: Pharmacopsychiatry 1987;20:47–51.
- 83 Röhricht F: *Body-Oriented Psychotherapy in Mental Illness. A Manual for Research and Practice* (in German). Göttingen, Hogrefe, 2000.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.