Functional neurological symptom disorder (conversion disorder) in adults: Clinical features, assessment, and comorbidity

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INTRODUCTION

Functional neurological symptom disorder (conversion disorder) is characterized by neurologic symptoms, such as weakness, abnormal movements, or nonepileptic seizures, which involve abnormal nervous system functioning rather than structural disease [1]. In addition, clinical findings on examination provide evidence of incompatibility between the symptoms and recognized neurologic disease. Nevertheless, the disorder causes distress and/or functional impairment, is common in clinical settings, and often has a poor prognosis [2-5].

This topic reviews the clinical features, assessment, and comorbidity of functional neurological symptom disorder. The terminology, diagnosis, differential diagnosis, epidemiology, pathogenesis, prognosis, and treatment are discussed separately, as are functional neurological symptom disorder with attacks or seizures (functional or psychogenic nonepileptic seizures) and functional neurological symptom disorder with abnormal movements (functional movement disorders).

- (See "Functional neurological symptom disorder (conversion disorder) in adults: Terminology, diagnosis, and differential diagnosis".)
- (See "Functional neurological symptom disorder (conversion disorder) in adults: Epidemiology, pathogenesis, and prognosis".)

- (See "Functional neurological symptom disorder (conversion disorder) in adults: Treatment".)
- (See "Psychogenic nonepileptic seizures: Etiology, clinical features, and diagnosis".)
- (See "Functional movement disorders".)

CLINICAL FEATURES AND ASSESSMENT

General principles — Functional neurological symptom disorder (conversion disorder) can present with [6]:

- Nonepileptic seizures (see "Psychogenic nonepileptic seizures: Etiology, clinical features, and diagnosis")
- Weakness and paralysis
- Movement disorders (see "Functional movement disorders")
- Speech disturbances
- Globus sensation (see "Globus sensation")
- Sensory complaints
- Visual symptoms
- Cognitive symptoms

These symptoms may be episodic or sustained, and acute or chronic [7].

Assessment of patients presenting with possible functional neurological symptom disorder includes a medical history, physical examination, and indicated laboratory tests, as well as a psychiatric history and mental status examination. Patients are encouraged to recount all previous medical encounters and psychiatric diagnoses. Obtaining prior medical records can help provide information about previous symptoms or problems that patients may have forgotten or not recognized as a functional disorder [8].

It is essential to look for neurologic and other general medical conditions, particularly early-stage diseases [1,9,10]. The clinical evaluation should emphasize diseases that explain the patient's symptoms better than functional neurological symptom disorder, as well as diseases that are comorbid; among patients with nonepileptic seizures, approximately 10 to 20 percent also have epilepsy [11], and patients with multiple sclerosis may also have functional limb weakness [12].

Comorbid psychiatric disorders are often present (see 'Psychiatric disorders' below), but may be difficult to discern because patients focus upon physical symptoms rather than symptoms of depressive and anxiety disorders.

Avoid indirect and fragmentary discussions of the diagnosis during the assessment [13]. Instead, clinicians should understand that successfully presenting the diagnosis of functional neurological symptom disorder to patients is a fundamental aspect of treatment. (See "Functional neurological symptom disorder (conversion disorder) in adults: Treatment", section on 'Presenting the diagnosis'.)

Patients diagnosed with functional symptoms should be reevaluated periodically because in rare cases a general medical etiology may take years to become evident.

History — Clinicians taking the history of patients with a possible diagnosis of functional neurological symptom disorder should ask about [8,14]:

- **All current somatic symptoms** – Making a complete list of the symptoms at the beginning of the assessment can prevent new symptoms from appearing later. It can also be therapeutic as patients may feel more understood and unburdened. We routinely ask about fatigue, pain, dizziness, sleep disturbance, and impaired memory and concentration if the patient does not volunteer these. After the list is complete, return to each symptom as necessary.

  Multiple current neurologic symptoms (mixed symptoms subtype of functional neurological symptom disorder [eg, motor and sensory symptoms]) are often found in functional neurological symptom disorder [1,15]. In a prospective study of 54 patients with functional neurological symptom disorder, mixed symptoms occurred in 35 percent [16], and a randomized trial of 127 patients with the disorder found that the mean number of functional symptoms was 2.5 [17].

  Patients with functional neurological symptom disorder often report a large number of current or prior physical symptoms, dissociative symptoms, or functional disorders (eg, irritable bowel syndrome, fibromyalgia, or chronic fatigue syndrome [also known as myalgic encephalomyelitis/chronic fatigue syndrome]), in addition to functional symptoms [18-20]. As an example, one prospective study found that the mean number of physical symptoms was greater in patients with functional weakness (n = 107) than patients with weakness due to recognizable neurologic disease (n = 46; nine versus five symptoms) [21].

- **Circumstances at onset** – Clinical features that are commonly observed at onset of functional symptoms include panic attacks, migraine headache, or pain, as well as physical injury. A systematic review of 132 observational studies of functional neurological symptom disorder (869 patients) found that immediately prior to onset, physical injury occurred in 37 percent [22]. Although subsequent studies are consistent with this finding [23,24], physical injury is not specific to functional neurological symptom disorder. In

addition, both functional (psychogenic) nonepileptic seizures and functional motor symptoms may occur after general anesthesia [25,26].

Onset of functional symptoms is often sudden. As an example, a prospective study of 107 patients with functional weakness found that sudden onset (≤6 hours to maximal onset) while awake occurred in 46 percent, or upon waking from sleep or general anesthesia in 15 percent [25].

- **Dissociation** – Dissociation in the form of depersonalization (feeling disconnected from oneself) or derealization (feeling detached from the environment) may be present in patients with functional neurological symptom disorder, particularly at onset of the disorder or in association with a nonepileptic seizure [27,28]. Patients may describe dissociative symptoms as feeling "outside of myself," "spaced out," "far away," or "unreal."

- **Disability** – Patients with functional neurological symptom disorder experience disability and distress that is comparable with patients with recognizable neurologic disease [21,29]. Asking "What is a typical day like?" or "Do you spend much time in bed or out of the house?" may be more informative than asking patients what they cannot do [14].

- **Ideas, concerns, and expectations** – Asking patients what they think may be causing their neurologic symptoms and what should be done to treat them enables clinicians to tailor their explanation of the diagnosis and rationale for treatment.

  Patients are frequently dissatisfied with exclusively psychologic explanations for their neurologic symptoms, and may be less likely to attribute their symptoms to psychologic factors [29-31]. In one prospective study (n = 153), the belief that stress was a possible cause of the illness occurred in fewer patients with functional weakness than patients with weakness due to recognizable neurologic disease (24 versus 56 percent) [21].

- **Psychosocial functioning** – The relationship between functional symptoms and psychosocial functioning is bidirectional (each can affect the other) [14,29].

- **Family history** – Illnesses in parents, siblings, and children are common in patients with functional neurological symptom disorder. As an example, one prospective study (n = 60) found that general medical disorders in first-degree relatives were more common among patients with functional neurological symptom disorder than patients with recognizable neurologic disease (80 versus 37 percent of patients) [18]. Psychiatric disorders were also more common in relatives of functional neurological symptom disorder patients. In addition, some studies have found that patients with functional neurological symptom disorder have a family history of functional neurological symptom disorder [32]. However,

it is not established that patients with functional neurological symptom disorder mimic the symptoms of other individuals [33].

- **Course of illness** – Asking "When did you last feel well" is a useful way of determining when onset of functional symptoms occurred, particularly for patients who have been ill for several years. In addition, a large amount of information can be condensed by drawing a graph with time on the x axis, severity of symptoms on the y axis, and adding life events or treatments (figure 1). The intensity of functional symptoms may fluctuate [21].

- **Previous functional disorders and functional symptoms** – Previous functional disorders such as irritable bowel syndrome or fibromyalgia, or prior functional symptoms, can be helpful as evidence of a patient's vulnerability to functional neurological symptom disorder.

- **Prior clinical experiences** – Patients may have experienced iatrogenic harm from a misdiagnosis of recognized neurologic disease, unnecessary tests or medication, and from feelings of powerlessness when a doctor appears not to know what is wrong with them [30,31]. Reports of feeling disbelieved and ensuing self-doubt about the veracity of one's own symptoms is common [31].

- **Recent psychological stressors** – Although adverse life events are common in patients with functional symptoms [18,34,35], many patients do not have obvious life events and stressors. In addition, psychological factors are not specific to functional neurological symptom disorder and can be diagnostically misleading if given too much weight. (See "Functional neurological symptom disorder (conversion disorder) in adults: Epidemiology, pathogenesis, and prognosis", section on 'Predisposing, precipitating, and perpetuating factors'.)

- **Symptoms of comorbid psychiatric disorders** – We typically leave questions about feelings of depression and anxiety until the end of the assessment (unless the patient volunteers these symptoms). Patients may understandably become defensive if they think that their symptoms will be ascribed to a "mental disorder." For many patients, attributing physical symptoms to a mental disorder is the same as suggesting that the symptoms are "fake." It may thus be helpful to avoid using terms such as depression or anxiety and frame the questions in terms of the presenting symptoms. As an example, we may ask "Does your weakness ever make you feel down or frustrated?" instead of "Have you been feeling depressed?" Anxiety and dysphoria are often but not always present in patients with functional neurological symptom disorder [3]. (See 'Psychiatric disorders' below.)

- **Physical and sexual abuse** – Questions about abuse or adverse experiences, like those for comorbid psychiatric disorders, are often best left to the end of the assessment or a follow-up visit. Patients may be more forthcoming after trust has been established during the preceding phases of the assessment. It is important to provide patients enough time to discuss the issue if they volunteer information about abuse; clinicians pressed for time will be better served by asking about abuse during a subsequent interview or leaving this to a different clinician [8].

  A prior history of childhood abuse or neglect is more common in patients with functional neurological symptom disorder than patients with neurologic disease and healthy controls [35-37]. However, it is not clear that a history of sexual abuse is more common in functional neurological symptom disorder than patients with other psychiatric disorders, and most patients with functional neurological symptom disorder have not experienced abuse or neglect. (See "Functional neurological symptom disorder (conversion disorder) in adults: Epidemiology, pathogenesis, and prognosis", section on 'Predisposing, precipitating, and perpetuating factors'.)

Other clinical features previously identified as specific to functional neurological symptom disorder include “la belle indifference” and a predominance of left-sided symptoms; however, the evidence indicates that these two features are not specific to patients with functional neurological symptom disorder [21,38].

La belle indifference, which refers to an incongruous lack of concern (indifference) about significant symptoms, has no validity in discriminating functional neurological symptom disorder from recognizable neurologic disease. In a systematic review of 11 prospective or retrospective studies, the median frequency of la belle indifference was comparable for patients with functional neurological symptom disorder (n = 356) and patients with defined neurologic disease (n = 157; 21 versus 29 percent) [39]. In our experience, la belle indifference often indicates that patients are trying to appear brave or cheerful in the presence of actual distress (to avoid receiving a psychiatric diagnosis such as depression), or may less often suggest factitious disorder [21].

Unilateral functional symptoms do not appear to be more common on one side of the body than the other. Although a meta-analysis of 90 observational studies (1139 patients with functional symptoms) found that left-sided symptoms occurred in more patients than right-sided symptoms (58 versus 42 percent), this finding appeared to be due to reporting bias [38]. A separate analysis was conducted in the 78 studies (553 patients) in which laterality was reported incidentally in the study text and did not appear in the title; a left-sided preponderance of symptoms was found in only 53 percent of patients.

Examination — For patients who present with symptoms that may represent functional neurological symptom disorder, the principles of assessment are to look for evidence of [1,8]:

- Inconsistency at different points in the examination (eg, a patient with no ankle plantar flexion while supine on the examination table is able to stand on tip toes). In addition, observing patients before and after the formal examination can be revealing. As an example, compare the patient's gait entering and leaving the examination room, what occurs when patients take their clothes off and put them on, or what occurs when they retrieve something from their bag.

- Incongruity between the symptoms and recognized disease, (ie, the symptoms do not conform to known anatomical pathways and physiologic mechanisms). As an example, a tubular visual field defect is inconsistent with the laws of optics and eye physiology. (See 'Visual symptoms' below.)

Thus, the diagnosis of functional neurological symptom disorder rests upon positive clinical findings, which are described below. (See 'Weakness and paralysis' below and 'Sensory symptoms' below.)

However, patients with recognizable neurologic disease may also display these positive findings, indicating the presence of functional disorder comorbidity (also called "functional overlay") [12,40]. In addition, inconsistent signs may be produced consciously (as in factitious disorder or malingering).

Additional information about the medical evaluation for functional neurological symptom disorder is discussed separately in the context of somatic symptom disorder. (See "Somatic symptom disorder: Assessment and diagnosis", section on 'Assessment'.)

Subtypes of functional neurological symptom disorder — The clinical features and assessment of each functional neurological symptom disorder subtype are described below, and are listed as follows from most to least common [2].

Nonepileptic seizures — A variety of terms have been used to describe functional neurological symptom disorder with seizures, including psychogenic nonepileptic seizures/attacks, psychogenic seizures, nonepileptic seizures, functional seizures, or dissociative seizures/attacks. This condition is marked by apparent impaired or loss of consciousness with abnormal generalized limb shaking or sudden motionless unresponsiveness, and the lack of paroxysmal activity on electroencephalograms [1]. An example of a positive sign of functional neurological symptom disorder with seizures is closed eyes with resistance to opening.

Psychogenic nonepileptic seizures are discussed separately. (See "Psychogenic nonepileptic seizures: Etiology, clinical features, and diagnosis".)

Weakness and paralysis — Weakness is common in patients with functional neurological symptom disorder; a randomized trial with 127 patients found that weakness occurred in 31 percent [17]. Patients often report a history of dropping things, or ”dragging” or sudden buckling of the affected leg. Unilateral, hemiparetic symptoms are most frequent, but weakness in just one limb or in both legs also occurs [18,21]. Patients commonly report that the affected limb doesn't feel “part” of them or “belong” to them, which can be interpreted as a form of depersonalization. Other dissociative symptoms as well as panic attacks, physical injury to the affected limb, and pain are commonly associated with onset of functional weakness [22,25,40].

The key diagnostic finding in functional weakness or paralysis is that the deficit is inconsistent at different times in the examination [21]. Positive signs of functional weakness on physical examination include the following [8,14,41]:

- Obvious inconsistencies – Examples include:
  - No ankle plantar flexion while lying down, but the ability to stand on tip toes
  - Inability to move arm during examination, but able to use arm to take something out of a bag or put shoes back on
- Hoover sign – The test is based upon the principle that the hip is extended when the contralateral hip is flexed against resistance [42]. In weakness due to functional neurological symptom disorder, hip extension is weak in the affected leg with the patient lying down supine or seated. This in itself is unusual in a disease process, but is common in functional limb weakness. Hoover sign (indicating functional neurological symptom disorder) occurs when hip extension in the affected leg returns to normal during contralateral hip flexion against resistance in the unaffected leg (figure 2 and picture 1). Ask the patient to concentrate on their good leg when flexing it. However, pain may result in a false positive. Studies in acute and chronic cases of functional neurological symptom disorder with weakness or paralysis suggest reasonable sensitivity and specificity for Hoover sign [21,43-45].
- Hip abductor sign – Comparable with Hoover sign, when the hip abductor sign is positive, hip abduction weakness in the affected leg returns to normal during contralateral hip abduction against resistance in the unaffected [46]. However, pain may result in a false positive.

- Cocontraction sign – Cocontraction is the simultaneous contraction of agonist and antagonist muscles. During muscle strength testing of the agonist (eg, the biceps) in patients with functional neurological symptom disorder, the clinician may be able to detect contraction of the antagonist (eg, the triceps) [41,47].

- Give-way or collapsing weakness – The patient is asked to exert force in a particular direction, and as the examiner lightly exerts force in the opposite direction, the examiner feels an abrupt decrease in resistance as the patient's extremity gives way suddenly [21]. In weakness due to neurologic disease, give-way weakness is less common. However, give-way weakness is a soft sign of functional weakness; other causes of give-way weakness include chorea, pain, joint problems, and failure to understand instructions.

- A delayed, slow, or jerky descent when the clinician positions the outstretched arm in front of the patient and then releases it.

- A global or inverted pyramidal pattern of weakness in the legs (eg, extensors weaker than flexors) [21].

- Facial spasm due to excessive contraction of orbicularis oculus (sometimes associated with photophobia) may be mistaken for ptosis (facial weakness) [48,49]. In the lower face, excessive contraction of the platysma may pull the mouth down or the jaw to the ipsilateral side and be mistaken for facial weakness.

- Drift without pronation sign – If patients with functional upper limb weakness are asked to hold their arms in the air with their palms facing upwards, fingers adducted, and eyes closed, the affected arm may drift downwards but without accompanying pronation commonly seen in patients with upper motor neuron lesions [50].

- Sternocleidomastoid test – Patients are asked to rotate their head against resistance [45,51]. In functional weakness, patients exhibit difficulty rotating to the affected side, whereas patients with recognizable neurologic disease less commonly manifest weakness.

One study of 20 patients and 20 controls found that Hoover sign, cocontraction sign, give-way weakness, and drift without pronation sign were the most reliable of these signs [45].

Abnormal movement — Functional neurological symptom disorder with motor symptoms or deficits can manifest as movement disorders. There are several functional movement disorder syndromes that are based upon the presenting symptoms, including:

- Functional tremor
- Functional dystonia

- Functional gait disorder
- Functional myoclonus
- Functional Parkinsonism

Functional movement disorders, including their common clinical characteristics, the specific clinical features of each syndrome, and their management are discussed separately. (See "Functional movement disorders".)

Speech symptoms — The most common functional speech symptom is functional dysphonia, which usually presents as whispering or hoarseness, often after an episode of viral laryngitis has remitted [52]. Clues that the speech impairment is related to a functional disorder include the presence of a normal cough or singing voice. The diagnosis of functional neurological symptom disorder is supported by the presence of multiple functional voice disorder symptoms and subtypes (evidence of internal inconsistency); the diagnosis is confirmed by normal vocal cord movement on laryngoscopy.

Patients with functional motor symptoms also commonly complain of intermittent slurred speech; other articulatory and prosodic speech problems may be characteristic of functional neurological symptom disorder, including stuttering speech and telegrammatic speech (omitting conjunctions and definite articles) [53-55]. Foreign accent syndrome and mutism may also occur as a functional neurological symptom disorder [54,56].

Globus sensation (swallowing symptoms) — Globus sensation (also called globus pharyngeus) describes the functional symptom of a “lump” or “ball” in the throat [57]. The sensation is usually most pronounced at times other than during swallowing. Globus pharyngeus is discussed separately. (See "Globus sensation".)

Sensory symptoms — Sensory disturbance (eg, anesthesia or sensory loss) is common in functional neurological symptom disorder; a randomized trial with 127 patients found that paresthesias occurred in 50 percent and numbness in 41 percent [17]. In addition, patients often report a feeling of being “cut in half” (midline splitting) or that one side or part of their body “doesn’t belong” to them, and may report a mixture of pain, sensory disturbance, and weakness [14].

Sensory symptoms in functional neurological symptom disorder may be incongruent with known nerve pathways. As an example, patients may describe sensory loss in the entire arm with a circumferential cut off at the shoulder, or the whole leg with a circumferential cut off at the groin, which is incompatible with dermatomal or cortical sensory loss [8,58].

There are several physical signs that suggest a diagnosis of functional sensory loss, but none are conclusive because the signs are not specific to functional neurological symptom disorder, patients may misunderstand the clinician's instructions, and the signs can be found in patients with sensory problems due to neurologic disease with a known pathologic basis [59]. These signs include [8,14,41]:

- Altered vibration sense across the forehead or sternum (which generally should not occur in recognizable disease because these are single bones)
- Midline splitting (figure 3), in which sensation is split exactly in the midline (cutaneous branches of the intercostal nerves overlap such that sensory loss should occur 1 to 2 centimeters from the midline; however, midline splitting can occur in thalamic stroke)
- Patients with complete sensory loss who respond when they are asked to say "yes" if they feel a stimulus and "no" if they do not
- Inconsistent responses when sensation in the hands is tested with the fingers interlocked behind the back

Visual symptoms — Functional visual disturbance is common; a randomized trial with 127 patients found that functional visual symptoms occurred in 16 percent [17]. Functional visual symptoms include intermittent blurred vision, double vision (due to spasm of convergent eye movements), nystagmus, visual field defects, and complete blindness [8].

Complete blindness, as with complete paralysis, is associated with an increased probability that the symptom is factitious. In patients with complete binocular blindness, specific tests for functional neurological symptom disorder with visual symptoms include the following [8,60]:

- Fingertip test, which is performed by asking the patient to touch the tips of their index fingers together. Whereas blind people can readily do so using proprioception, patients with functional neurological symptom disorder tend to have difficulty bringing their fingers together.
- Signature test, which is a nonvisual task that blind people can perform. Patients with functional neurological symptom disorder may have difficulty writing their signature.
- Menace reflex, which involves presenting a visual threat (eg, a rapidly approaching hand) to the eye. Flinching or blinking is generally observed in functional neurological symptom disorder. This test does not exclude a cortical visual problem.

- Tearing reflex, which consists of tearing in response to suddenly presenting strong illumination in front of the patient; the reflex requires intact vision. This test does not exclude a cortical visual problem.

- Optokinetic test, which consists of holding a large rotating drum with black and white vertical stripes on it close to the patient's eyes. Optokinetic nystagmus indicates that at some level the brain can detect the stripes; however, this test does not exclude a cortical visual problem.

Other tests for functional visual symptoms include the following [8,60]:

- Tubular visual field defect; as an example, tunnel vision of the same width when the patients is examined at 1 and 2 meters (figure 4).

- Convergence spasm leading to hyperadduction of one eye during convergent testing, which can resemble a sixth nerve palsy. The patient may also complain of diplopia [61].

- A pattern of "spiraling" on Goldmann automated visual field testing. This occurs because at the start of an automated visual test, peripheral vision is present. However, as the test progresses and the stimuli rotate, the patient typically develops increasing "tunnel vision" resulting in a "spiral."

- Fogging test of reduced visual acuity – Lenses of increasing diopter are placed over the patient's unaffected eye (without the patient's awareness) while reading a Snellen chart until any remaining acuity must be coming from the affected eye.

Other special sensory symptoms — Functional symptoms may rarely take the form of olfactory or hearing disturbances [1].

Cognitive symptoms — Cognitive symptoms are not usually described as part of functional neurological symptom disorder [1]. Nevertheless, a functional cognitive disorder can be diagnosed if there are positive clinical findings that demonstrate either inconsistency at different points in the examination, or incongruity between the symptoms and recognized disease [62-64] (see 'Examination' above). Cognitive symptoms that are commonly encountered in patients with functional neurological symptom disorder include [65,66]:

- Poor concentration and memory
- Impaired fluency
- Jumbling of words when speaking
- Word finding difficulty
- Variability in speed of response

More marked cognitive symptoms may occur in bedside tests of cognition and on neuropsychological testing [62,63]:

- Marked loss of remote autobiographical memory
- Inability to perform overlearned skills such as reading, spelling, or simple arithmetic
- Ability to perform complex implicit cognitive tasks in the presence of poor performance on simple explicit tasks
- Performance inconsistent with observed behavior
- Performance inconsistent at different points in the examination or across repeated evaluations
- Impaired performance on tests of effort specifically designed to assess validity of cognitive performance (although poor performance on these tests does not distinguish between intentional and unintentional poor performance)

Some of these symptoms may also be attributable to anxiety or depressive disorders.

More dramatic amnesia may occur as a symptom of functional neurological symptom disorder [67]. Short periods of amnesia are integral to functional seizures (during which the patient is unresponsive and amnesic for events rather than unconscious) and may also accompany the onset of motor functional symptoms. Isolated functional amnesia presents with a dense and well demarcated focal retrograde memory loss for a period ranging from days to years with preservation of anterograde memory function (ability to make new memories) [68].

Laboratory and radiologic studies — Laboratory, radiologic, and neurophysiologic tests are generally required to seek neurologic/general medical disorders that either explain the presenting symptoms or are comorbid [21]. However, the diagnosis of functional neurological symptom disorder is not one of exclusion and rests upon positive clinical findings, rather than negative tests. Although negative test results are consistent with the diagnosis in most patients with functional neurological symptom disorder, many patients with neurologic disorders have normal test results, and a diagnosis of functional neurological symptom disorder can still be made when an additional neurologic disease is present (as long as that disease is not a better explanation for the examination findings) [11,40,69].

Investigations should be performed as quickly as possible; protracted testing may encourage diagnostic uncertainty in patients, who then focus upon finding a disease rather than

rehabilitation [8]. We are explicit about why we are ordering the tests, and predict the results will be normal when this is reasonable [14].

We warn patients that testing may uncover abnormalities that are unrelated to the presenting symptoms (but which derail treating the symptoms). As an example, a meta-analysis of 16 studies with more than 19,000 individuals found that incidental findings occur in approximately 3 percent of brain magnetic resonance images [70]. In addition, spinal imaging of asymptomatic individuals shows disc prolapses at a frequency percentage roughly equal to the patients "age plus 10" [71]. Tests can also yield false negatives.

COMORBID DISORDERS

Comorbidity is common in functional neurological symptom disorder (conversion disorder), and patients may have multiple comorbid disorders.

Psychiatric disorders — Comorbid psychiatric disorders may occur in up to 90 percent or more of patients with functional neurological symptom disorder [15,16,72-74]. As an example, a prospective study found that the lifetime prevalence of psychiatric disorders was greater in patients with functional weakness (n = 107) than patients with weakness due to recognizable neurologic disease (n = 46; 95 versus 71 percent of patients) [21].

Multiple studies suggest that the frequency of comorbid depressive disorders and anxiety disorders in patients with functional neurological symptom disorder exceeds the frequency in patients with defined neurologic disease by approximately 20 to 30 percent [18,75,76]. As an example, a prospective study found higher rates of comorbid depression and/or anxiety in patients with functional weakness (n = 107) compared with patients with weakness due to a neurologic disease such as multiple sclerosis (n = 46) [21]:

- Unipolar major depression – 32 versus 7 percent
- Generalized anxiety disorder – 21 versus 2 percent
- Panic disorder – 36 versus 13 percent

Dissociative disorders are also common in patients with functional neurological symptom disorder. A prospective study of 38 patients found a dissociative disorder in 47 percent [74].

Compared with patients who have defined neurologic disease, patients with functional neurological symptom disorder are more likely to have personality disorders, especially [15,73,77]:

- Borderline personality disorder

- Histrionic personality disorder
- Narcissistic personality disorder

As an example, a prospective study found that a comorbid personality disorder was present in more patients with functional neurological symptom disorder (n = 30) than patients with recognizable neurologic disease (n = 30; 50 versus 17 percent) [18].

Suicide attempts occur often in functional neurological symptom disorder. A prospective study of 38 patients found a history of suicide attempts in 34 percent [74].

Psychotic disorders and substance use disorders do not appear to be associated with functional neurological symptom disorder [6,75].

Neurologic and general medical disorders — A current or prior neurologic disorder may be found in many patients with functional neurological symptom disorder [1]. The presence of neurologic or other general medical disorders do not preclude a diagnosis of functional neurological symptom disorder if the functional symptoms are not fully explained by the general medical disorder [10]. The differential diagnosis of functional neurological symptom disorder, including neurologic and general medical disorders, is discussed separately. (See "Functional neurological symptom disorder (conversion disorder) in adults: Terminology, diagnosis, and differential diagnosis", section on 'Neurologic disorders'.)

SUMMARY

- **Subtypes and their clinical features** – Functional neurological symptom disorder (conversion disorder) can present with different symptoms, such as:

  - Nonepileptic seizures
  - Weakness and paralysis
  - Abnormal movement
  - Speech disturbances
  - Globus sensation (swallowing symptoms)
  - Sensory symptoms
  - Visual symptoms
  - Cognitive symptoms

  (See 'General principles' above and 'Subtypes of functional neurological symptom disorder' above.)

- **Assessment** – Assessment of patients presenting with possible functional neurological symptom disorder includes a medical history, physical examination, and indicated laboratory tests, as well as the psychiatric history and mental status examination. It is essential to look for neurologic and other general medical conditions, particularly early-stage disease. (See 'General principles' above.)

  - **History** – Clinicians taking the initial history of patients with a possible diagnosis of functional neurological symptom disorder should ask about all current somatic symptoms; the circumstances at onset of functional symptoms; dissociation; disability; ideas, concerns and expectations; psychosocial functioning; family history; course of illness; previous functional disorders and functional symptoms; prior clinical experiences; recent psychological stressors; and symptoms of comorbid psychiatric disorders. Questions about physical and sexual abuse are often best deferred until trust has been established. (See 'History' above.)

  - **Examination** – For patients who present with symptoms that may indicate a functional neurological symptom disorder, clinicians should look for evidence of inconsistency at different points in the examination as well as incongruity between symptoms and recognized disease. (See 'Examination' above.)

- **Laboratory and radiologic tests** – Laboratory and radiologic tests are generally required to seek neurologic/general medical disorders that either explain the presenting symptoms or are comorbid. (See 'Laboratory and radiologic studies' above.)

- **Comorbid psychiatric disorders** – In patients with functional neurological symptom disorder, the prevalence of comorbid psychiatric disorders, especially depressive, anxiety, dissociative, and personality disorders, exceeds that found in defined neurologic diseases. (See 'Psychiatric disorders' above.)

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