Obsessive-Compulsive and Related Disorders

24

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24.1 Vignettes

1. A 66-year-old man was admitted to the hospital when he was found by a neighbor unconscious in the hallway of his apartment. When the paramedics came into the apartment, they found that the whole apartment was literally filled with old newspapers that were stacked to the ceiling in each room. Even the refrigerator was filled with newspapers, and there was no food in it.
2. A 30-year-old woman was referred to the psychiatrist by a cosmetic surgeon as she wanted cosmetic surgery on her nose for the fourth time. Each time, she was convinced that there was something wrong in the way her nose appeared, first it was too big, then it deviated to the right, then to the left, in spite of all objective evidence that there was no deviation. Body dysmorphic disorder was diagnosed.
3. The mother of an 18-year-old man sought consultation for her son, who has been stuck in his room for several days, repeatedly making and remaking his bed. He had not been able to get out of the room because as soon as he came out, he had to go back into the room to remake his bed.

24.2 Introduction

Obsessive-Compulsive and related disorders have in common persistent or recurrent uncontrollable ideas and/or behaviors that are

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dysfunctional. In most cases, there seem to be a neural substrate, particularly in the basal ganglia and the frontal lobe, as well as memetic (cultural/ideational) component. Memes are neural connections representing ideas, which undergo Darwinian selection in the brain (Leigh 2010, 2012).

An evolutionarily important event was the development of romantic love, which serves as an example of preoccupation, obsession, and compulsion, usually but not always within normal range (Leigh 2010). Helen Fisher studied romantic love extensively. She states, "The sex drive evolved to motivate individuals to seek a range of mating partners; attraction evolved to motivate individuals to prefer and pursue specific partners; and attachment evolved to motivate individuals to remain together long enough to complete species-specific parenting duties. These three behavioral repertoires appear to be based on brain systems that are largely distinct yet interrelated, and they interact in specific ways to orchestrate reproduction, using both hormones and monoamines. Romantic attraction in humans and its antecedent in other mammalian species play a primary role: this neural mechanism motivates individuals to focus their courtship energy on specific others, thereby conserving valuable time and metabolic energy, and facilitating mate choice" (Fisher et al. 2006).

The neural circuit underlying romantic love involves the right ventral tegmental area of the brain stem and right posterodorsal body of the caudate nucleus. The dopaminergic reward and motivation pathways contribute to aspects of romantic love.

The complex neurotransmitter network of the cortico-striatal-thalamo-cortical (CSTC) circuit involving dopamine, serotonin, glutamate, and gamma-amino butyric acid (GABA) may be dysfunctional in obsessive-compulsive syndrome (Harvey et al. 2001). The dysfunction in this loop may arise from an attenuation of feedback signal indicating reward which results in compulsive lever pressing in rats, which is further enhanced by lesions of the orbitofrontal cortex (Joel et al. 2005).

Compulsions may also develop from an operant conditioning paradigm as in compulsive gambling, which in turn may result in functional changes in the brain such as impairment of decision-making capacity (Fellows 2007; Hariri et al. 2006; Kalenscher et al. 2006).

Tourette's syndrome is an example of brain dysfunction that involves dysregulation of both ideational and motoric function illuminating the role of the basal ganglia in both. In this syndrome, there are simple and complex motor tics, vocal tics, and frequently obsessive-compulsive symptoms. Its onset occurs before the age of 21 and the course is waxing and waning. Tourette's syndrome occurs mainly in boys and is genetically transmitted with variable penetrance but it has also been associated with various infections and immunological conditions such as the PANDAS (pediatric autoimmune neuropsychiatric disorder associated with streptococcal infection). The neuropathology seems to involve a disturbance of the dopaminergic system in the basal ganglia.

Gene–environment interaction involving the serotonin transporter promoter gene (5-HTTLPR) has also been reported in OCD, i.e., those with the *s/s* allele and childhood trauma were more likely to develop OCD with dissociative experiences (Lochner et al. 2007). Clearly, same gene–environment interaction may lead to multiple vulnerabilities in the CNS, including OCD, dissociation, anxiety, and depression.

Normal thinking process may become abnormal if stuck in a loop, as in preoccupations, obsessions, and compulsions. Preoccupations, obsessions, and compulsions may occur unwantedly and unexpectedly, depending on the state of the brain and the memetic nature of the thought. In the obsessive-compulsive disorder (OCD), there may be a primary dysfunction of the cortico-striatal-thalamo-cortical network involving dopamine and serotonin discussed above. Symptoms of OCD may also occur when an idea becomes particularly reinforced in the brain because it is fed by energies from related preexisting ideas (memes) in the brain. For example, a suicide idea may be introduced by a film to a depressed brain that has many preexisting self-punishment and guilt ideas, thus the suicide idea may gain strength, proliferate, and recruit the

motor neurons to carry out suicide. Other memes, like earworms which are unwanted melodies or sounds that keep on occurring in the mind, may replicate because of the strength of their vehicles (the rhythm, melody, form of presentation, color, smell, texture, etc.). Some such memes may represent "supernormal stimulus," the kinds of stimuli that are evolutionarily determined to elicit strong preferences, or results of early imprinting (Burkhardt 2005).

The diagnosis of obsessive-compulsive and related disorders is made on the basis of the severity of the phenomena and the degree of distress. Earworms are nuisances but not necessarily distressing, ego-alien obsessions can be very distressing, and compulsions may be disabling.

In this chapter, we will discuss first OCD and the related disorders—hoarding disorder, trichotillomania, skin-picking disorder, substance/medication-induced OCD, and then body dysmorphic disorder separately as it is of particular importance in certain areas of consultation-liaison psychiatry.

24.3 Obsessive-Compulsive Disorder (OCD)

The characteristic feature of this disorder is recurrent obsessive thoughts or compulsive acts. Obsessive thoughts are ideas, images, or impulses that enter the individual's mind again and again in a stereotyped form. They are almost invariably distressing (ego-dystonic) as they are violent or obscene or senseless, and the patient often tries to resist them—to no avail. These recurrent thoughts are recognized as the patient's own thoughts. Compulsive acts or rituals are stereotyped, repeated behaviors. They are neither inherently enjoyable nor result in the completion of inherently useful tasks. The patient often views them as preventing some objectively unlikely event. Patients usually recognize the compulsive acts to be pointless, and repeated attempts are made to resist them. If the individual is unable to perform the compulsive act, or resists it, unbearable anxiety may build up.

Onset is usually in childhood or early adulthood. OCD tends to be familial, and about 1–3 % of the population is affected (Arco 2008; Grados et al. 2003). It occurs equally in men and women and often develops in individuals who have obsessive-compulsive (anankastic) personality traits.

The perseverative responding seen in OCD may be attributable to a disinhibition of the prefrontal lobe, but there is also basal ganglia, particularly striatal, contribution.

Anxiety may be a prime trigger of OCD (Rachman and Hodgson 1980). Avoidance behavior in animals is well known to be very persistent as it so rarely has the opportunity for extinction—and drugs such as D-amphetamine exacerbate this perseverative tendency. Stereotyped behavior may arise as a coping response to reduce stress. Habit-learning in the rat seems to be mediated by specific sectors of the rat striatum and habit-learning in the striatum can be influenced by prefrontal cortical mechanisms.

In OCD, there may be a counterbalancing between impulsive and compulsive responding and an over-active "checking" mechanism that compares intended actions with their outcomes; if the hypothetical comparator is constantly detecting mismatches, this will continuously engage the "checking" mechanism possibly dependent on anterior cingulate influences (Boulougouris et al. 2009). Orbitofrontal cortex (OFC), medial prefrontal cortex (mPFC), basal ganglia, and thalamus are central to OCD pathophysiology and treatment response (Greenberg et al. 2010).

Patients with OCD often have depressive symptoms, and patients suffering from depression often develop obsessive thoughts during depressive episodes. In severe cases OCD may be crippling, as the patient may be unable to leave home without performing endlessly repetitive compulsive acts such as rearranging furniture and checking the locks. It is important to note that in the CL setting, the stress of the medical condition or the delirium or dementia associated with the medical condition or treatment may exaggerate a patient's obsessive-compulsive personality traits. For example, the

development of OCD following brain injury is well documented (Coetzer 2004; Hofer et al. 2012). Such OCD symptoms may resolve once the underlying delirium or stress is resolved.

The stress of illness and hospitalization and the cognitive deficits associated with head injury, medications, and mild delirium can accentuate personality traits such as obsessiveness. Uncertainties regarding diagnosis or proposed treatment may render a person to appear obsessive-compulsive. As it is rare for patients to develop OCD de novo in a hospital, every effort should be made to reduce the situational anxiety or the cognitive deficit accompanying the behavior.

24.4 Hoarding Disorder

A new diagnostic entity in DSM-5, hoarding disorder is characterized by persistent difficulty in parting with or discarding possessions regardless of their actual value, because of a need to save the items and distress in discarding them. This results in an accumulation of items that clutter the living space and compromises their intended use, and causes clinically significant distress or impairment in social, occupational, and other areas including maintaining a safe environment for self and others.

The prevalence of this disorder seems about 2–6 %, and it occurs in both males and females. The prevalence seems higher in older age, though it may appear in teenage, and there is often comorbidity with physical and mental illness (APA 2013; Ivanov et al. 2013).

According to DSM-5, hoarding behavior is familial; 50 % have relatives likewise affected, and twin studies reveal that 50 % of variability of hoarding behavior is attributable to additive genetic factors.

24.5 Trichotillomania (Hair-Pulling Disorder)

This is characterized by recurrent hair pulling resulting in hair loss. There are repeated attempts to stop or decrease hair-pulling to no avail, and the hair-pulling causes significant distress or impairment in social, occupational, or other important areas.

The prevalence seems to be 1–2 % in the general population according to DSM-5. Female to male ratio is 10:1. There is often comorbidity with other mental disorders, often OCD and depression.

24.6 Excoriation (Skin-Picking) Disorder

Synonyms include dermatillomania, neurotic excoriation, acne excoriee, pathologic skin picking, compulsory skin picking, and psychogenic excoriation. In this disorder, there is recurrent picking of one's own skin resulting in skin lesions in spite of repeated attempts to decrease or stop the picking. This causes clinically significant impairment in social, occupational, and other areas of functioning. According to DSM-5, the prevalence is 1.4 % or somewhat higher and 75 % are female. The condition often begins in adolescence and often begins with a dermatologic condition such as acne. Comorbidity with OCD and trichotillomania is common, as well as with depression.

24.7 Substance/Medication-Induced Obsessive-Compulsive and Related Disorder

All OCD-related disorders may be secondary to substances (both intoxication and withdrawal), particularly cocaine, amphetamines, and opiates.

24.8 Treatment of OCD and Related Disorders (BDD is Discussed Separately Below)

24.8.1 Pharmacotherapy

In patients with diagnosed OCD, the treatment of choice is an SSRI, increased gradually to a very high dose (e.g., fluoxetine 80 mg per day)

(Soomro et al. 2008). Antipsychotics may also be effectively used for augmentation of SSRI (Dold et al. 2013). Olanzapine has been used effectively in excoriation disorder (Gupta and Gupta 2000, 2001). The tricyclic, clomipramine, may also be effective in OCD (Marazziti et al. 2012).

For trichotillomania, *N*-acetylcysteine 1,200–2,400 mg per day may be effective (Bloch 2009; Bloch et al. 2013; Grant et al. 2009; Rodrigues-Barata et al. 2012; Rothbart et al. 2013).

24.8.2 Stereotactic Neurosurgery

Bilateral stereotactic cingulotomy and bilateral capsulotomy have been effective in severe treatment-resistant OCD (Sheth et al. 2013; van Vliet et al. 2013; Zhang et al. 2013).

24.8.3 Psychotherapy

Cognitive-behavioral therapy has been shown to be effective (Olatunji et al. 2013). In CBT for OCD, patients are taught that their intrusive thoughts are not indicative of anything important, but that a problem arises if such thoughts are perceived as unacceptable or threatening.

Exposure and response-prevention (ERP) is another psychotherapeutic modality which has been shown to be effective (Abramowitz et al. 2013). Through this technique, patients confront their fears and discontinue their escape response, facilitating extinction of the classically (Pavlovian) conditioned fear response. ERP can be carried out effectively with minimal face-to-face contact between the therapist and the subject as through the internet (Wootton et al. 2011).

Simultaneous administration of D-cycloserine may substantially improve effectiveness of exposure and response prevention (Wilhelm et al. 2008).

For trichotillomania, in addition to CBT, acceptance and commitment therapy (ACT) may be effective as well as dialectical behavioral therapy (DBT) (Trichotillomania-Learning-Center 1991). Physical barriers such as gloves may also be useful.

For excoriation disorder, in addition to CBT and ERP, hypnosis as well as physical barriers may be effective (Paley et al. 2010; Shenefelt 2000, 2004).

24.9 Body Dysmorphic Disorder (BDD)

This syndrome is characterized by a distressing or impairing preoccupation with slight or imagined defect(s) in one's physical appearance. BDD has been reported in various parts of the world. Also called "dysmorphophobia," it was described by Emil Kraepelin and Pierre Janet among others, and numerous case studies have been reported from around the world. The skin seems to be the most common area of concern (73 %), followed by hair (56 %), and nose (37 %) (Phillips and Diaz 1997; Phillips et al. 2006).

BDD appears to be relatively common. The point prevalence has been reported to be 0.7–2.4 % in the general population, which makes BDD more common than disorders such as anorexia nervosa or schizophrenia. In adult student samples, prevalence rates of 2–13 % have been reported (Bjornsson et al. 2010).

In clinical settings, the prevalence BDD has been reported to be as high as 9–12 % in dermatology settings, 3–53 % in cosmetic surgery settings, 8–37 % in individuals with OCD, 11–13 % in social phobia, 26 % in trichotillomania, and 14–42 % in atypical major depressive disorder (MDD).

Among psychiatric inpatients, 13–16 % of patients have been reported to have BDD. A study of adolescent inpatients found that 4.8 % of patients had BDD (Dyl et al. 2006).

Contrary to common expectation, males seem to be equally affected with BDD as females, or only slightly less (Phillips and Diaz 1997; Phillips et al. 2006).

About two-thirds of BDD patients have past or current ideas or *delusions of reference*, i.e., the belief that other people take special notice of them negatively or are mocking or ridiculing them because of how they look (Phillips et al. 1994).

Nearly everyone with BDD is reported to engage in specific behaviors, such as mirror

checking and skin picking. The relationship between thoughts and behaviors in BDD resemble the relationship between obsessions and compulsions in OCD, i.e., the compulsive behaviors arise in response to the obsessive thoughts about appearance, and are designed to reduce anxiety and other painful emotions associated with them, and as in OCD, these behaviors are not pleasurable. These compulsive behaviors are repetitive, time-consuming (about half of BDD patients spend 3 or more hours per day engaged in them), and hard to control and resist. Some behaviors, such as camouflaging disliked body parts (e.g., with a hat, makeup, sunglasses), are called *safety behaviors*, because their function is to reduce or avoid painful emotions or prevent something bad from happening, such as being humiliated or embarrassed. Most BDD patients perform multiple compulsive behaviors. They often compare themselves to other people, and about 90 % of BDD patients repeatedly look at themselves in the mirror, with the hopes of feeling they look acceptable, but usually feeling worse afterwards (Bjornsson et al. 2010).

BDD usually begins during adolescence, with two studies reporting a mean age at onset of 16 and a mode of 13 (Gunstad and Phillips 2003; Phillips et al. 2005). BDD appears to have a chronic course.

Rates of suicidal ideation, suicide attempts, and completed suicide appear markedly elevated. Approximately 80 % of individuals with BDD report past or current suicidal ideation, and about one-quarter have attempted suicide (Phillips 2007; Phillips and Menard 2006).

About one-third of people with BDD report violent behavior related to BDD symptoms. This may be related to anger about being deformed and /or inability to fix the deformity as well as delusions of reference (i.e., other people mocking them) (Phillips 2009).

According to one survey, 12 % of plastic surgeons reported that they had been threatened physically by a dissatisfied BDD patient (Sarwer 2002). BDD is often associated with alcohol or drug abuse.

Comorbidity is quite common with BDD, the most common being major depression (75 % lifetime prevlance), followed by substance-use disorders (30–48.9 %), social phobia (37–39 %), and OCD (32–33 %) (Bjornsson et al. 2010).

BDD patients may overfocus on details of visual stimuli rather than global aspects, i.e., they overfocus on minor details of their appearance, which may in turn fuel preoccupation with minor appearance flaws. An fMRI study of facial processing found a bias among BDD subjects for using strategies to encode details of stimuli rather than use of holistic visual processing (Feusner et al. 2007).

24.10 Treatment of Body Dysmorphic Disorder

24.10.1 Cosmetic Treatment in BDD Patients

A majority of individuals with BDD seek (71–76 %) and receive (64–66 %) cosmetic treatment (e.g., surgical, dermatologic, or dental) for their perceived appearance flaws (Crerand et al. 2005; Phillips et al. 2001). However, only rarely does such treatment seem to improve overall BDD symptoms. In one study, subjects retrospectively reported that only 3.6 % of all treatments resulted in overall improvement in BDD (Crerand et al. 2010). Surgical treatments were more likely than other cosmetic procedures to decrease preoccupation with the treated body part; however, overall BDD severity improved with only 2.3 % of treatments (Crerand et al. 2010). In a survey of cosmetic surgeons, 40 % of respondents indicated that dissatisfied BDD patients had threatened them physically or legally (Sarwer 2002).

24.10.2 PsychiatricTreatment of BDD

Selective serotonin reuptake inhibitors (SSRIs) and cognitive-behavioral therapy (CBT) are currently recommended as first-line treatments and they appear to be effective for a majority of patients. Twelve to 14 weeks of SSRI treatment is often needed before a response is seen, and

relatively high SSRI doses (higher than typically used for depression) often appear to be needed. If an SSRI is not adequately effective, augmentation with another medication, e.g., aripiprazole, or switching to another SSRI, may be effective (Phillips 2005; Phillips and Hollander 2008).

Cognitive behavioral therapy (CBT), including exposure and response prevention (ERP) to reduce avoidance and compulsive and safety behaviors, seems effective in BDD (Bjornsson et al. 2010; Phillips et al. 2008). CBT helps patients focus less on minor details of their appearance and take a more holistic view of their body.

Interpersonal therapy (IPT) may be effective by enabling patients to develop more effective strategies to reduce interpersonal distress, poor self-esteem, and depressed mood, which are hypothesized to maintain body image concerns (Klerman 1994).

Many patients with BDD lack insight into their illness and therefore are insufficiently motivated for treatment. Motivational interviewing may be useful for some of these patients (Miller and Rollnick 2013; Phillips et al. 2008).

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