INTRODUCTION

Jealousy is a complex emotional state defined as the “perception of a threat of loss of a valued relationship to a real or imagined rival which includes affective, cognitive and behavioural components” (Mullen 1991). It is a mixture of various emotions which include anxiety, worry, sadness, anger, hate, regret, blame, bitterness, envy, etc. (Maggini et al. 2006). Cobb (1979) considered jealousy along a spectrum, from normal to pathological jealousy. He subdivided pathological jealousy into neurotic (non-psychotic) and psychotic types.

Some degree of jealousy is considered normal in mature love. It is a comprehensible and proportionate reaction to a situation of real or possible unfaithfulness of the loved one. The person maintains the ability to dominate a situation without being overcome by it, and prepares to modify his/her beliefs and reactions as new information becomes available (Ey 1950). One accepts and respects the possibility that the loved one could choose somebody else, although the idea is painful, and could overcome separation and loss after a period of adaptation. Morbid jealousy differs from normal jealousy by its intensity and irrationality. It can occur even when a partner is actually being unfaithful, which means that unfaithfulness is not a sufficient reason for developing morbid jealousy, but an excessive or irrational response to it. Morbidly jealous individuals interpret irrelevant cues as conclusive evidence of unfaithfulness; refuse to change their beliefs even when faced with conflicting information, and tend to accuse the partner of infidelity with many other persons (Vauhkonen 1968).

Jealousy starts with intense autonomic arousal termed “jealous flash” (Clanton & Smith 1977), provoked by a real or imaginary change in the behaviour of the partner (a hypothesis, a suspicion, an interpretation) (Maggini 2006). This is followed by painful emotional paroxysms, accompanied by erroneous interpretations and search for proofs. The jealous person expresses characteristic behaviour, such as accusation and interrogation of the partner, repeated telephone calls, checking of telephone records and postal correspondence, surprise visits, stalking behaviour, preventing the partner from seeing friends or going out alone, forbidding the partner from wearing particular clothes which are considered as a means of seduction, searching the partner’s clothes and examining bed linen, or even underclothes and genitalia for evidence of sexual activity, or finding the confirmation of unfaithfulness in innocent guests and events (e.g. just looking at another person) (Kingham & Gordon 2004). As a result, the subject of jealousy can become isolated from friends and the outside world. In some cases, physical violence may be used in order to extract a confession. The partners of an aggressively jealous person may become house-bound, in order to keep the peace at home and to avoid maltreatment and violence that may occur if they are out of sight. They may develop a range of symptoms, including feelings of helplessness, isolation, extreme passivity, anxiety and depression, which can lead to abuse of anxiolytics and alcohol.

Two factors maintain jealousy: the idea of infidelity (triggered by the behaviour of the partner) and an individual emotional predisposition linked to particular personality traits (paranoid, dependent, borderline perso-
nal,ity, etc.), or a concomitant psychiatric disorder (Manggini 2006). After summarizing a review of literature, Gehl (2010) concluded that jealousy is related to several trait dimensions of personality (e.g., dependency, aggression, mistrust, manipulativeness, self-harm, enticement, exhibitionism and impulsivity) that are reflective of borderline, dependent, histrionic, narcissistic, avoidant and passive-aggressive tendencies. In his own study (Gehl 2010), he concluded that persistence of personality traits such as dependency, aggression, mistrust and manipulativeness, determine how an individual will experience and express jealousy.

Marazziti et al. (2010) explored the correlation between attachment styles and dimensions of jealousy in healthy subjects. They concluded that persons with insecure attachment styles (especially preoccupied and fearful-avoidant, but also dismissing style) have an increased fear of losing a partner, which could be the key phenomenon in the genesis of jealousy and in triggering obsessive thinking and monitoring behavior. By using the Questionnaire Della Gelosia (QUEGE) they identified five pathological dimensions of jealousy in the general population: depressive, paranoid, obsessive, separation-anxiety related jealousy and interpersonal sensitivity type. Persons with secure attachment style are characterized by the ability to tolerate negative emotions and feel comfortable with intimacy. They love freely, respecting the wishes and needs of the partner, including the possibility that the loved one could love someone else. Insecure, immature persons compensate their needs through unity with the other person, and consider the partner as a subject of possession. Eglacy et al. (2009) concluded that persons with pathological love (characterized by repetitive and uncontrolled care and attention to the partner in a romantic relationship, with feelings of freedom loss) have higher levels of impulsivity, novelty-seeking, harm avoidance and reward dependence, lower self-directiveness, high self-transcendence and higher frequency of anxious-ambivalent attachment style. Such persons frequently maintain unsatisfactory relationships, despite their awareness of the same.

Within the current nosological systems (DSM-IV, ICD-10), pathological jealousy does not have status as a separate nosological entity. It is represented either as an obsessive-compulsive phenomenon as part of obsessive-compulsive psychopathology, or as the only delusion in Delusional Disorder-Jealous Type (APA, 2000). It could also be one component from a number of other disorders on Axis-I and Axis-II, such as chronic alcoholism, drug addiction (e.g. morphine, cocaine, amphetamines), schizophrenia, neurotic disorders, affective disturbances or personality disorders (dependent, paranoid, borderline, etc), organic brain disorders (e.g. Alzheimer’s disease, endocrine disturbances, cerebral tumours, Parkinson’s disease, Huntington’s chorea and tertiary syphilis) (Mullins 2010, Graff-Radford et al. 2012), or side effects of pharmacological treatment (e.g. with dopamine agonists) (Gergiev et al. 2010). Harmon-Jones et al. (2009) found that jealousy is associated with relatively greater left frontal activity.

### OBSESSIVE JEALOUSY

Obsessive jealousy is a disorder which differs from both normal and delusional jealousy. The sufferer is afraid of losing the partner to a potential rival, and fears that the partner will be unfaithful and leave him/her. Obsessive suspicions take the form of jealous ruminations, and unwelcome, unpleasant, repetitive, intrusive, irrational thoughts recognised by the patient as ego-dystonic (Hoaken 1976), followed by the compulsive rituals of checking or seeking reassurance from the partner (Cobb & Marks 1979, Tarrier 1990).

Unlike delusional jealousy, the obsessively jealous person knows that he/she does not have any evidence of unfaithfulness, but cannot stop the intrusive thoughts and checking behaviour, such as searching for clues of betrayal. Symptoms are ego-dystonic: the individual is distressed and recognises the jealousy as unacceptable, alien, and shameful. According to Lane (1990), ego-dystonicity varies in patients and they, like obsessive-compulsive patients, would view their preoccupation as realistic if their compulsions were prevented.

The preoccupation, confirmatory behaviour, avoidance, distress and rumination described in non-psychotic cases take the form of obsessions, and respond to cognitive-behavioural and pharmacological strategies (e.g., SSRIs) commonly used in obsessive-compulsive disorder. Marazziti et al. (1993, 2003) found a lower density of the platelet serotonin transporter in healthy subjects with excessive jealousy concerns as compared to healthy controls, as well as in patients suffering from obsessive-compulsive-disorder and subjects who were in the early phase of romantic love, indicating alteration of the serotonergic system, which would suggest that SSRIs may be helpful in these cases.

Like delusional jealousy, obsessive jealousy could also be generated by structural brain pathology. Wing (1994) described a 37-year-old man with a head injury and 5 years of obsessive jealousy, who recovered with 20 mg/d fluoxetine; Westrake (1999) gave an example of a 20-year-old female with right parietal-basal ganglia cerebro-vascular infarction, who improved with 40 mg of paroxetine; and Chacko (2001) described a 76-year-old female with obsessive jealousy and bilateral basal ganglia infarction, who improved with 40 mg of fluoxetine.

### DELUSIONAL JEALOUSY

Delusional jealousy could be manifested as either the only delusion in Delusional Disorder-Jealous Type (APA 2000), or as a part of other psychiatric disorders on Axis-I and Axis-II. According to APA (2000), delusional disorder-jealous type has a prevalence of less than 1% in the general population. Soyka et al. (1991) estimated the prevalence of delusional jealousy among...
psychiatric inpatients to be 1.1%, with the greatest frequency in organic disorders (7%), paranoid (6.7%), alcohol-related (5.6%), schizophrenic psychoses (2.5%), and affective disorder (0.1%), with predominantly women suffering from delusional jealousy in schizophrenia and men in alcohol-related psychosis. Malloy and Richardson (1994) underlined the role of lesions of the frontal lobes and the right hemisphere in various content-specific delusions.

Delusional jealousy arises by an intuitive mechanism (consciously given knowledge based on unconscious speculation), fortified by pathological interpretations and fabulations, and altered memories, forming a strong ideo-affective, quasi-logical system of jealousy. In delusional jealousy, subjects accuse their partner of infidelity and continuously endeavour to confirm their suspicions, e.g. frequently interrogating their partner to extort a confession. These interrogations can incorporate various forms of torture. Excessive sexual demands are often made to exhaust the partner from engaging in infidelity. In delusional jealousy subjects may examine bed linen and underwear for seminal stains, and even the genitals of their partner for additional evidence. When the allegations are clearly false (involvement of multiple partners, family members or clearly unsuitable partners), it is not hard to make a diagnosis. When the system seems logical, a correct diagnosis can be made according to the intensity of the affective-emotional charge and to the energy invested in the creation of false evidence, as well as the complaints of emotional suffering and possible physical threats reported by the persecuted partner. Suspicions, interpretations, and searching for proof can result in significant distress in a relationship and carry a significant risk of abuse (physical, sexual and emotional), as well as suicide and homicide (Muzinic et al. 2003).

After reviewing the neurochemical and neuroanatomical bases of jealousy, Marazziti et al. (2012) concluded that the available data suggest the role of altered dopaminergic frontostriatal circuits, ventromedial prefrontal cortex (vmPFC), insula and related functions of reward processing, mentalizing, and self-related processing in feelings of jealousy and in its delusional form.

**CASE REPORTS**

**Case 1. Obsessive jealousy**

Female patient, 33 years old, secondary school education, unemployed, separated from husband, mother of minor children. First psychiatric hospitalisation, diagnosed in primary care as Pathological jealousy-delusional type, under observation.

As a reason for seeking psychiatric help, she specified a constant obsession with a heterosexual partner, an overwhelming desire when separated from him, a persistent and pervasive fear that he would be unfaithful or leave her for a more attractive woman, constant checking of his activities, as well as the acceptance of a number of “humiliations” to retain him. Although the patient expressed emotional suffering and had an insight into the excessiveness of her behaviour, soon after being admitted to daily hospital for treatment, she turned out that her goal was not the cure, but the prolongation of absence from her job in order to be able to undertake permanent surveillance on her partner.

**The course of the disorder**

Five years before admission, the patient was instantly attracted to the current intimate partner, regardless of the obstacles: she lived with her husband and children, and the partner was also married, having two minor children. She made repeated phone calls to him just to hear his voice, stayed around his home and became good friends with his wife who informed her of his habits and vices, which, despite the negative information (being unemployed, gambling, borrowing money) did not discourage her from the desire of a love affair. After one year of many partnership conflicts, she divorced her husband. The relationship with the current partner was intensified when he left his family and started to live separately. However, after the intimacy intensified, the patient entered into a phase of anxiety, when she started to be tortured by the fear that the partner, attracted by another woman, would be unfaithful to her. In situations when she was overwhelmed by the fear of abandonment, she began to behave obsessively and in a controlling manner: questioning him where he had been and what he had been doing while she was at work, phoning him frequently, occasionally leaving the working place to verify where and with whom he was, or calling the neighbours to check whether he had left home. She secretly followed him, searched his pockets, and checked his cell phone. Due to the need to continually monitor him, she began to become absent from her job. Her controlling behaviour began to escalate and she entered into the developed obsessive phase, in which she could not stop intrusive thoughts about her partner and his possible infidelity. It was difficult for her to leave him just for a moment, she was restless when they were separated, she unfoundedly accused him of being unfaithful, constantly seeking confirmation of his attention and affection, insisting on his commitment to the relationship, and being angry with him when she suspected that his non-verbal communication in public places did not indicate to others how close they were. Thus, she entered into the destructive phase of their relationship: she was in constant conflict with the partner who was in a rage due to her behaviour, insulted her, told her she was ugly, stupid and boring, and distanced himself from her, not telling her where he was going; behaving in public places as if he did not know her, running away from her, sleeping in the car where she joined him and where they fell asleep together. He threatened her that he would leave to go abroad, but she had no doubts that she would immediately leave her working place and children to accompany him. In such situations, when she thought that he might leave, she was overwhelmed by a feeling
of panic, inner emptiness, and loss of self-esteem, and would blame herself, giving him all her money and promising that she would no longer annoy him with jealous scenes. During the last month, she was helping him to hide from people who were looking for him because of gambling debts, buying him food, and lending him her car. Occasionally, she felt anger, rage and a desire “to strangle him.” After attending several sessions and prolonging her sick leave, she discontinued both psychotherapy (cognitive-behavioural) and pharmacotherapy (sertraline) as, according to her, it was just wasting time that she could otherwise be spent with her lover.

Epicrisis

The patient was observed during the phase of rapid escalation of dependent interpersonal bonding, when controlling and obsessive behaviour in an intimate relationship completely overwhelmed her personal life, and she lost control as a result of extreme anxiety of unfaithfulness and possible abandonment. She was dysfunctional both in the family and professional domain: after several months of sick leave, she was considering leaving her job and she was not seeing her young children whose custody she relinquished to her mother (who notified the Social Services Centre).

Family history

The patient was raised in a family dominated by an aggressive and highly critical mother. Her father was submissive, benevolent towards his daughter, but powerless within the family dynamics.

Somatic explorations

Brain CT scan, laboratory test results, and hormonal status were normal.

Case 2. Delusional jealousy

Female patient, 71 years old, university degree, married, two adult children, with no previous psychiatric history. She sought psychiatric treatment at the urging of her children, who had noticed problems in their parents’ otherwise harmonious marriage.

The course of the disorder

According to data obtained from the patient, her problems had persisted for the last two years, after, in her own words 45 years of “ideal marriage”, full of trust and commitment. Suddenly, she “felt” a change in the behaviour of her husband, who “began to behave strangely”; she noted his “blurred vision,” she felt that he is in “a crisis”, “nervous”, “obsessed with young persons,” and “in love.” “There is nothing worse than an old stump aflame!” She was astonished to notice that her husband changed his behaviour: he bought an expensive pair of spectacles, had a new tooth implanted, getting excited by the “touch of young skin,” and hiding secret phone numbers under his friends’ names. Moreover, he was taking Viagra; he ripped the pocket of his new jacket to hide his potency pills; he was communicating with women via Facebook, living a “parallel life”; taking money from her wallet, and hiding to make secret phone calls. She came to the idea that there might be someone blackmailing him, who she suspected was his cardiologist. Her pyjamas and brooch were missing, which meant that he was bringing someone into the house. He had sent some flowers to somebody by Internet, and he flirted with shop assistants. She thought that he was a member of the exclusive club “Fortuna” that organised escorted evenings. In her own words, “when I leaned on him, I felt as if I touched wood.” She noticed that “something is going on”, and that he had been upset and restless. By some small signs, she concluded that he had been communicating with someone.

The trust they had had for years was ruined by his betrayal, and she felt hurt and angry. She wondered whether he was ill, perhaps with a brain tumour. She began to monitor his phone calls, not letting him go out alone, controlling his communication, checking his messages and calculating how much money he had been spending. She was compelling him to confess his infidelity, unsuccessfully arguing with him.

No significant premorbid personal pathology. Within personal anamnesis, early loss of father at the age of five, in a violent manner. Rivalry with older, prettier sister.

Somatic status and explorations

Hypertension. Hyperthyroidism (compensated by pharmacotherapy). Mini Mental State Examination (MMSE): 28/30. Brain CT scan: cortical reductive changes in the frontal region, and lacunar ischemic lesions of the left frontal and right cerebellar regions. Laboratory test results were normal.

Treatment

Small doses of risperidone (1 mg per day) and cognitive-behavioural psychotherapy for delusional ideas. After several weeks of regular taking of medication and psychotherapy sessions, there was a reduction of symptoms, which was confirmed by the words “I feel that my husband came back to me.”

DISCUSSION

Jealousy is a complex emotion that manifests itself in a range from transient, “normal” conditions, through overvaluated ideas to obsessive and delusional jealousy, which are serious psychiatric disorders which carry the risk of abuse (emotional, physical, sexual), homicide and suicide. Identifying and distinguishing obsessive jealousy from delusional jealousy would reduce misdiagnosis and wrong choice of treatment drugs.
(harmful and unnecessary use of neuroleptics and labelling the patient as psychotic in the case of unidentified obsessive jealousy), as well as shortening the time of untreated illness duration.

In Case 1 of obsessive jealousy, the patient was diagnosed on Axis-II as a Dependent personality disorder. She grew up criticised by her mother, with a feeling of not being good enough. Her “hunger for love” came from the frustrated feeling of belonging and love from her childhood. Her current partner, through his emotional instability, evokes childhood trauma and the desire to nurture hunger for love through an unreal world of romantic obsessions, which also evokes separation anxiety. She had no conviction that the partner was cheating on her, but only the fear that infidelity might happen and that she would be abandoned, which she considered as unbearable. She realised that obsession with her partner was exaggerated, but could not resist it (ego-dystonic). She lived in constant fear that he would betray her, a fear that was temporarily reduced by compulsive behaviour of checking the partner’s behaviour, and her constant demands for closeness. She manifested feelings of low self-esteem, helplessness, guilt and self-blame. It is in agreement with the findings of Gehl (2010), that the individuals who exhibited higher levels of dependency and lower levels of self-worth were more likely to experience fear and guilt as part of their jealousy, and were more likely to be concerned with maintaining their relationship and engaging in behaviors directed to keep the relationship (e.g. increasing affection or giving gifts to their partner). She expressed all the signs of pathological love (Eglacy et al. 2007): symptoms of withdrawal when the partner was absent or when he threatened abandonment, intensive and sacrificing caring behaviour, loss of control in the relationship and abandonment of all previously valued activities (care about children, work activities, relationship with family), and maintenance of the relationship despite her suffering and awareness of its destructivity. Regardless of her actual insights into the dysfunction, questions regarding the outcome of her obsessive jealousy remain: Can her obsession experience a dialectical jump into delusion, according to the concept of mental illness spectrum (Lobo & Agius 2012)? Is there a risk of suicide if she decompensates depressively on possible abandonment by her partner? Is there a risk of homicide in an extreme case? Or, will she, if abandoned, fill the emptiness and hunger for love by entering into another symbiotic relationship after a period of transient decompensation?

If she were motivated to treatment, we would apply SSRIs and cognitive-behavioural therapy for jealousy (psychoeducation about normal and pathological jealousy, practicing acceptance of emotions and uncertainty, teaching emotion regulation skills, examining emotional schemas, cognitive bias and personal schemas, decatastrophising potential loss, modifying assumptions about coercive control, building relationship enhancement skills, commitment to self-care, etc.) (Leahy & Tirch 2008).

In Case 2 of delusional jealousy, the patient was utterly convinced that her suspicions were accurate. Sudden, minor changes in her partner’s behaviour caused suspicions toward him that progressed towards delusional ideas. The mechanism of the emergence of her delusions was intuitive, and subsequently, through false interpretations the delusional jealousy system was formed, with a strong ideo-affective block, amnesticias under the influence of current delusions, fabulations, as well as extreme controlling behaviour toward the partner who was almost completely house-bound. Despite the positive results of CT-scanning, the patient had no decline in MMSE. She grew up competing with her older sister, compensating for her sense of inferiority through intellectual achievement and controlling behaviour. Unlike the patient with obsessive jealousy, who suffered from constant anxiety of the separator type, low self-esteem and self-blame, her emotions were dominated by anger towards the partner and wounded narcissism. Although she responded well to pharmacotherapy (low doses of risperidone) and cognitive–behavioural psychotherapy for delusions, the question of illness recurrence and acceptance of treatment remains, as she viewed the treatment only as a unilateral sacrifice for saving a marriage in crisis. Cognitive-behavioural therapy for delusional jealousy was performed according to principles of cognitive-behavioural psychotherapy for delusions: psychoeducation by presenting a stress–vulnerability model; presenting ABC model of emotional disturbances: A-activating event, B-beliefs, C-emotional and behavioral consequences, to coach the patient how her beliefs and thoughts influence her emotions and behaviour (B-C connection) (Ellis & Harper 1961). Delusional jealousy beliefs were explored, and evidences for and against delusional jealousy beliefs were discussed (disputing irrational beliefs). Alternative explanations and thoughts that are helpful, healthy and balanced were developed in an empathetic and nonjudgmental atmosphere. "Peripheral questioning“, “Inference chaining“ or Socratic questioning are the techniques used to introduce doubt and gaps into the delusional system (Smith et al. 2003).

**CONCLUSION**

Despite treatment success in Case 2, the common issue in both cases of pathological jealousy is the problem of adherence to treatment, which indicates that, regardless of presence or absence of insight into the disorder, one of the key factors in the treatment of pathological jealousy is motivation to pharmacotherapeutic and psychotherapeutic interventions. Accordingly, as an initial therapy goal, patients should be advised to reduce the suffering caused by ideas of unfaithfulness. Further, in order to achieve better treatment outcome, one should practice an individualized and personalized treatment, following the basic principles of creative psychopharmacotherapy (Jakovljevic 2010).
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References