INTRODUCTION

In contrast to hemiplegia which manifests as total paralysis of the arm, leg, and trunk on the same side of the body, hemiparesis is a muscle weakness of one side of the body. Hemiparesis is a serious symptom of neurological dysfunction, which leads to significant incapability. It can be caused by various factors, occasionally traumatic, often by lesions of the corticospinal tract which runs down from the cortical neurons of the frontal lobe to the motor neurons of the spinal cord and is responsible for movements of the muscles of body and limbs. However, pseudoparesis is traditionally one of the most frequent presentations of the Somatoform disorder (DSM-IV-TR) or Dissociative (conversion disorder) (ICD-10), or disorder formerly known as hysteria (De Waalt et al. 2004). Although it is believed that the incidence of conversion disorder is in decline during last decades new investigations do not support it and contradict these assumptions (Owens & Deinn 2006). For example one study estimated that at least evidence from the USA and the UK suggests that about 10% of patients referred to general neurology outpatient clinics have purely medically unexplained symptoms (Carson et al. 2000). Later, Carson reported that 30% of patients at a neurology clinic had "unexplained symptoms" (Carson et al. 2003). Moreover, conversion disorder is diagnosed in between 1-14% of general medical and surgical inpatients. The incidence has been estimated as 5 to 22 per 100,000 in general US and European populations (Akagi & House 2001).

Here we describe an interesting case of adult man who developed functional hemiparesis and was successfully treated with amitriptyline after initial non response to paroxetine.

CASE REPORT

Mr. MB, a 39-year-old Caucasian male, father of three children, with no previous history of neurological or psychiatric problems. In November 2008 he began to feel progressive paresthesia and cramps in his left hand and foot. Few months later he started to experience strong pain in the left foot. The pain distributed from his left hip through the left foot to the fingers but without specific segmental distribution. In July 2009, he noticed that his left arm became weak and started to drop things. Moreover, his wife noticed that he was pulling his left foot during walking. At that time Mr. MB became unstable even while standing, with a constant felling "of being pulled on a side". The patient never reported facial cramps or problems with vision. Yet, during summer 2009 he noticed that his hearing on the left ear was reduced. Consequently, he contacted his GP, and than the neurologist. Brain MRI scan has shown "cortical reductive changes" and spine MRI a dorsolateral protrusion of L4-L5 spinal disc, which made pressure on disc bag and both L5 radices. The hemangioma in L3 corpus of spine was also noted. Mr MB's mental state began to deteriorate as he developed episode of major depression: patient became depressed, tearful, with poor concentration, insomnia and decreased appetite. His HAMD score was 16. Due to major depression which included anxiety and insomnia treatment with standard antidepressant and benzodiazepine drugs were started in October 2009 (namely paroxetine 20 mg once daily and bromazepam 1.5 mg three times daily). He was admitted to the Neurological Clinic for further, detailed examination as his neurological symptoms progressed. Mr. MB does not drink alcohol, smokes between 10 and 20 cigarettes per day for many years and does not have history of allergies. However, he reported that he had been exposed to significant psychosocial stressors during the previous year. He experienced mobbing by the new owner of the company in which he worked and was constantly apprehensive that he might lose his job. The patient also revealed significant financial problems which affected his relationship with his wife. Neurological examination revealed left hemiparesis with positive Mingazzini's and Wartenberg's signs. Walk was ataxic with difficulties in tandem walk. Romberg's test was positive with closed eyes. Hipodiadochokinesias was present on the left side as well as the hemihypesthesia but without clear organic localization. During hospitalization, detail lab. exa-
mination, serological tests, electrophoresis, immuno-

phoresis, lumbar punction, thyroid status, evoked

potentials, otorhinolaryngology and electromyographic

examination of the arm and leg, CT scan of the inner

ear, echo scan of the abdomen and MRI scan of the
cervical spine were performed. All the results were

within the normal range. Consequently, all known
causes of a hemiparesis were excluded - i.e. brain
disorder, head injury, stroke, transient ischemic attack,

brain injury, infective endocarditis, congenital brain
malformations e.g. cerebral agenesis, cerebral palsy,
cerebellar abscense, meningitis or associated various

syndromes: Brushfield-Wyatt and Klippel-Feil syn-
drome, brain compression, demyelization disorder,
Moya Moya disease, Sturge-Weber syndrome etc. The
patient was discharged after one month with the
diagnosis of left functional hemiparesis, and with
suggestion to continue psychiatric treatment. After two
months of treatment insufficient response to paro-
xetin/bromazepam treatment were noted so patient was
switched to amitriptyline 25 mg three times daily and
lorazepam 1 mg three times daily. This drugs were
chosen on the basis of different mechanism of action
(dual action of amitriptyline on monoamine reuptake
transporters) and stronger activity (lorazepame). One
month later, significant improvement in the patient's
mood was noted. Moreover, hemiparesis as well as
hemiparesthesia subsided. No adverse events of drugs
were noted. Patient had never been psychologically
treated. Presently, the patient is euthymic and without
neurological complaints: He has successfully returned
to his job. He is being regularly monitored at the
Psychiatric Outpatient Clinic, and is still on the same
psychotropic medications.

**DISCUSSION**

Conversion disorder is defined by DSM-IV-TR as a
mental disorder whose central feature is the appearance
of symptoms affecting the patient's senses or voluntary
movements that suggest a neurological or general
medical disease or condition. Yet, following a thorough
evaluation no neurologic explanation exists for the
symptoms. In other words conversion disorder is a type
of somatoform disorder where physical symptoms or
signs are present that cannot be explained by a medical
condition (Allin et al. 2005).

Our patient had almost all known factors which are
believed to be associated with conversion disorder. In
terms, of clinical presentation the pseudoparalysis is one
of the most frequently encountered symptoms in patient
population. Ever since the late 19th century observers
have commented that hysterical hemianesthesia and
hemiplegia tend to be seen more commonly on the left
than the right side of the body (Purves-Stewart 1924). It
was suggested that the right hemisphere has a particular
role in emotional processing, making it more likely to
mediate affectively determined symptoms (Stern 1977).
Recently Stone et al (Stone et al. 2003) confirmed
previous findings and reported a significant increase in
the incidence of symptoms on the left side of the body
(58% of patients). Moreover, although majority of cases
had an acute onset, gradual worsening of symptoms
may occur as it was the case in our patient.

Conversion disorder is reported to be more common
in rural population, in individuals with lower
socioeconomic status, lack of education, and low
psychological sophistication (Hales et al. 2008).
However, a major difference exists between the
prevalence in developing and developed countries. In
former countries the prevalence of conversion disorder
may run as high as 31% and Serbia is a developing
country. The onset of the symptoms is often preceded
by conflicts or stressors in a patient's life such as loss of
employment or divorce. In the adult population,
conversion disorder may be associated with mobbing.

Moreover, studies have shown high comorbidity of
somatoform disorders and anxiety or depressive
disorders (Lieb et al. 2007). Anxiety and depression are
the most commonly reported psychiatric comorbidities
among patients with conversion disorder. Earlier studies
showed that 15.7-32.0% of patients with conversion
disorder also had major depression; and 24.0-37.2% of
patients with conversion disorder had anxiety disorder
(Pehlvanturk et al. 2000, Khan et al. 2005, Kozlowska
et al. 2007). Study done in the Netherlands seems to
show a correlation between conversion disorder and
anxiety and depression disorders. Of all patients with a
somatoform disorder, 26 appeared to also have an
anxiety or depressive disorder, and 54 percent of
patients with an anxiety or depressive disorder seemed
to also have a somatoform disorder (De Waal et al.
2004). However the sample size was small and further
studies are needed to corroborate their assertions.

Conversion disorders (e.g., hysteria) historically
have been associated with women. Most studies in
adults, including contemporary series, continue to report
a predominance of the disorder in women. with reported
ratios varying from 2:1 to 10:1. Women (rarely men)
presenting with conversion symptoms may later
manifest the full picture of Somatization Disorder.
In men, there is an association between Conversion
Disorder and Antisocial Personality Disorder (Wilson et
al. 1988). Studies suggest that several variables,
including genetic, physiological and psychosocial
factors such as socialization process and cultural factors,
contribute to sex differences in conversion disorder. The
predominant cultural emphasis, for example, has led to
greater social acceptability of women who show
discomfort than of men. Additionally, illness-reporting
and help-seeking behaviors, different responsibilities on
the basis of gender roles, and role strains do play critical
roles (Huang et al 2009.). However, in one tertiary care
setting, approximately the same number of men as
women had conversion disorder (Crimlisk et al. 1998). Certain settings, such as the military or disability evaluations, may include a majority of men (Allodi 1974; Carden and Schramel 1966; Weinstein et al. 1969). Conversion in children is equally divided among boys and girls (Maloney 1980).

There is little evidence to guide pharmacotherapy in conversion disorder, and specific guidelines available at present. The clinical evidence for pharmaco-therapy in conversion disorder is extremely limited and consists of case reports. Generally, the initial aim in treating conversion disorder is the removal of the symptoms. After physical illness is excluded prognosis for conversion symptoms is good (Folks et al. 1984.). Anecdotal reports exist of positive response to somatic treatments such as phenotiazines, lithium and even electroconvulsive therapy. In other it may be that symptoms removal occured because of resolution of another psychiatric disorder, especially a mood disorder. Patients with conversion disorder commonly demonstrate physiological and psychological medication hypersensitivity characterized by unusual side effects, in part linked to their reluctance to accept that they have a psychiatric disorder. Therefore medications need to be applied at low dosages and gradually titrated upwards (Hurwitz 2003).

A large proportion of patients with conversion have been found to have underlying depression. Effective treatment of the underlying depression may resolve the conversion symptom (Cybulska 1997). Moreover, Bourgeois et al. (2002) and Hurwitz (2004) showed that even without a diagnosable mood disorder, antidepressants may be helpful.

Our patient's symptoms resolved after treatment with amitriptyline but not after treatment with paroxetine. Several studies have shown that some TCAs may be more effective than SSRIs in depressed inpatients, with the strongest evidence for amitriptyline (Barbui et al. 2004). TCAs have an important place as the first-line treatment for patients with severe (melancholic/endogenous) depression (Boyce & Judd 1999.). However, this issue remains controversial and is not resolved yet. Machado et al. (2006) have reported that remission rate for TCAs (44.1%) is higher than for SSRIs (37.7%). Systematic review (Anderson 1998) including 25 studies with a total of nearly 1400 subjects has shown that TCAs were significantly more effective than SSRIs. Of importance for this case report is notion that only the dual action TCAs had greater efficacy than SSRIs. Recently Barbui et al. (2001) have shown that randomized trials suggest that amitriptyline probably has the edge in terms of efficacy over SSRIs.

CONCLUSION

Conversion disorder might not be as uncommon as perceived by psychiatrists today. The presence of dramatic manifestation of symptoms, risk factors, the course of the disorder and the patient's response to a tricyclic antidepressant point to an unusual presentation of this case. Further research is required to investigate the efficacy of different treatment options for this disorder.

REFERENCES


Correspondence:
Cedo D. Miljevic, MD, PhD
Institute of Mental Health
Palmoticeva 37, 11 000 Belgrade, Serbia
E-mail: cedo.miljevic@yahoo.com