

Multi-profile procedures for motor conversion disorders in children – a case report

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Summary

Introduction. The most common motor deficits in patients with conversion disorder are tremors, weakness of limbs and gait disturbance. The proper diagnosis and treatment as well as the patients and their family's cooperation during therapy are essential to achieve fast recovery.

Aim. The aim of this paper is to provide an overview of multidisciplinary interventions successfully applied in the treatment of conversion disorders in children, illustrated with an example of a case study.

Methods. Case report: The 9 years old boy, with trembling of the limbs, trunk ataxia, impaired balance, and significant disability in self-locomotion, caused by conversion disorders, was admitted to stationary rehabilitation treatment because of the lack of progress in the current, four-month treatment, which consisted of hydroxyzin administration and irregular psychotherapy. Behavioural modifications in rehabilitation, individual psychotherapy, family counselling and psychoeducation, and sertraline pharmacological treatment were implemented at the same time. Particular attention was paid to obtain the parents' approval for multidisciplinary therapy, considering that the previous treatment was ineffective because of parents being unconvinced about psychogenic causes of symptoms. They were focused on over diagnosing the child's symptoms making it difficult to manage the proper treatment.

Results. After a three-week period of comprehensive treatment the patient recovered completely and returned to independent mobility and social functioning relative to his age.

Conclusions. The simultaneous implementation of multi-profile treatment is an effective approach in children motor conversion disorders. In order to achieve therapeutic success it is

necessary to convince the parents about the psychogenic ground of the symptoms and a need of multi-profile treatment.

Key words: motor conversion disorder, children, multidisciplinary treatment approach

Introduction

Initially, conversion disorders (CD) were referred to as hysteria. The terms conversion disorders and dissociative disorders are used interchangeably in the ICD-10 [1]. According to the DSM-IV, conversion disorders refer to sensory and motor disorders while the dissociative disorders refer to disturbances of the cognitive processes concerning consciousness and memory. In this taxonomy conversion disorders are categorised within the group known as somatoform disorders and separated from the dissociative disorders [2]. Diagnostic criteria for conversion disorders in DSM-5 has been simplified in order to facilitate the diagnosis by physicians of other specialties than psychiatry. For this purpose, the clarification that it applies to functional neurological disorders has been added to the name of illnesses, the number of diagnostic criteria has been reduced to four, and in order to provide detailed diagnosis the ICD-10 nomenclature has been used [3].

The essential characteristics of conversion disorders are physical complaints that cannot be sufficiently explained by the presence of any somatic disease or other mental illness, including the effects of psychoactive substances. Physical complaints are neither simulated nor consciously generated symptoms. Negative experiences of the past, threatening the patient's physical or mental unity, commonly contribute to the symptom origins. These symptoms are generated unintentionally, and are often the simplest defensive reaction to difficulties, which exceed the patient's adaptive capacity. Unconscious transformation of experienced fear, anxiety and disrupted sense of value to the actual physical symptoms, occurs in order to achieve mental balance [3–5]. Children are particularly vulnerable to these reactions because of an immature personality and increased susceptibility to adverse situations, especially involving family issues. Children easily react in this way to mental stress. Traumatizing situations, such as sexual abuse, trauma, stressful situations at school as well as improper parental care, can be the triggering factors. Dissociation by temporal loss of contact with the patient's own emotions is often a way to survive the moments of danger when the child feels completely helpless. Somatic symptoms appear suddenly, shortly after the stressful experience. They often proceed dramatically, in a theatrical manner, which suggests suspicion of simulation. Children do not simulate, they are convinced about the disease and suffer authentically [3–5]. The symptoms are enhanced by unconscious benefits of being ill. Being ill brings relief from sensations that are unpleasant and difficult to accept (primary benefits), and reduction of high expectations e.g. at school, increased attention of loved ones, e.g. indulgence in parents' care, which may include relieve from household duties (secondary benefits) [5, 6]. Epidemiological data on the prevalence of dissociative disorders in children

is very scarce. According to data from the nineties of the last century, dissociative disorders occur in approximately 10% of children undergoing neurological care, for various reasons and in 1–3% of patients referred to child psychiatrists [7]. Reliable annual incidence rates have been developed so far only in Australia and the UK, they amount to 2.3–4.2/100,000 and 1.8/100,000 children, respectively (data from 2007 and 2013) [8, 9]. The symptoms usually develop during puberty. Children with abnormal EEG examination are more vulnerable [5]. CD is more common among girls (3–4 times higher incidence than in boys) and among families with lower economic status [9, 10]. Dissociative disorders in children can occur in various forms. Sensory conversion reactions include hypoesthesia, hyperalgesia, paraesthesia or impaired senses, e.g. vision or hearing loss in severe cases of the disease. Motor disorders may occur as hypofunction (limbs paralysis, astasia, abasia, dysphonia, aphonia) or hyperfunction (ataxia, tremors, other motor symptoms and seizures) [3, 6, 7, 9, 11]. The most common symptoms among motor disorders are tremors (40%), dystonia (47%), limbs weakness (usually dominant ones, 21.7%) and abnormal gait (13%) [9, 10]. Incoherence and changeability of the symptoms is necessary to make a final diagnosis, e.g. moving the paretic limb, no anatomical correlation between the area of sensory disorders and the paretic area. Psychotherapy is the basis of the treatment. However, complex treatment including behavioural training, family therapy, medication in case of concomitant disorders and progressively introduced rehabilitation, based on a reward system, brings the best therapeutic effects [11, 12]. These patients often suffer from coexisting anxiety-depressive disorders which are treated with antidepressants and anxiolytics [6, 8]. Motor conversion disorders rarely occur in paediatrics, but when present, they are very severe and they raise the risk of school difficulties, motor disability and social limitations. They are also associated with the increased risk occurrence of eating disorders, affective disorders, self-mutilation or drug addiction [3, 6, 9]. Most children recover completely within a few weeks even without therapeutic intervention. However, in rare instances the symptoms can last much longer, sometimes several months or even years. The recovery prognosis depends on the amount and severity of symptoms as well as the timing of treatment commencement. Reports considering treatment and rehabilitation in children and adolescences suffering from CD are scarce. Therefore, it seems reasonable to describe our experience in this field, especially as applied treatment proved to be effective in the long term perspective.

Case report

The patient was a 9 year old boy admitted in March 2013 to the Department of Child and Adolescent Neurological Rehabilitation after more than 4 months history of tremor of trunk and four extremities at rest, intention tremor of the upper limbs, and balance disorders due to sudden bending of the trunk, forward and to the sides. Especially, when trying to stand or walk unassisted. He also reported temporal tremor

of hands and feet. His major problem was impaired mobility. The boy was not able to stand unassisted and needed crutches to walk. At the time of admission he also showed a slight general muscle hypotony and was overweight (weight: 38.5 kg, height: 139 cm, BMI 95–97 percentile), and had a valgus knees and feet.

Course of disease

In the period from the spring to autumn of 2012, the boy sprained his right ankle several times. Due to this, he attended a course of outpatient rehabilitation where, for the first time, balance problems and weakness of the lower extremities began to occur. At that time he also experienced a temporary occurrence of abdominal pain. As they were self-limited, his mother considered them to be the result of dietary mistakes. After several days of intense balance disorders, intention tremor of upper and lower limbs and trunk ataxia in sitting and standing position, he was admitted to the Paediatric Department in November 2012. All of these manifestations prevented him from standing and walking unassisted. A broad panel of diagnostics was carried out including lumbar puncture, several laboratory serum and urine tests, as well as CT and MRI of the brain and spinal cord. None of them gave the answer to what was the cause of these symptoms. Structural lesions and vascular malformations in the brain, meningitis, encephalitis, Sydenham's and Huntington's chorea, Wilson's disease, genetically depended metabolic diseases (GC/MS, tandem MS), torsion dystonia type I (DNA examination) and biotinidase deficiency were excluded. The EEG examination showed alterations on the limit of what would be expected normal for his age. Due to the inconsistency and variability of the observed symptoms, during his stay at the paediatric department, psychological and psychiatric examination was carried out.

The social history showed that the boy lived with both parents. Both parents were healthy, had higher education and were employed. The family lived in a medium sized city and their economic status can be described as average. The boy had a younger sister. He was successfully attending the third class of primary school. During the psychological examination he turned out to be both approachable and very active verbally. He and his mother denied having any problems when asked by a psychologist. However, later on he admitted that he was strongly afraid of death, war and animals (in the past he had been bitten by a dog). It also turned out that he wanted to be slimmer and fitter. He had some problems when running, during physical education classes. His fitness was worse than that of other children of his age and he experienced bullying for this reason. At home he had a very close relationship with his father. He admired him strongly and followed his example. He especially admired his father's athletic skills, feeling at the same time that becoming like him was impossible. The boy presented lack of self-confidence and, at the same time, had a high desire to be famous and competent in professional and economic spheres. He considered money to be an important value. During the psychiatric examination

it turned out that the boy did not like the improving rehabilitation exercises that he had to participate in, after the sprain of his ankle. He did not accept them because they were tiresome and he did not like the fact that several times he was reprimanded about not practicing them properly. Later on he also felt aches in his pelvis and leg muscles. All this took place just before the limb tremors and balance disorders appeared for the first time. There were no psychotic symptoms, sleep or appetite disturbances. His mood was indifferent. Conversion disorders were diagnosed as the psychiatrist noticed that limb tremors diminished when the boy's attention was diverted. The differential diagnosis also included conscious simulation of impaired mobility and somatoform and anxiety disorders. On the basis of history and examination dissociative disorder was suspected. Individual and family psychotherapy was recommended as well as hydroxyzine syrup in doses 3 x 5 mg daily. Access to psychotherapy in the hospital was difficult, the child received only drug therapy. At the end of November, the boy was discharged and referred to the out-patient clinic for family and individual psychotherapy. His family began attending psychotherapy sessions very reluctantly, no rehabilitation was recommended. In spite of many diagnostic tests already completed the parents decided to get a second opinion in order to explain the causes of their son's mobility disorders. Therefore, the boy was admitted to another paediatric neurological ward in a different city at the end of January 2013, where he spent almost one month. No abnormalities were found that could explain his symptoms. Since December 2012 until mid-March 2013, the boy took part in individual and family out-patient psychotherapy sessions irregularly, because of the hospitalisations. His parents decided to discontinue hydroxyzine treatment because of no noticeable results and because they were afraid of its side effects. They decided to make use of the referral for rehabilitation. The boy was admitted to the Department of Neurological Rehabilitation in March 2013.

At first, during his stay in hospital, an individual therapy plan was worked out and psychological and psychiatric consultations were carried out. Once again the dominant role of the father was confirmed as an unequalled exemplar to follow. At the same time, lowered self-esteem, fear and exaggerated ambitions were observed. The boy persistently referred to, what he believed was, his inadequate fitness ability. It turned out that he was often scolded by his father for clumsiness during their common motor activities in leisure time. In this way, after he sprained his ankle, his father tried to "motivate" him to do rehabilitation exercises more precisely. He praised the boy very rarely. The psychologist noticed that the boy was prone to exaggerate somatic and pain complaints. The psychiatrist came to the conclusion that there could be a reasonable causal chain with mobility disturbances and confirmed the diagnosis of motor conversion disorders. The applied treatment was based on individual psychotherapy sessions and physical exercises. The boy held daily meetings with a psychologist and once a week a psychologist also met with the boy's parents. During the exercise sessions, special attention was paid to the reinforcement of his self-esteem by praising him when exercises were performed

properly and ignoring the irregularities of his movements. Nobody denied his sense of disease since his parents noticed that he reacted very negatively to the suggestions of simulating the symptoms of illness. Every day the boy participated in two sessions of individual exercises aimed primarily at improving his ability to move unassisted, balance and coordination skills in different positions and gait re-education. Initially with assistance of the therapist, then on a treadmill. In addition, he practiced graphomotor skills in the daily sessions of occupational therapy. Three times a week he also took part in physical activities in a swimming pool. The first week of therapy did not show the expected results. Although his balance abilities and stability in standing were better, he still could not stand and walk unassisted. Because of the lack of expected progress in the treatment, a psychiatric re-consultation was recommended. Psychiatric examination revealed clear consciousness, full orientation, an indifferent mood with a tendency to decrease, but without disturbances of thoughts and perception. The boy was very embarrassed by his disease, especially because of not being as physically fit as the others and a need to walk on crutches. In particular, he felt the fear of being evaluated by others, especially peers and his father. During a conversation with his parents, a psychiatrist focused on the psychogenic background of the symptoms and also emphasised the lack of cooperation during the previous treatment, both psychotherapy and pharmacotherapy. The psychiatrist presented the arguments for and against the pharmacological treatment and noticed that only a comprehensive approach to the therapy can give a positive result. Because of the high level of anxiety in previous functioning of the child, selective serotonin reuptake inhibitor (SSRI) was ordered. Since that time a gradual improvement was observed. On the seventh day of sertraline administration (at a daily dose of 25 mg) occurred a significant increase in motor functions, after a few next days of therapy the boy resigned from using the crutches and began to move unassisted. However, trembling of the limbs, blurred handwriting and imbalance problems still persisted. After a three-week stay at the department of rehabilitation, the boy walked alone up and down the stairs and overcame obstacles without a problem, during walking and running. He was discharged with the recommendation of the systematic use of sertraline and individual and family psychotherapy. He was also asked to continue doing balance and hand coordination exercises at home. During the follow up visits 3, 6, 9 and 12 months after discharge, no recurrence of disorders, problems with mobility or balance were observed. In the parents' opinion only careless handwriting persisted. The boy was therefore diagnosed in Psychological and Pedagogical outpatient clinic. The compensatory classes at school were recommended in order to develop delayed perceptual-motor functions, and daily programs, aimed at improving writing skills, were carried out at home. Currently, the boy does not report any difficulties at school. He exercises during lessons of physical education without any problems. A significant improvement in family relationships was observed during the follow-up examinations at Mental Health Out-patient Clinic. The boy and his parents regularly attended family therapy. His parents supported him and accepted achievements of

their son, which greatly improved his mental and physical condition. The boy spent more time with his peers who did not notice his “physical disability”. It was decided to stop drug therapy but the continuation of family therapy and individual therapy was recommended in order to strengthen the effects of treatment.

Discussion

It is important to exclude somatic background of symptoms observed in the patient before the diagnosis of conversion disorders. Accurate assessment of the patient’s somatic and neurological state allows for the avoidance of catastrophic mistakes e.g. delay in serious organic disease of nervous system treatment [13]. In the described case there can even be some over-zealousness seen in this regard due to parents’ doubts about the relationship between the boy’s symptoms and his mental state. It resulted in further examination, although the diagnosis, made on the basis of wide neurological diagnostics conducted during the patient’s first hospital stay, excluded somatic background of illness. According to the literature denial of diagnosis of conversion disorder by parents is not a unique reaction. Many parents find it difficult to understand that emotional factors can cause visible physical symptoms that suggest a serious physical illness (e.g. movement disorder or seizures) [6]. For this reason, proper diagnosis is often made too late, sometimes even after a few or even several months after the onset of symptoms, and the children are over-diagnosed due to somatic symptoms [14, 15]. In case of our patient the diagnosis was made quickly. However, the boy’s parents did not accept it, which resulted in poor cooperation in the therapeutic process and postponed his recovery. They argued that the boy does not have problems in the school community, the family functions well, there is no violence or other social pathologies, therefore there is no reason to look for the causes of the disease in it. The patient attended psychotherapy irregularly and he started the rehabilitation after more than four months from the onset of symptoms.

During his stay at the Department of Rehabilitation he underwent a second consultation by a psychiatrist and a psychologist. Their evaluation was made in order to convince the parents that their child’s symptoms were of a psychogenic background. To achieve greater cooperation with them, the parents were asked to participate in meetings with the psychiatrist and the psychologist. Examples of various, often very subtle causes of psychosomatic disorders, which are often overlooked by caregivers, were presented. During the psychological and psychiatric assessment it was determined that the boy presented attitudes and beliefs predisposing to conversion disorder. Lowered self-esteem due to the inability to catch up with his father and peers, while believing that the difficulty of coping is a sign of weakness, the characteristics which is unacceptable both by himself and by his father, who professed the cult of the strong man. Since the father was a great authority for his son, inability to catch up with him generate frustration and fear, the more that the boy was characterised by great ambition, and the feedback from the environment to his difficulties was

not supportive. It seems that the moment when the boy sprained his ankle was the factor triggering the symptoms of conversion disorders. It became a reasonable, objective, unconscious reason to sanction inferior physical fitness, as well as the way to free from the need of meeting his expectations and the expectations of the environment. By somatic symptoms the boy achieved secondary benefit of avoiding activities that were associated with the feeling of failure. The disease also protected him against a possible rejection by his father, because the severity of symptoms caused cessation of negative comments and provided greater attention and care. He experienced a sense of security and support that was missing so far. In this way he became convinced that it is "worth" to be ill. The mechanism of maintenance was excessive alertness and focus on his somatic complaints (pain, numbness, weakness of the limbs), mistakenly interpreted as progress of unknown, dangerous illness, which, combined with a continuous tendency of parents to multiply neurological diagnostics deepened anxiety and was a part of the vicious circle.

The pharmacological treatment was ordered because motor disability was accompanied by a significant increase in anxiety. Anxiolytics were not used because of the risk of addiction. The psychiatrist recommended treatment with sertraline and the continuation of cognitive-behavioural therapy, based on the results of the largest, to date, research with randomised trial in children with generalised anxiety disorder, social phobia, or separation anxiety disorder, which indicated the effectiveness of this type of therapy in 81% of patients [16].

The purpose of individual therapy, both in the period of symptoms occurrence, and after the symptoms have subsided, was the elimination of unconscious conflicts of the child (low self-esteem and a strong need for success), changing beliefs about himself by highlighting achievements in various fields and to stimulate the exploration of passion, which would have satisfied his ambition, would favour the formation of a healthy personality and decreased the need to imitate his father in everything. Defence mechanisms (avoiding the threat of failure) were discussed, and the sense of assertiveness in granting the right to imperfection was developed. The psychologist used visualisation of school and home situations which the boy did not like, and which were aimed to strengthen his resistance to failure and criticism.

During the psychotherapy, the father's negative comments regarding the patient's motor ability, especially during rehabilitation of his sprained ankle, along with the boy's strong bond with him, could lead to decompensation (development of anxiety beliefs that he cannot cope even with the simplest physical exercises, which makes it virtually impossible to realise a strong desire to be like his father). The importance of praise for the child's emotional stability was emphasised, and ways of showing acceptance of the child by the parents and encouraging the boy to self-acceptance and building an independent personality were discussed. The need to balance relationship with the child ("dominant" father and "withdrawn" mother), was also suggested in order to increase a conviction about the availability of complete security with both parents. The child's parents did not want to take systemic therapy, working with them was based on family

counselling and psychoeducation. Because no recurrence had been observed in one year observation, this form of aid was considered as adequate. At the same time, the patient's rehabilitation based on a modified cognitive-behavioural procedure was planned. This technique is known as VEER (Validate, Educate, Empathise, Rehabilitate). The first step is to ensure the patients and their families that the symptoms are real although there are no organic causes. The second step is to present a natural course of the disease which usually results in a full recovery within few months of complex treatment. The third step, is to ensure the patients and their families that follow-up medical care will be provided in order to increase motivation to cooperate. Implementation of rehabilitation is the last step in this therapeutic chain and it is also the main method of motor dissociative disorder treatment [17]. The fundamental method of conducting the therapy is a positive reinforcement. Correct movement patterns performed by the child are praised and they are involved in daily activities which bring the patient joy and satisfaction. On the other hand, it is very important to ignore mistakes in motor tasks, assuming that the child will strive to perform positively reinforced patterns [12, 17]. It is significant to ensure the patient that we are convinced that the symptoms are real. Our patient and his parents were complaining about medical staff who had suggested that the boy's symptoms were simulated. During the therapy the principle of grading the difficulty of exercises was used. It increased the child's self-confidence and his security, as well as enhanced the patient's belief in his own abilities which therefore encouraged him to continue exercising. However, physiotherapy and psychotherapy were not sufficient. Our patient had strongly expressed anxiety, so significant progress in rehabilitation was not observed until sertraline administration [16]. The achieved improvement can be explained by breaking the vicious circle of maintaining symptoms, primarily through pharmacological reduction of anxiety and applying the cognitive-behavioural principles by all members of the therapeutic team. The available literature suggests that early application of a combined treatment shortens the time required to achieve improvement to a few weeks from the onset of illness. It also results in full recovery in 85% to 97% of children, as well as long relapse-free periods [16, 18]. Improvement of the emotional stability of the child by the showing him full understanding, abandoning an unnecessary diagnostics and providing a good prognosis for recovery also seems to be an important factor.

Conclusions

Looking back at the boy's clinical history, it can be noticed that despite an early and accurate diagnosis, his recovery was successful only after several months of illness onset due to the lack of a coherent action plan and adequate cooperation with his parents. Only the combination of psychotherapy, physiotherapy and medication applied simultaneously resulted in full recovery and lack of relapses.

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