

Medical and psychological problems in diagnosing and treating a patient with chronic complex regional pain syndrome

Problemy medyczne i psychologiczne w diagnozowaniu i leczeniu pacjentki z przewlekłym zespołem wielobjawowego bólu miejscowego

Dorota E. Ortenburger^{1,2}, Małgorzata K. Szerla^{3,4}

¹Institute of Physical Education, Tourism, and Physiotherapy, Faculty of Pedagogy, Jan Długosz University, Czestochowa, Poland
Head of the Department: Prof. JDU Jacek Wąsik PhD

²The Pain Treatment Centre, City Policlinic Hospital, Czestochowa, Poland
Head of the Department: Wojciech Konieczny MD

³Department of Anaesthesiology and Intensive Care, The Provincial Specialist Children's Hospital, Kielce, Poland
Head of the Department: Małgorzata Szerla MD, PhD

⁴Department of Emergency Medicine, Faculty of Health Sciences, Faculty of Health Sciences, Jan Kochanowski University, Kielce, Poland
Head of the Department: Prof. Siarhei Panko MD, PhD

Studia Medyczne 2015; 31 (1): 56–59
DOI: 10.5114/ms.2015.49954

Key words: chronic pain, complex regional pain syndrome, interdisciplinary treatment.

Słowa kluczowe: ból przewlekły, zespół wielobjawowego bólu miejscowego, leczenie interdyscyplinarne.

Abstract

The aim of this study is to present the medical and psychological problems which occurred while diagnosing and treating a 42-year-old woman with complex regional pain syndrome (CRPS). It presents a description of somatic and emotional symptoms, social problems, and problems in diagnosis and treatment (left lower limb). Based on the described symptoms, it must be stated that there are specific premises to claim that the studied case fulfils the criteria of complex regional pain syndrome. Data concerning the patient's psycho-emotional state were taken from a semi-structured interview, the degree of intensity of automatic negative thoughts, and psychological manifestations of hyperactivity by deep limbic system, developed by D. Amen. The patient had symptoms from a few categories, including sensation, reduced mobility, and trophic symptoms (skin lesions). Due to the complex nature of the formation of CRPS pain and associated disorders that are difficult to treat, multidisciplinary therapy was recommended.

Streszczenie

Celem pracy jest przedstawienie problemów medycznych i psychologicznych pacjentki z wielobjawowym bólem miejscowym kończyny dolnej. Przeanalizowano postępowanie, jakiemu była poddana pacjentka w trakcie diagnozy i leczenia. Praca zawiera opis objawów somatycznych i emocjonalnych, problemów socjalno-społecznych oraz trudności w diagnozowaniu i leczeniu 42-letniej kobiety, która po okresie konsultacji w różnych placówkach medycznych zgłosiła się do poradni leczenia bólu. Wśród wielu objawów skoncentrowano się na opisie takich problemów, jak nieproporcjonalnie do pierwotnego bodźca silny ból oraz cierpienie z powodu narastającego poczucia niesprawności. Dane dotyczące stanu psychiczno-emocjonalnego pochodziły z wywiadu semistrukturalnego, pomiaru psychologicznych przejawów nadaktywności głębokiego układu limbicznego w opracowaniu D. Amena. Z bólem nieproporcjonalnym do zdarzenia zapoczątkującego współwystępowały objawy z kilku kategorii, w tym objawy troficzne (zmiany skórne), zmiany w zakresie czucia, zmniejszenie ruchomości. Ze względu na złożony charakter oraz fakt, że towarzyszące zaburzenia są trudne do leczenia, uzasadniona jest wielodyscyplinarna terapia.

Introduction

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. This physiological phenomenon serves as a warning sign against body damage and/or information about such

damage. Nociception is a complex sequence of physiological processes that help to sense and become aware of pain occurring at the level of the peripheral and central nervous system. This phenomenon involves four stages of pain stimulus transformation: transduction, transmission, modulation, and perception. The proper (physiological) functioning of those elements

is genetically conditioned. Sensitivity and resistance to pain stimuli and susceptibility to develop chronic pain seems to vary depending on the individual [1]. Changing its character from acute to chronic, pain initiates a cascade of adverse changes in neurons of immune, autonomic nervous, motor, and nociceptive systems. These changes lead to disturbances in the functioning of many systems and organs, and thus the body as a whole. Therefore, it is assumed that chronic pain should be treated as a potential or already existing medical condition. Along with somatic problems, a person suffering from chronic pain usually suffers from mounting psychological, social, and economic problems. Their severity depends on the duration and intensity of pain, not on its cause [2]. Chronic pain, similarly to other stressors, makes it harder for a person to cope with all sorts of problems. Psychological factors exert a documented influence on the effects of analgesic therapy. Therefore, cooperation of a psychologist and a patient suffering from chronic pain constitutes a very important element of multidimensional, interdisciplinary help in coping with chronic pain. According to the opinion of the Pain Treatment Centre (2011), for patients who participate in pain treatment programs, analgesic therapy is more effective when pharmacological and physiotherapeutic treatment methods are accompanied by psychotherapy and psychological counselling [3].

The aim of this study is to present medical and psychological problems that occurred while diagnosing and treating a patient with chronic regional pain. The study focused on the way the patient went through during the diagnosis and the treatment.

Case report

A 42-year-old female patient suffered a foot injury while cleaning her house. She did not visit a medical facility immediately after the accident. Initially, she applied cold compresses on her foot. Two days after the accident the woman went to the doctor. The tests showed contusion of her left foot with phalanx fracture and skin damage in the area above the foot. After 1 month, during orthopaedic check-up, peripheral nerve injury of the left foot was not unambiguously confirmed. "Medical justification" for the chronic pain was not found. However, the patient still suffered from pain, which limited her activity and which made her feel to some extent physically disabled. Another time, 1 month after the first incident, the woman suffered a minor skin injury to the same foot while working in a garden. This small injury failed to heal. The doctor who treated the patient said that the prolonged healing period of this wound might have been connected with contamination of damaged tissues. As analgesic treatment, the patient had non-steroidal anti-inflammatory drugs (NSAI) applied. Problems tackled in the Pain Treatment Centre: the patient came to

the Pain Treatment Centre around 4 months after suffering the second foot injury. Subjective feelings of the patient and physical symptoms observed during the subsequent stages of the illness: the patient's basic complaint was: "I feel pain whenever the air or anything else dabs or may dab my skin." – (It was allodynia – a pain caused by stimuli that do not usually cause pain). After around 2 months (6 months after the second foot injury) the character of the wound changed and the aching area broadened – searing pain now encompassed the lower leg area (the area outside the initially injured area), foot swelling, and disorder in skin perfusion with noticeable changes in skin temperature – initially described by the patient as "fevered foot". During the illness (2 years later), the left foot became visibly cooler than the right one and its skin was glistening with livid colouration, systematically; the patient's mobility and overall activity worsened. Based on the described symptoms it must be stated that there are specific grounds to claim that the studied case fulfils the criteria of complex regional pain syndrome. Damage to the peripheral nerve was not stated unequivocally. However, the pain was disproportionate to the starting event. The female patient has symptoms from a few categories including sensation, reduced mobility, and trophic symptoms (skin lesions).

Psychological problems: among the psychological problems reported by the patient, the following were dominant: increasing difficulty in decision-making, increasing fear of changes, visible (both to the woman and her closest relatives) emotional lability, changes in her daily routine and change of habits, partial loss of life enthusiasm (will to live), and the occurrence of automatic negative thoughts. Social consequences of complex regional pain syndrome (CRPS): the patient regarded the following losses as the most devastating results of chronic pain: the need to resign from her professional career and abandoning many favourite forms of activity. Her income decrease caused material problems, which deepened the loss of will to live. Data concerning the patient's psycho-emotional state were taken from the semi-structured interview, the degree of intensity of automatic negative thoughts, and psychological manifestations of hyperactivity by the deep limbic system, developed by Dawid Amen.

Difficulties in diagnosis and treatment

The woman reported to the Pain Treatment Center very irregularly, and at long intervals. Nevertheless, it was possible to determine that in the past the woman had suffered minor left foot injury. She had had scarce medical documentation from other health facilities. At the Pain Treatment Center she reported and described a variety of subjective pain, and changes in the area of her left lower limb were visible. On the grounds of a complex clinical picture of the course of the illness,

Complex Regional Pain Syndrome was diagnosed. The woman admitted that during her previous own independent search of “the right” diagnosis and effective treatment (which lasted 2 years with breaks) in one of the clinical academic centers she heard the diagnosis – algodystrophy. Over a three-and-a-half-year period, the patient’s treatment included pharmacotherapy (initially non-steroid anti-inflammatory drugs, then drugs from the tricyclic antidepressant group), physiotherapy, and psychotherapy. The patient’s stay in a sanatorium resulted in significant improvement of her overall well-being and relief from pain. Psychological help during the course of treatment involved supportive psychotherapy in its basic form and to a limited extent – due to the woman’s irregular visits to the Pain Treatment Centre. It was probably caused by her searching for help in other specialist medical facilities in Poland.

The woman had a tendency to confront physicians’ diagnoses with the opinions of other specialists representing different specialties, which she did without the knowledge of the physician who treated her at that time. Those visits brought in turn the increase of hope for the improvement after consultations in specialist medical facilities and its decrease at the time when the pain intensified. As a result of successive disappointments, the woman devoted some of her efforts to look for alternative therapeutic possibilities, striving to obtain information about mirror therapy. Looking for a solution to a difficult situation assumed different forms. This cycle of attempts to cope with pain and other symptoms consisted of periods of intensive treatment and breaks in treatment, periods of increased activity and resigning from activity, appointments with other doctors, using proposed medicines, pharmacotherapy, and physiotherapy. It is hard to systematise how often the patient stopped recommended treatment and tried other methods on her own. The woman also searched for alternative methods. It was observed that despite irregular and unsystematic treatment, the patient experienced periods of relief from pain, independently from the therapy used. It happened especially when the patient had great trust in a physician and/or clinical centre, living in hope that they would help increase her well-being and fitness. It may suggest a role of placebo in her therapeutic process. As is known, this effect may be visible even when placebo is not applied in a patient [4]. Information collected in medical records revealed that physiotherapy had been applied and as a result oedema/swelling, and trophic changes were reduced. However, the result was transitory. The information provided by the female patient about earlier stages of the treatment and the ones observed at the Pain Treatment Clinic in the City Hospital in Czestochowa confirmed that according to Visual Analogue Scale (VAS) her pain experience was not less than 4, and in times of pain it was in the range 7–8.

Discussion

The term “chronic” refers to pain duration, but it also has prognostic importance. Korff and Dunn suggest that chronic pain should be defined as a probability of “chronification” of pain and its continuation in the future, not only on the grounds of pain continuity so far [5]. However, in daily clinical practice, it is still easier to differentiate between acute and chronic pain based on its duration rather than on risk assessment of its development into chronic pain. Such a clinical approach coupled with a patient’s distrust leads to delaying a proper diagnosis, causing the patient’s suffering. Complex regional pain syndrome (also referred to as reflex sympathetic dystrophy or “causalgia”) is a type of chronic neuropathic pain initiated by (or caused by) a primary lesion or primary dysfunction of the nervous system (brain, spinal cord, peripheral nerve) [6–8]. The circumstances leading to the development of CRPS are still poorly understood. The incomplete understanding of its pathophysiology results from the lack of a proper tool that would enable validation of clinical data and additional tests [9]. As emphasised by many authors, vulnerability to CRPS occurs in people with mental and emotional liability [10]. Pain occurring in one limb is usually accompanied by sensory, motor, autonomic, and trophic disturbances within tissues of the affected limb. At the same time, those symptoms are disproportionate to the initial effects of injury [11].

Studies on CRPS diagnostic criteria established by IASP conducted in 1996 proved their imperfection (lack of specificity). In 2003 in Budapest, an international consensus was achieved with the aim to recommend new criteria, which has resulted in a decrease of giving the diagnosis of CRPS [12]. Establishing a definitive CRPS diagnosis may be exceptionally difficult at an early stage of a disorder when there are few symptoms or when they are mild. Diagnosing CRPS is based mainly on basic subjective and objective symptoms. The current binding diagnostic criteria include determining the following: the presence of initiating stimulus (usually resulting from a mild injury that does not cause significant damage to nerves), pain intensity disproportionate to the initial mild injury, development of hyperalgesia and allodynia, swelling, disorder in skin perfusion, and sweating disorders in the pain area. Full clinical presentation develops gradually over the duration of the disease. When with help of nerve conduction test nerve damage is determined, CRPS type I is diagnosed, and if not, it is CRPS type II [2, 8].

Conclusions

Summing up the above considerations, CRPS is associated with a series of problems for a patient and for people who organise the treatment process from diagnosis to therapy [13]. Individuals suffering from

CRPS, when they finally visit the Pain Treatment Centre, are overwhelmed by increasing difficulties and unfulfilled expectations when it comes to the effects of treatment.

The case analysis presented above indicates that CRPS accounts for a serious source of health problems (somatic and mental) and limitations of life activity in the female patient. In a psychological test given to her, the presence of automatic negative thoughts, and among others her growing belief that her disability made her a burden for her family, was identified in the patient's words. Intensification of psychological help and psychiatric counselling were justified. Lack of initial recognition and not taking into account such problems had an impact on the poor effects of her pain treatment. The analysis of the disease and its symptoms occurring in the patient in the case study, reference books, and the authors' personal clinical experience confirm the need for collaborative and multidisciplinary CRPS treatment [14]. In the described case, systematic and indispensable consultation between an orthopaedist, neurologist, anaesthetist, physiotherapist, and psychologist was missing. Such consultations should be carried out on the initiative of those specialists and with a mutual understanding – on the basis of a case conference, and not of a suffering patient's desperate search for help.

Literature concerning CRPS treatment involves reports on attempts to use methods from alternative contemporary medicine, such as mirror therapy [15]. However, the authors of specific reports involving this treatment more often refer to descriptions of individual cases than to randomised studies conducted in larger groups. In the case of patients with CRPS, applying this method was supported by a relatively good balance between the benefits and potential harm (damage) during its use [16, 17]. The problem of diagnosing and treating CRPS is still a major challenge both for the physician and the psychologist supporting the treatment process, particularly when patients are tired of the illness, discouraged by the long diagnostic process, and when, looking for effective help, they lose hope of receiving it quickly. The case study presented proved that the problem of diagnosing and treating CRPS is still a major challenge. The feeling of being overwhelmed with increasing problems and disappointment with the effects of the treatment should be mentioned among the factors potentially influencing the efficiency of pain therapy. Due to the complex nature of the formation of complex regional pain and associated disorders that are difficult to treat, multidisciplinary therapy is recommended [18].

Conflict of interest

The authors declare no conflict of interest.

References

1. Basbaum AI, Bautista DM, Scherrer G, et al. Cellular and molecular mechanisms of pain. *Cell* 2009; 139: 267-84.
2. Dobrogowski J, Zajączkowska R, Dutka J, Wordliczek J. Patofizjologia i klasyfikacja bólu. *Pol Przegl Neurol* 2011; 7: 20-30.
3. Ortenburger D. Biopsychospołeczny model leczenia bólu. Gdy medycznym sposobom towarzyszy psychoterapia i pomoc psychologiczna. *Ból* 2011; 12: 13-22.
4. Finniss DG, Kaptchuk TJ, Franklin Miller F, et al. Placebo effects: biological, clinical and ethical advances. *Lancet* 2010; 375: 686-95.
5. Korff von M, Dunn KM. Chronic pain reconsidered. *Pain* 2008; 138: 267-76.
6. Butera JA. Miniperspectives: recent approaches in the treatment of neuropathic pain. *J Med Chem* 2007; 11: 2543-6.
7. Dobrogowski J, Wordliczek J. *Ból przewlekły*. CMKP UJ, Krakow 2002; 27-35.
8. Wordliczek J, Dobrogowski J. *Leczenie bólu*. PZWL, Warsaw 2007; 233-54.
9. Reinders MF, Geertzen JH, Dijkstra PU. Complex regional pain syndrome type I: use of the International Association for the Study of Pain diagnostic criteria defined in 1994. *Clin J Pain* 2002; 18: 207-15.
10. Danis D, Mikuła W. Algodystrofia pourazowa w obrębie kończyny dolnej po złamaniu kostek goleni. *Medycyna Rodzinna* 2002; 5: 191-3.
11. Hsu ES. Practical management of complex regional pain syndrome. *Am J Ther* 2009; 16: 147-54.
12. Harden RN, Bruehl S, Perez RS, et al. Validation of proposed diagnostic criteria (the Budapest Criteria) for Complex Regional Pain Syndrome. *Pain* 2010; 150: 268-74.
13. Hogan CJ, Hurwitz SR. Treatment of complex regional pain syndrome of the lower extremity. *J Am Acad Orthop Surg* 2002; 10: 281-9.
14. Żyłuk A, Puchalski P. Wczesne rozpoznanie pourazowej algodystrofii. *Chir Narz Ruchu Ort Pol* 2003; 68: 109-13.
15. Moseley GL, Gallace A, Spence C. Is mirror therapy all it is cracked up to be? Current evidence and future directions. *Pain* 2008; 138: 7-10.
16. Moseley GL, Gallace A, Spence C. Mirror therapy for chronic complex regional pain syndrome type 1 and stroke. *N Engl J Med* 2009; 361: 634-6.
17. Ccahio A, De Blasis E, Necozone S, et al. Mirror therapy for chronic complex regional pain syndrom type 1 and stroke. *N Engl J Med* 2009; 361: 634-6.
18. Lee, FH, Raja N. Complementary medicine: in chronic pain. *Pain* 2011; 152: 8-30.

Address for correspondence:

Małgorzata K. Szerla MD, PhD
Department of Emergency Medicine
Faculty of Health Sciences
Jan Kochanowski University
Al. IX Wieków Kielce 19, 25-317 Kielce, Poland
Phone: +48 41 361 08 70
E-mail: szerla@wp.pl