The importance of proprioception in the diagnosis of cases thought to be Munchausen syndrome

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ABSTRACT
Munchausen Syndrome is known as a condition where individuals who seek attention for themselves present at healthcare institutions with exaggerated complaints. Diagnosis can be difficult in some cases. In this paper are presented two cases of Munchausen Syndrome diagnosis by removing finger proprioception with local anesthetic based on incompatibility between trauma history and clinical findings. Evaluation of the resting position of the hand is primarily associated with proprioception. Sight and touch are important for proprioception. In patients thought to be potentially faking symptoms in areas where local anesthesia can be applied easily, such as the fingers, removing proprioception in the physical examination is important in diagnosing these individuals.

Key words: Local anesthesia, Munchausen syndrome, proprioception

Introduction
Munchausen syndrome (MHS) is a rarely seen psychiatric disease under the broad heading of factitious disorders. It is also known as hospital–attachment disease. Affected individuals mimic the symptoms of a disease to draw attention to themselves or to obtain some kind of secondary gain [1].

In orthopedic practice, restrictions in joint movements are often associated with hand injuries [2]. The determination of the amount of restriction and degree of disability demands serious attention because it could cause problems related to social security and legal issues. However, in Munchausen syndrome, the absence of an evident injury history and the claim of restricted finger movement leads to a complicated situation, making it difficult for the clinician to differentiate real and fabricated symptoms and to make a differential diagnosis.

The disease must be kept in mind during diagnosis and it is important in the identification of these conditions that individuals are referred to the psychiatric clinic for supportive therapy. In this paper, two MHS cases are presented, each patient claiming to have restricted finger movements with no history of hand injury. Local anesthesia was applied and the patients were prevented from seeing their hands to remove proprioception and overcome the fabricated symptoms. Thus, with
impaired proprioception, the patients could not mimic the symptoms as they wished to and the restriction was seen not to be associated with any pathology. As is best presently known, these types of cases and methods have not been previously described in the literature.

Case Report

Case 1

A 14-year-old female patient presented with complaints of restriction in active extension of the 5th finger of the right hand. In the anamnesis, there was no history of surgery, chronic disease or psychiatric disorders, though it was learned that there were various family problems at home. In the physical examination, the right hand’s 5th finger could not be brought into active extension but there was full passive extension (Figure 1A). The neurovascular examination was normal. No pathology was determined and as MHS was suspected, the family was informed and further investigation was conducted in the operating theatre. Firstly, digital nerve block was applied to the 5th finger, and then a screen was placed to prevent the patient seeing their hand. The finger was then observed to be able to make full active extension (Figure 1B).

Case 2

A 20-year-old male patient presented at the polyclinic with restricted active flexion in the right hand’s 2nd finger. The patient, who was undertaking compulsory military service, had previously been evaluated at several centers for the same complaint, and as it was causing problems with respect to their military duties, they were referred to an advanced center for diagnosis and treatment. There was no history of previous surgery or chronic disease. In the 2nd finger, active flexion could not be achieved, but passive flexion was possible and no neurovascular problem was determined (Figure 2A). After obtaining informed consent from the patient, further examination was made in the operating theatre. Digital nerve block was applied to the 2nd finger and active flexion was obtained (Figure 2B).

Digital nerve block

To block the digital nerves of the index finger and the little finger, a total of 3–4 ml of 1% lidocaine without adrenaline was injected into the tendon on the midline of the dorsal and volar surface about 1 cm distal to the metacarpophalangeal joint. The block was clinically complete in 5–10 min with loss of all light touch sensation. Light touch was tested intermittently to ensure that the block remained complete during the experimental trials.

Discussion

It has been reported in the literature that many MHS patients are female, aged 25 – 30 years old, and visit multiple hospitals for various reasons, mimicking the symptoms of arrhythmia, pneumaturia and hypertension [3-7]. Psychiatric evaluation has determined anxiety, as well as emotional and personality disorders in the majority of cases [8]. The two patients here, with a diagnosis of MHS, were both of a young age and experiencing psychological problems because of a number of reasons.

The current cases had a history of multiple presentations at other healthcare institutions, but no confirmed diagnosis had been made and no reason given to explain the restricted movement. In the examinations at the authors’ centre, no anatomical disorder...
could be determined and thus, a diagnosis of MHS was made. These patients presented difficulties in the diagnosis of MHS. Both patients created restrictions in the finger movement at will but it was possible for the desired movement to be made passively in the fingers. Although MHS patients have been reported many times previously by Psychiatry and Urology clinics and their associated branches, cases are rarely seen in the Orthopedic clinic [3,7-9]. As is best known at the present time, these types of cases and the associated diagnostic methods have not previously been reported in literature.

There are reports from hand surgery and plastic surgery clinics of patients who have mimicked reflex sympathetic dystrophy, tendon and nerve injury and patients who have had a flap applied, damaging the flap themselves [10-14]. Although the inability to move the finger and damage to the flap seem to be very different pathologies, a common basic characteristic of MHS patients is to consciously create deliberate psychological or physical symptoms of a disease [11]. In those studies, diagnosis of the patients was based on observation. In the patient who had had a flap applied, when necrosis developed twice unexpectedly, it was understood that the patient themselves had created the hand wound and the flap necrosis [11]. In the patient followed up for reflex sympathetic dystrophy, it was established that the patient had caused heating by rubbing the thermometer and had caused oedema and reddening in the extremity by applying a tourniquet and this directed the clinician in diagnosis [15]. Kaya et al.[14] presented a patient with a self-inflicted wrist cut who imitated the symptoms of tendon and nerve injuries. In their case report, in terms of the hand examination, the patient was unable to flex the 2nd and 3rd fingers at the level of the metacarpophalangeal joints, but upon surgical exposure, they found the superficial and deep flexor tendons and nerves intact. They concluded that in complex cases, like suspicion of factitious disorders, further studies, such as magnetic resonance imaging (MRI) and electromyography may be very beneficial for true diagnosis and can prevent unnecessary surgical interventions. With the method described here in the current cases, the loss of proprioception prevented the patients from fabricating symptoms.

Previous studies have shown that the effect of fine adjustments to the senses of sight and touch have an effect on proprioception as the basis for predicting hand localization [16-19]. Similarly, the joint position is defined by the interaction of finger muscles with sensory nerves which perceive tension in the skin around the finger joints [20,21]. With the application of anesthesia by digital block to disrupt proprioception, the sense of estimating the hand position is impaired [22]. Thus, when there is no anatomical problem, the application of digital block and preventing view of the hands in MHS patients claiming restricted movement in the finger will prevent the patient from fabricating symptoms.

Patients with hand injuries constitute 10-20% of patients presenting at the Emergency Department. Most of these injuries are simple cuts but joint movement restrictions, which could be attributed to tendon cuts and intra-articular fractures, frequently lead to problems for the Orthopaedic clinic [2]. Severe hand injuries may cause the patient and their family various psychosocial and economic effects and after the injury, the patient may not be able to return to their previous employment, ultimately bring about a series of problems involving the individual’s social security and legal actions [23]. The method described here could be used not only for MHS patients but also to demonstrate the reality of symptoms that may be suspected of being fabricated for legal and compensation cases.

Overall, for patients with Munchausen syndrome, a detailed history must be taken that includes information about the family, medical records must be examined and a detailed psychiatric examination must be conducted together with the psychiatry clinic. In persistent patients with a disease which does not recover despite the appropriate treatment and neither has any organic reason for being present when a clear diagnosis has not been obtained despite visiting many hospitals, Munchausen syndrome must be kept in mind. If necessary, patients should be admitted for observation and follow-up. The method described here is safe not only for MHS patients but can also be used as a guide for all cases where there may be a secondary gain of financial compensation.
Conflict of interest statement
The authors have no conflicts of interest to declare.

References
1. Turner J, Reid S. Munchausen's syndrome. Lancet 2002;359:346–9.
2. Dias JJ, Garcia-Elias M. Hand injury costs. Injury 2006;37:1071–7.
3. Penbegul N, Bozkurt Y, Yildirim K, Sancaktutar AA, Soylemez H, Atar M, et al. Multiple surgeries due to pneumaturia, cystolithiasis and neurogenic bladder in a case with Munchausen syndrome. Urol J 2014;11:1331-4.
4. Ando T, Nomura T, Sejiyama SY, Shin T, Mori K, Sumino Y, et al. Munchausen syndrome in the act of creating and enacting macroscopic hematuria. Urol Int 2014;93:371-2.
5. Pessina AC, Bisogni V, Fassina A, Rossi GP. Munchausen syndrome: a novel cause of drug-resistant hypertension. Hypertens 2013;31:1473-6.
6. Ameratunga R, Casey P, Parry S, Kenedi C. Hypogammaglobulinemia factitia - Munchausen syndrome masquerading as common variable immune deficiency. Allergy Asthma Clin Immunol 2013;9:36.
7. Nadelson T. The Munchausen spectrum: borderline character features. Gen Hosp Psychiatry 1979;1:11–7.
8. Chevalier X, Claudepierre P, Larget-Piet B, Lejonc JL. Münchausen's syndrome simulating reflex sympathetic dystrophy. J Rheumatol 1996;23:1111-2.
9. Prakash J, Das RC, Srivastava K, Patra P, Khan SA, Shashikumar R. Munchausen syndrome: Playing sick or sick player. Ind Psychiatry J 2014;23:68-70.
10. Vaglio JC, Schoenhard JA, Saavedra PJ, Williams SR, Raj SRJ. Arrhythmogenic Munchausen syndrome culminating in caffeine-induced ventricular tachycardia. Electrocardiol 2011;44:229-31.
11. Acartürk TO, Abdel-Motleb M, Acar F. How to kill a flap: munchausen syndrome - a silent trap for plastic surgeons. J Hand Microsurg 2014;6:42-4.
12. O'Connor EA, Grunert BK, Matloub HS, Eldridge MP. Factitious hand disorders: review of 29 years of multidisciplinary care. J Hand Surg Am 2013;38:1590-8.
13. Zibis AH, Dalilana ZH, Papaliaga MN, Vrangalas VA, Mouzas OD, Malizos KN. Munchausen syndrome: A differential diagnostic trap for hand surgeons. J Plast Surg Hand Surg 2010;44:222-4.
14. Kaya B, Alpat SE, Sonmez M, Cerkez C, Serel S. Munchausen's syndrome or pure self-mutilation? A case of self-inflicted tendon injury. Hand Microsurg 2014;3:83-6.
15. Rodriguez-Moreno J, Ruiz-Martin JM, Mateo-Soria L, Rozadilla A, Roig-Escofet D. Munchausen's syndrome simulating reflex sympathetic dystrophy. Ann Rheum Dis 1990;49:1010-2.
16. Graziano MSA, Cooke DF, Taylor CSR. Coding the Location of the Arm by Sight. Science 2000;290:1782–6.
17. Rossetti Y, Desmuer M, Prablanc C. Vectorial coding of movement: vision, proprioception, or both? J Neurophysiol 1995;74:457–63.
18. Balslev D, Nielsen FA, Paulson OB, Law I. Right Temporoparietal Cortex Activation during Visuo-proprioceptive Conflict. Cerebral Cortex 2005;15:166–9.
19. Balslev D, Millo RC, Cole J. Proprioceptive deafferentation slows down the processing of visual hand feedback. J Vis 2007;7:1–7.
20. Collins DF, Prochazka A. Movement illusions evoked by ensemble cutaneous input from the dorsum of the human hand. J Physiol 1996;496:857–71.
21. Collins DF, Refshauge KM, Gandevia SC. Sensory integration in the perception of movements at the human metacarpophalangeal joint. J Physiol 2000;529:505–15.
22. Johnson K. Closing in on the neural mechanisms of finger joint angle sense. Focus on "Quantitative analysis of dynamic strain sensitivity in human skin mechanoreceptors". J Neurophysiol 2004;92:3167-8.
23. Malahias M, Jordan DJ, Hindoche S, Khan W, Juma A. The development and future of reconstructive and microvascular surgery of the hand. Open Orthop J 2014;8:415-22.