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Needle Phobia in Cancer Patients: An Ignored Subject, a Nightmare for Cancer Patients

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Abstract: Needle phobia, the extreme fear of needles and needle procedures is often caused by a painful conditioning experience and maintained by avoidant behavior. Patients with needle phobia simply avoid health care due to fear of needles. Recently recognized as a medical-psychological condition, needle phobia presents a challenge in the treatment of cancer patients, who must undergo regular blood draws and other needle procedures. A detailed history of needle phobia should be taken at face value and patients with a history of vasovagal needle phobia should undergo needle procedures in a medical setting equipped to handle syncopal episodes. Strategies to reduce pain and anxiety during needle procedures are available but underused. Herein, we present the case of a 40 year old cancer patient with extreme needle phobia and describe the subtypes, pathophysiology and management of this condition.

Keywords: Needle Phobia, Immunization, Noncompliance, Syncope, Vasovagal Episode, Anxiety, Cancer

1. Introduction

Needle phobia, the extreme fear of needles and needle procedures can provoke distress and anxiety that interfere with medical treatment. Recently, needle phobia was recognized as a medical-psychological entity requiring medical attention. Unlike patients with other phobias, patients with needle phobia can have vasovagal responses that lead to fainting episodes and possibly death when confronted with their phobia. [1] Needle phobia especially presents challenges in cancer patients who must frequently receive injections and undergo blood tests during treatment. However, the prevalence of this condition in cancer patients is unknown. Herein, we discuss the subtypes of needle phobia, challenges and management of needle phobia in a patient with cancer (melanoma).

2. Types of Needle Phobia

The types of needle phobia include vasovagal, hyperalgesic type and classic needle phobia. Patients with vasovagal needle phobia are high-risk patients who must be managed in a medical setting. Before a needle procedure, patients have increased anxiety and experience a sudden rise in both heart rate and blood pressure that is followed by a sudden drop in blood pressure resulting in a fainting episode. During the fainting episode, patients may experience cardiac arrhythmia, which can lead to death. Electrocardiography during the vasovagal response may show sinus arrhythmia, first- and second-degree atrioventricular block, ST-segment changes, sinus bradycardia, sinus tachycardia, ventricular fibrillation, and/or asystole. [2] Twenty three deaths due to vasovagal needle phobia have been reported. [3] Needle phobia may have genetic underpinnings. About 80% of patients with needle phobia reported their first-degree relative having some kind of phobia. [4] In a study carried out in India, researchers found that the first-degree relatives of needle phobia patients had highest frequency of phobia followed by third degree relatives. [1]

Patients with hyperalgesic type needle phobia experience severe unbearable pain during needle procedures. One study in a tertiary clinic demonstrated that 10% of young patients had hyperalgesic needle phobia. [5]

Classic needle phobia which is usually seen in children

younger than six years [6] typically results from a traumatic or painful experience during a vaccination, blood draw, or needle procedure.

3. Pathophysiology of Needle Phobia

Understanding of the brain neuronal circuits involved in anxiety and fear is important, as this information will guide us to therapeutically target these circuits to control or reduce anxiety in patients with needle phobia. The main circuits involved in fear pathways arise from the sensory areas that process conditioned and unconditioned stimuli. The sensory stimuli coming from the thalamus and auditory cortex converge on the lateral nucleus of the amygdala and, through intramedullary connections, flow directly to the central nucleus. The central nucleus controls defensive behavior and autonomic and endocrine responses. [7] Recent studies' findings also suggest that the prelimbic cortex has a role in fear processing. [8] N-methyl-D-aspartate receptors are glutamate receptors in the lateral amygdala that use an ion channel protein found in nerve cells. Theses receptors are activated when glutamate and glycine (or D-serine) bind to them; once activated they allow positively charged ions to flow through the cell membrane, resulting in the detection of fear. Norepinephrine plays a major role in heightened fear, and dopamine contributes to the acquisition of fear. [9]

4. Case Report

A is a 40 year old woman with mild intellectual disability who was diagnosed with melanoma was scheduled for surgery to remove a tumor from her back. She had a history of needle phobia and had been avoiding medical care most of her life. Her family insisted that she receive treatment for her melanoma. She agreed to come to the hospital only if a patient advocate would accompany her during her clinic visits. Before surgery, the patient was sent to the laboratory for routine blood work. As soon as she realized that she was about to undergo a needle procedure, she became extremely distressed and started screaming, "I do not want to get blood drawn, I will rather die than have my blood drawn". The patient could not be calmed down and departed the laboratory with the patient advocate. Two days later patient returned to the psychiatry outpatient clinic escorted by the patient advocate, and repeated that she had a fear of needles and would die of melanoma rather than get her labs drawn. After two to three cognitive behavioral therapy sessions in the clinic and reassurance, the patient reluctantly agreed to have her blood drawn after the local application of topical anesthetic and receiving anti-anxiety medication.

5. Discussion

Needle phobia was first reported in 1995 by Hamilton [2] who found that the prevalence of needle phobia in the United States was 9%. Since then, the prevalence has increased with recent studies estimating it to be 22%. [10] Children are at higher risk for needle phobia than adults are; about 63% of children report having a fear of needles. [11] Needle puncture often the most painful experience children encounter during their medical care is one of the main reasons for vaccination noncompliance in the United States. [7] According to one study the rates of self-reported immunization noncompliance owing to needle phobia are 7% for adults and 8% for children. [8] In 2013, the Royal College of Anesthetics reported that about two thirds of children experience intense anxiety and fear before receiving an injection for anesthesia; if not addressed appropriately, such anxiety and fear can have short- term consequences such as increased agitation and higher pain levels and/or long-term consequences such as the development of needle phobia for life. [6] Because restraining children during vaccination may result in needle phobia, parents should ensure that their children's early experiences with needle procedures is pleasant and their children are not restrained during such procedures except in cases of emergency. Distraction and pain management are key to addressing needle phobia in young children. In terms of distraction, the use of Buzzy (a small device designed to look like a bumblebee that vibrates and whose soft plastic "wings" are detachable pouches containing freezable gel) has been successful. The unit is placed on the forearm proximal to the injection site. The vibrations and cold sensations Buzzy produces distract the child and dulls the pain sensation. Blowing bubbles, singing rhymes, reading stories, and playing video games and other distractive strategies are also helpful, as is the local application of a topical anesthetic one hour before the procedure. Newer modalities, such as drawing blood through a viral portal (a small device that uses a delicate vacuum to pull blood from capillaries instead of veins) reduce or eliminate pain. Antianxiety medications, such as lorazepam and alprazolam have also been used to reduce anxiety before needle procedures. Several pharmacotherapy regimens have been used to treat syncope in patients with needle phobia. Because serotonin plays a role in blood pressure regulation, specific serotonin reuptake inhibitors (SSRIs) may be helpful in avoiding or stopping a syncopal episode. [12] In a randomized double-blind placebo controlled study, the SSRI paroxetine was found to significantly improve symptoms in patients with refractory neuro-cardiogenic syncope, and similar results were seen with other SSRIs. [13] In a non-randomized trial of 74 patients Amitriptyline prevented syncopal episodes. [14] The non-pharmacological strategy of applying muscle tension has been used to effectively treat syncope in patients with needle phobia [15], and simple strategies, such as crossing and uncrossing legs may help prevent a fainting episode. [16, 17] Other strategies for avoiding syncope include psychotherapy and desensitization therapy. One study demonstrated that most cancer patients prefer oral chemotherapy administration to intravenous chemotherapy administration. [18]

6. Conclusion

Needle phobia in cancer patients can interfere with

treatment. Cancer patients who undergo multiple rounds of blood work during treatment need additional levels of care and support. Special attention must be given to cancer patients with vasovagal needle phobia. Clinicians at all levels should take needle phobia symptoms at face value while obtaining a comprehensive history of the phobia. Ensuring that clinicians are aware of needle phobia and ensuring that cancer clinics are equipped to care for these patients are of equal importance.

References

[1] Wani AL, Ara A, Bhat SA: Blood Injury and Injection Phobia: The Neglected One. Behavioural Neurology 2014: 471340.

[2] Hamilton JG: Needle phobia: a neglected diagnosis. J Fam Pract 1995; 41: 169-175.

[3] Jenkins K: II. Needle phobia: a psychological perspective. British journal of anaesthesia 2014; 113: 4-6.

[4] Orenius T, LicPsych, Säilä H, et al: Fear of Injections and Needle Phobia Among Children and Adolescents: An Overview of Psychological, Behavioral, and Contextual Factors. SAGE Open Nursing 2018; 4: 2377960818759442.

[5] Memon B, Hafeez-ur-Rehman, Saleh Muhammad S, et al: Prevalence of Needle Phobia among Young Patients Presenting to Tertiary Care Government Hospitals of Karachi, Pakistan, 2015.

[6] Emanuelson J: The Needle Phobia Page -A starting point for overcoming an important, but widely-ignored condition., 2016.

[7] Luthy K, Eden L, Macintosh J, et al: Minimizing pain during childhood vaccination injections: improving adherence to vaccination schedules, 2014.

[8] Taddio A, Ipp M, Thivakaran S, et al: Survey of the prevalence of immunization non-compliance due to needle fears in children and adults. Vaccine 2012; 30: 4807-4812.

[9] Steimer T: The biology of fear- and anxiety-related behaviors. Dialogues in clinical neuroscience 2002; 4: 231-249.

[10] Wright S, Yelland M, Heathcote K, et al: Fear of needles: Nature and prevalence in general practice, 2009.

[11] McMurtry CM, Pillai Riddell R, Taddio A, et al: Far From "Just a Poke": Common Painful Needle Procedures and the Development of Needle Fear. The Clinical Journal of Pain 2015; 31: S3-S11.

[12] Laferney MC: A psychiatric approach to vasovagal syncope, 2011.

[13] Stone KJ, Viera AJ, Parman CL: Off-label applications for SSRIs. American family physician 2003; 68: 498-504.

[14] Baris Kaya E, Abali G, Aytemir K, et al: Preliminary observations on the effect of amitriptyline treatment in preventing syncope recurrence in patients with vasovagel syncope. Annals of noninvasive electrocardiology: the official journal of the International Society for Holter and Noninvasive Electrocardiology, Inc 2007; 12: 153-157.

[15] Ost LG, Fellenius J, Sterner U: Applied tension, exposure in vivo, and tension-only in the treatment of blood phobia. Behaviour research and therapy 1991; 29: 561-574.

[16] Krediet CT, van Dijk N, Linzer M, et al: Management of vasovagal syncope: controlling or aborting faints by leg crossing and muscle tensing. Circulation 2002; 106: 1684-1689.

[17] Peterson AL, Cigrang JA: Management of vasovagal syncope: controlling or aborting faints by leg crossing and muscle tensing. Circulation 2003; 107: e198; author reply e198.

[18] Cox AC, Fallowfield LJ: After going through chemotherapy I can't see another needle. European Journal of Oncology Nursing 2007; 11: 43-48.