

Case Report

Dilemma Behind Post-Spinal Tetraplegia: Is Conversion Disorder Really the Culprit?

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Abstract:

The occurrence of intra-operative conversion disorder with tetraplegia in a patient undergoing emergency appendectomy under spinal anaesthesia has been described in this case report. A 19-year-old female patient was given spinal anaesthesia for an emergency appendectomy. She had a block up to the T10 level as per assessment. Following confirmation of sensory and motor blockade level, the patient became apnoeic and appeared to stop responding abruptly. Her vitals remained constant except for tachycardia. She was taken on bag and mask ventilation and preparation for endotracheal intubation was underway. The patient began to respond again after a few minutes of continual stimulation and bag mask ventilation. Rest of the perioperative period was uneventful. Postoperative psychiatry consultation was done, and she was diagnosed as a case of conversion disorder.

Keywords: Conversion disorder, spinal anaesthesia, tetraplegia

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Introduction

Conversion disorder (CD) is defined as a psychiatric illness in which symptoms and signs affecting voluntary motor or sensory function cannot be explained by a neurological or medical condition. Psychological factors, such as conflicts or stress are judged to be associated with the deficits. It has a presentation that suggests a neurologic or general medical condition. The pathology cannot be explained by available investigations, nor can it be attributed to anything else such as the patient's participation in culturally sanctioned behaviours (e.g., ceremonial trances) or substance consumption. There are four types of conversion disorder: those who have motor symptoms or deficits, those who have sensory symptoms or deficits, those who have pseudo-seizures, and

those who have a mixed presentation.^{1,2}

In the general population, the lifetime prevalence of CD has been estimated to be between 11 and 300 per 100,000 persons.² Isolated case report have highlighted the varied presentation of perioperative conversion disorder.² Patients with distinct features such as sudden onset, young age, female gender, low educational level, low socioeconomic status, neurological disorders with abnormal anatomical pattern, bizarre movements, and the presence of psychological features such as current or early diagnosis of a psychiatric disorder, or traumatic experience have been identified in published literature.^{3,4}

We present a case of acute intraoperative conversion disorder with tetraplegia that arose after spinal anaesthesia was administered. This is

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the first account of a CD presenting with symptoms of tetraplegia after spinal anaesthesia, to the best of the authors' knowledge.

Case Presentation

A 19-year-old female patient presented with a two-day history of fever and stomach pain, and she was diagnosed as a case of Acute appendicitis. She was nervous and concerned about the surgery, and she was counselled about it. The anaesthetic technique was explained to the patient. She gave her informed consent. Inside the operation theatre, routine monitoring equipment was attached. In the sitting position, spinal anaesthesia was conducted with a 26G Quincke needle, and 12.5 mg of 0.5% percent Bupivacaine (heavy) was administered intrathecally. The sensory and motor blockade were both evaluated and found to be at T10 level.

The patient was becoming concerned about the loss of motor power in her lower limbs at this time, and she was told that she would regain full functionality within a few hours. She then abruptly closed her eyes and stopped answering. Stimulation elicited no response. There was tachycardia in the range of 150 beats per minute. The blood pressure and saturation levels were both normal. As there was absence of respiratory efforts, she was placed on bag mask ventilation. Despite the patient being apnoeic, saturation was maintained throughout. This episode lasted for around 7 mins. Subsequently, the patient's respiratory efforts resumed, and pulse began to settle, and she opened her eyes. She described her entire body as being paralysed and her inability to respond to verbal commands. Her vitals remained stable throughout the surgery, and the rest of the procedure went smoothly. Within four hours, she was transferred out in a stable state and had restored all motor and sensory functions in both lower limbs.

After surgery, the patient was evaluated by a psychiatry unit due to inexplicable symptoms. The patient underwent a thorough history and mental status examination, during which it was discovered that the patient had been experiencing sudden episodes of intense fear, as well as palpitations, sweating, trembling, shortness of breath, and the feeling that she was about to die. "I THINK I'M GOING CRAZY," she said of herself. These episodes were abrupt and episodic occurring rarely once in a month or not at all from past 3-4 months and often during the episode,

patient experienced a sudden onset generalized weakness, unable to move her arms and legs, lasting for a few minutes, not associated with any residual weakness, with full gain of functionality of pre-morbid level. Further it was discovered that her parents had recently separated one year back, following long spells of verbal violence against each other. In Mental Status Examination (MSE), general appearance and behaviour was normal with perplexed facial expression. In thought content, patient was pre-occupied with her anxiety symptoms and family problems. Her physical, neurologic workup was unremarkable, and neuroimaging (MRI Brain) and laboratory parameters were also within normal limits. Patient was classified as a case of Conversion Disorder and was prescribed a *Selective serotonin reuptake inhibitor (SSRI)* with supportive benzodiazepines (Tab. Escitalopram 10 mg once along with Tab. Etizolam 0.5 mg twice a day) with psychotherapy sessions planned for subsequent follow-ups.

Discussion

Conversion disorder, also known as functional neurological symptom disorder, is a psychiatric illness characterised by symptoms and signs that are not explained by a neurological or medical problem and impact voluntary motor or sensory function⁵. The term "conversion" refers to the substitution of a somatic symptom with a repressed idea. Monoparesis, hemiparesis, paraparesis, altered sensorium, visual loss, pseudocoma, seizure-like behavior, irregular gait, aphonia/dysphonia, lack of coordination, or odd movement disorders are all symptoms of conversion disorder. Patients are not attempting to imitate symptoms, rather they are experiencing them.⁶ Our patient was anxious about anaesthesia and surgery prior to surgery, and she was concerned intraoperatively about the lack of motion in her lower limbs when spinal anaesthesia was administered.

The possibility of high spinal can be ruled out as the patient did not go into bradycardia, hypotension, or low saturation.⁷ In fact, tachycardia was noted, and she was taken on bag and mask ventilation as a precautionary measure. After regaining complete consciousness, the patient described feeling paralysed or trapped in her body, as well as breathing difficulties. She was given 1mg Midazolam after ensuring that normal function had returned to her upper limbs and that she was completely cognizant, after which she fell asleep.

Following general anesthesia, there has been case reports of plegia (hemi/para) that led to complete recovery.⁸ Many significant stressor events were associated with anxiety episodes in this case, eventually leading to conversion symptoms at the sub-conscious level, but they went unnoticed, and no psychiatric consultation was sought, ultimately leading to precipitation during the operative period.

A search into literature revealed isolated case reports of respiratory arrest after spinal anaesthesia in parturients^{9,10}. Subdural block, drug impurities, neuraxial opioids and oxytocin, all have been attributed as possible cause for such event, but the dilemma remains unsolved. However, in our case, short duration of the episode in presence of haemodynamic stability and unremarkable neurologic workup precludes these possibilities and point more in favour of conversion disorder.

Conversion disorder demands a multidisciplinary approach to treatment. Psychotherapy, physical therapy, and stress management are all vital components, as is timely referral to psychiatric services. Care professionals must be aware of the patient's current life circumstances, previous stress responses, and current support systems. Stressful life experiences have been documented

to precipitate conversion disorder, which can be acute (lasting only a few hours to days) or chronic (lasting weeks or months). There is no set age for this condition, and it affects both adults and children. To be able to foresee such situations, it is critical to have a complete psychiatric evaluation during the preanesthetic workup which may help identify high risk patients for conversion disorder. Anaesthetists sometimes overlook psychiatric issues which may lead to most unusual events as seen in our case also.

Conclusion

To conclude, psychiatric disorder may be a rare cause of neurologic deficit following spinal anaesthesia and should be made part of a complete pre-anaesthesia workup. Intraoperative Conversion disorder should be considered in cases with unexplainable symptoms not attributable to medical disorder or anaesthesia related complications.

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