

## Urologic Presentation and Risk Factors in Pediatric Functional Neurological Symptom Disorder: A Case Report

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### ABSTRACT

Diagnosis and treatment for Functional Neurological Symptom Disorder (FND) is often complicated by the insidious nature of clinical presentation, especially in the pediatric presentation. This case depicts an adolescent male who presented for an overdose secondary to ongoing FND symptoms. The patient had concurrent urinary retention leading to infection and transfer to the emergency department. He was subsequently discharged home with minor changes made to his treatment plan. This case highlights a unique representation of a somatic symptom disorder with physiologic presentation, which depicts the importance of recognizing risk factors in the pediatric population. Better recognition of at-risk patients could improve treatment options, outcomes, and minimize time to diagnosis and disruption in care.

**Keywords:** Functional Neurological Disorder (FND), Conversion Disorder, Urinary Retention, Psychosomatic, Pediatric Urology

### Introduction

Functional Neurological Symptom Disorder (FND) is also known as conversion disorder. It consists of motor or sensory deficits stemming from a functional, rather than physiologic or structural cause (Bennett *et al.*, 2021). An unconscious conflict manifests as a somatic, or physical, presentation (Stonnington *et al.*, 2006). FND is characterized by altered voluntary motor or sensory function, incompatibility between the symptoms and known neurological/medical conditions, deficit may not be better explained by another disorder, and the deficit may cause clinically significant distress in social, occupation, or other areas of functioning (Lehn, 2015). The condition is ambiguous and not often encountered, making it difficult to diagnose and treat. As per the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-V), a diagnosis of FND requires medical evidence that the symptomology is incompatible with a neurologic disease and is not simply a diagnosis of exclusion. Practitioners should not base diagnosis on one clinical finding but need to evaluate the patient based on the entire clinical picture (American Psychiatric Association, 2013). Due to the diagnostic difficulty, patients often suffer from substantial gaps in medical care (O'Neal and Baslet 2018). Better recognition of

FND components, risk factors, and symptoms can help bridge these gaps and improve patient outcomes. It is important to understand the various components and coexisting medical issues in pediatric patients with FND to foster more accurate diagnosis and treatment.

## Case Description

This patient is a 16-year-old Caucasian male who presented to the child and adolescent pediatric unit (CAPU) for suicidal attempt via overdose on antihistamines. The patient stated this was triggered by a paralytic episode in his lower extremities at school. The spontaneous, intermittent lower extremity paralysis originally started six months prior during the postoperative period following laparoscopic appendectomy. He stated that these episodes are often preceded by a brief period of numbness, weakness, and tingling, at various times throughout the day, usually at school or in the hospital, with spontaneous resolution at home. He also reports concurrent urinary retention with the need for frequent catheterization, erectile dysfunction, and pelvic pain, which began around the same time as the paralytic episodes. After extensive neuropsychiatric and urologic workups at a local children's hospital, a clinical diagnosis of Functional Neurologic Disorder (FND) was made.

On CAPU admission day one, the patient interview revealed a basic understanding of his symptomology and that FND entails a disconnect between the mind and body. He indicated his decision to consume antihistamines was impulsive and not a suicide attempt. The patient experienced continuous frustration with his symptoms because of the limitations it posed on his active lifestyle. His vital signs were within normal limits with a blood pressure of 102/84 mmHg, heart rate of 70 bpm, temperature of 97.6 deg F, respiratory rate of 18 breaths/min, BMI of 21.3 kg/m<sup>2</sup>, and oxygen saturation of 99% on room air. The physical exam was significant for 0/5 muscle strength in bilateral lower extremities, inability to walk or stand, and the need for a wheelchair and support from unit staff. He also reported moderate suprapubic tenderness and the inability to void urine for more than 24 hours. A subsequent bladder scan showed a post-residual volume (PVR) of 380 cc. A transurethral catheter was placed for bladder decompression. The following day, he was able to ambulate without assistance and played sports outdoors with his peers. He also passed the void trial after the catheter was removed. On day three, the lower extremity paralysis and urinary retention returned, prompting the patient to request wheelchair assistance. He refused further medical management and was subsequently provided with psychotherapy, safety planning, and behavioral monitoring. Unfortunately, the patient experienced increasing pelvic pain with worsening urinary retention, prompting consultation and transfer to the Emergency Department.

The patient was diagnosed with a Urinary Tract Infection (UTI) following laboratory analysis, bladder scans, and abdominal ultrasound. He was started on Trimethoprim-Sulfamethoxazole 400-80mg

Q12Hr for 10 days (White, 2011). Patient was advised of repeat bladder scans and possible need for self-catheterization until transfer to a specialty hospital. Although he refused medication management for FND, a trial of Venlafaxine XR 37.5 mg PO daily was recommended (Kroenke *et al.*, 2006). The patient improved with physical rehabilitation but experienced worsening of symptoms when asked to return to school. In addition to the aforementioned recommendations, the treatment team advocated for cognitive behavioral therapy, identification of triggers, medical management, and conflict resolution.

## Discussion

Studies indicate FND can occur in all age groups, although rarer in patients under 10 years of age (Bennett *et al.*, 2021). With an estimate of 12 new cases per 100,000 per year, FND disproportionately affects women compared to men (at 3:1) but the reported cases for men increases proportionately with age (Bennett *et al.*, 2021). A 2019 study indicates that many pediatric patients were adolescent girls with seizure or stroke like symptoms (Watson *et al.*, 2019). The adolescent age of this male patient in our case demonstrates deviation from these statistics. It is important to recognize the additional risk factors that can contribute to a patient's likelihood of developing FND. The identifiable triggers are often not of a catastrophic nature, despite common perception, and are more frequently related to family, school, or relationship conflicts (Watson *et al.*, 2019).

Functional Neurological Symptom Disorder is believed to be linked to improper cortical connections and disruption in the anterior cingulate cortex, orbitofrontal cortex, and the limbic regions of the brain (Stonnington *et al.*, 2006). Our patient has a history of binge drinking and recreational drug use at a young age of 13, likely negatively impacting his developing brain. The patient also has a family history of psychiatric illness, which has been shown to be a contributing factor for the development of FND (Stonnington *et al.*, 2006). Additionally, individuals with conversion symptoms often report physical or sexual abuse in their history, which is also present in our patient's past (Stonnington *et al.*, 2006). The patient comes from a background laden with familial disruption and dysfunction. With a family history of substance abuse, involvement with social services, lack of visitation with his parents and recent loss of a father figure, the patient learned to suppress his emotions and become self-sufficient early in his childhood. Failure of interoception, which is when visceromotor responses to emotional stimuli are not properly perceived, is a key component of FND (Pick *et al.*, 2019). By avoiding his feelings, this patient likely blunted his emotional processing and contributed to the development of FND. Minimizing life stressors and the ongoing accumulation of these events over time led to a conversion reaction (Stonnington *et al.*, 2006). Additionally, our patient utilized outdoor activities and time with friends as a coping mechanism. This became nonexistent due to the COVID-19 pandemic, further increasing the risk of developing FND.

This patient has a history of alcohol abuse, recreational drug use, sexual abuse, and grief, in addition to maladaptive relationships in the household. While these risk factors may predispose him to FND, the association with chronic urinary retention was unclear (Watson *et al.*, 2019; Bennett *et al.*, 2021). Although research suggests the status of urinary retention as a type of FND is uncertain, studies have also recognized that chronic urinary retention is a possible symptom of the disorder since the 1880's (Bennett *et al.*, 2021). This means urinary retention should not be treated as a separate entity in patients presenting with FND symptomology. Acute or chronic urinary retention is an uncommon diagnosis in the pediatric population, especially adolescent males, as seen in this case (Wan *et al.*, 2010; Fowler *et al.*, 1988). This speaks to the importance of greater recognition of psychogenic causes of urinary retention and the need for understanding it as a symptom of a larger disorder, such as FND. Had this correlation been recognized earlier, a formal diagnosis may have been made sooner in this case.

## Conclusion

This case illustrates a unique presentation of a somatic symptom disorder with concurrent urinary retention. Had the time to diagnosis been shortened, our patient may have developed better coping skills to manage the frustration of his condition. Likewise, a better understanding and awareness of these risk factors would hopefully minimize the disruption in patient care and foster more continuity of medical management. Not only can FND present with physical, as well as somatic, symptoms; it is a diagnosis that should not be immediately ruled out in the presence of urinary problems in a pediatric patient.

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