Recurrence UTI in Spinal Cord Injury, after Revision of Mitrofanoff Procedure: A Case Report

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Key Words
Mitrofanoff, recurrent urinary tract infection, neurogenic bladder

Introduction
Spinal cord injury (SCI) can result in neurogenic bladder, a condition that can be very distressing and difficult to manage for the patient. Urinary tract infections (UTIs) are common and an unfortunate complications of neurogenic bladder. This is due to many factors including the need for self-catheterization, high pressure voiding and the failure to completely void.1 Urinary diversion procedures such as the Mitrofanoff procedure have become mainstream in addressing the long term complications of a neurogenic bladder. The Mitrofanoff procedure specifically the use of the appendix to create a continent catheterizable vesicostomy into the bladder. Common long-term complications for the procedure include bladder stones, abdominal absences, and leakage around the bladder neck and stoma stenosis.2

We describe a case of a patient who underwent a Mitrofanoff procedure with revision that presents with recurrent episodes of fever and urinary tract infections.

Case Report
A 42 year old female with CS ASIA A spinal cord injury and history of neurogenic bowel and bladder, intermittent autonomic dysreflexia and chronic healing stage 4 sacral ulcer underwent a Mitrofanoff procedure one year after initial injury. A stoma revision with more cephalad positioning was done two years later to eliminate the need for self catheterization from the initial site which was lower on the abdomen. The patient was then taking Levofloxacin with no relief, and continued to have purulent material with more cephalad positioning was done two years later to eliminate abdominal abscess, and leakage around the bladder neck and stoma stenosis.3

The patient's symptoms did not improve and she was hospitalized on 2 additional occasions for urinary tract infections with symptoms of fever and chills. During the last admission, the patient was taking Ciprofloxacin with no relief, and continued to have purulent material draining from both Mitrofanoff sites. The urine lab was positive for a urinary tract infection and culture grew E. Coli. CT scan of the abdomen and pelvis showed no abdominal abscess, no osteomyelitis of sacral bone but 2 interconnected fistulas formations to the anterior body wall (Fig 1). These fistulas represented the initial urinary diversion and the revision. The patient was started on sensitive IV antibiotics and was discharged on a 10 day course with resolution of symptoms.4

Discussion
The described pattern of illness was due to recurrent urinary tract infections that became resistant to most oral antibiotics. The patient had E. coli growth in urine culture on multiple occasions during clinic visits and post discharge. The patient's low grade fevers and malaise resolved after use of intravenous antibiotics to treat the urinary tract infection.

The Mitrofanoff procedure is indicated in spinal cord injuries with neurogenic bladder in order to avoid morbidity urorologic consequences such as chronic renal failure and high intravesical pressures.5-14. In a study by Touma et al, all 12 patients who were followed for a mean of 2.8 years reported being very satisfied with the procedure. This study also reported that preoperatively 9 of the 12 patients reported having at least 1 urinary tract infection annually. Post-operatively only 2 patients reported having more than 1 urinary tract infection after the procedure.6 These patients reported an improvement in the incidence of these infections compared to their baseline.7 In a 2008 Shavedan et al., reported only 2 of the 29 patients in their studies reported more than 1 urinary tract infection per year in a mean follow-up time of 126 months.8

The incidence of successful catheterizations of the stoma after the Mitrofanoff procedure is reported to be from 91-100%.9-10. In recent studies stenosis rates have ranged from 7% to 25% and bladder calculus have been calculated in a range from 5% to 100%.11,12 Diversion revisions are a common occurrence associated with the Mitrofanoff procedure. There have been reported incidences of stoma related revisions ranging from 16-20%.13 Recurrent urinary tract infections are a commonly specified complication of the Mitrofanoff procedure.

Conclusion
The case reported here was an example of a fistula formation between the initial urinary diversion and the revision which resulted in recurrent urinary tract infections and bacteremia. This is an uncommon complication in a patient with Mitrofanoff diversion with revision.

References