

# Lower urinary tract symptoms secondary to mass lesion of the brain: A case report

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### ABSTRACT

Intracranial mass lesions presenting secondary to neurologic disorders are well established but are rarely causes of lower urinary tract symptoms (LUTS). Only a very few cases were described in the literature. We present a 64-year-old woman with urinary urgency, frequency, and incontinence, which were secondary to a large meningioma along the anterior falx. New-onset neurologic symptoms presenting as any unusual clinical presentations of LUTS should be explored to rule out potentially treatable causes before making decisions for uro-gynecological interventions.

**Key words:** Brain tumor; frontal lobe; lower urinary tract symptoms; neurologic disorder.

### Introduction

Urinary complaints represent a spectrum of diseases which can be divided into overactive bladder symptoms like outlet obstruction symptoms such as poor stream and difficult voiding<sup>[1]</sup> or lower urinary tract symptoms (LUTS) such as frequency and urgency. Condition like diabetes mellitus is a well-known cause of LUTS. An intracranial mass lesion presenting as LUTS has been very rarely described in the literature. Here we present a patient with complaints of urinary urgency, frequency, and incontinence who was almost posted for a uro- gynecological intervention for the same and it turned out to be secondary to a large meningioma along the anterior falx which once removed resolved all other urological symptoms.

### Case Presentation

A 64-year-old woman P<sub>(2+0)</sub>, postmenopausal for 9 years, presented to the outpatient department (OPD) with complaints of increased frequency of urine for the past 1 month. She had been to two gynecologists previously

and was treated with antibiotics on the basis of symptoms and the second gynecologist also diagnosed her with a cystocele which may be the cause of the recurrent urinary tract infection and was advised corrective surgery. However, she presented to our facility for a second opinion and further management. She is diabetic on regular medications.

She also experienced urinary incontinence whose frequency had increased overtime. There was associate history of incoherent speech and fecal incontinence in addition to sluggishness and poor gait.

Examination revealed a conscious, oriented with clear sensorium patient who had a slight nominal dysphagia. She also had unsteadiness of gait and alteration in behavior. There was loss of apathy and she had a tendency to fall to the right while walking. Her sugars checked at multiple times have been normal.

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The vital signs and Glasgow Coma Scale remained within normal limits. Respiratory and cardiovascular systems were normal. Per abdomen was soft and there was no mass palpable. On local examination of the perineum, there were no significant findings. Per speculum examination showed a Grade 1 cystocele; cervix was healthy on naked eye examination. Bonny's test was negative and there was no dribbling of urine on cough impulse. On vaginal examination, the uterus was normal size, non-tender, normal mobility, and there was no mass felt in either of the adnexa.

Neurologist's review confirmed the above findings and requested for magnetic resonance imaging (MRI). MRI done showed a large well-defined lobulated extra-axial lesion in the right para median frontal region suggestive of a meningioma along the anterior falx. It was causing a mass effect in the form of indentation on the falx and focal midline shift to the left compressing the frontal horn of both sides with edema in the adjacent right frontal lobe.

She was referred to a neurosurgeon and underwent right frontal craniotomy and excision under General Anesthesia (GA). She was on antibiotics, analgesics, antacids, antiepileptics, and anti-cerebral edema measures. She was in intensive care for a few days and extubated after 2 days of surgery. Postoperatively, she showed improved neurological status and no incontinence. She was followed up in the OPD and found to be asymptomatic in terms of behavioral and urinary symptoms.

## Discussion

Women presenting with various types of LUTS has become very common. There are various causes of LUTS, ranging from neurological, anatomical, inflammatory, infectious, psychogenic, or idiopathic etiologies.

LUTS presentation, due to an intracranial mass lesion, is an infrequent but a well-established cause. The syndrome of urinary frequency, urgency, and urinary incontinence in association with frontal mass lesions was first described in 1964, by Andrew and Nathan where they implicated the antero-medial portion of the frontal lobe including the anterior cingulate gyrus.<sup>[2]</sup> Subsequently, Maurice-Williams found in his study that 7 of 50 consecutive patients with frontal lobe tumors had associated LUTS.<sup>[3]</sup> Few other isolated case reports which include a similar kind of syndrome have also been mentioned as a part of literature.<sup>[4]</sup> Any patient with LUTS should be worked up with relevant medical history, symptom scoring, focused physical examination urinalysis, and so on. Standard treatment for uncomplicated

LUTS includes behavior modification, lifestyle changes, bladder training, and medical management. Persistent bothersome symptoms should be assessed with a specialized management, which includes detailed LUTS questionnaires, urodynamic studies, and post-void residual urine.<sup>[5]</sup> Imaging is not routinely recommended except for cases with suspicion of upper urinary tract involvement.<sup>[1]</sup> In LUTS, patients with neurogenic symptoms, urethrocytostcopy and/or cytology is also recommended to detect urethral strictures, stones, and bladder tumors which can mimic neurologic disorder.<sup>[5]</sup> A routine brain or spinal cord imaging in these patients is not indicated or there is no evidence to support unless clinically indicated as in our patient with new-onset alteration of behavior or problems in walking or balancing along with increased urinary symptoms.<sup>[5]</sup>

## Conclusion

LUTS presenting as frontal mass lesions of the brain are not so common. Initial work-up and management of patients presenting with LUTS should not be limited to urine analysis or even treatment with multiple antibiotics if the symptoms persist. Proper clinical examination of the patient along with a detailed history of coexisting recent problems would give a better outlook on how to deal with the case further. Neurologic symptoms, which could present as unusual clinical presentations, should be explored to rule out rare and potentially treatable causes of LUTS. This will not only prevent syndromic treatment but also avoid unnecessary surgery like it was suggested in this described case. We describe a case of urinary urgency, frequency, and incontinence secondary to a large meningioma that was resolved upon resection of the implicated mass.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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