

A Case Report of Nutcracker Syndrome Appearing as Varicocele.

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ABSTRACT

In paediatrics, Nutcracker Syndrome (NCS) is a rare diagnosis. It is brought on by the Left Renal Vein (LRV) being squeezed between the Superior Mesenteric Artery and the Abdominal Aorta (SMA). In this article, we describe a case of Nutcracker Syndrome (NCS) in a 16-year-old man who had intermittent macroscopic hematuria, suprapubic discomfort, and a scrotal lump at the time of presentation. His physical examination revealed a left varicocele and a right, non-tender cyst. Imaging tests were performed on the patient, and the results were compatible with Nutcracker syndrome. This is a rare instance of a paediatric illness that is underreported or uncommon, and it emphasises the need for further research, adequate imaging, and the inclusion of nutcracker syndrome in the differential diagnosis.

INTRODUCTION

When the Left Renal Vein (LRV) is pinched between the abdominal aorta and the Superior Mesenteric Artery (SMA), a condition known as NCS—which is uncommon

in pediatrics—occurs [1,2]. Just a few cases of varicocele-related Nutcracker Syndrome have been documented, despite the fact that 15% to 20% of male adolescents between the ages of 14 and 18 have varicocele [3].

Case presentation

A 16-year-old male patient came to the emergency room complaining of minor suprapubic discomfort and sporadic episodes of macroscopic hematuria for a week. He had a BMI of 23.1 and no prior medical history. He has a right-sided scrotal tumour that has been there for two months without any discomfort. He denied having a fever, back discomfort, frequent urination, penile discharge, a history of sex, weight increase or loss, or dysuria.

He had a right-sided, cystic scrotal tumour and left scrotal fullness, according to the clinical examination. His CBC, CMP, and UA test results were within normal ranges, and there were no infections or symptoms of blood in the urine at the time of the ER visit. Gross hematuria, suprapubic soreness, and a non-tender scrotal lump are symptoms that might present with a wide range of potential diseases. The following conditions: testicular cancer, benign varicocele, orchitis, UTI, epididymitis, kidney stones, and renal vein thrombosis. From a doppler ultrasound (US) of the scrotum revealed a left varicocele with normal venous and artery outflow (increased in size with Valsalva). The US

Results and discussion

El Sadr and Mina originally documented the symptoms of LRV compression caused by the aorta and SMA in 1950 [8]. Schepper later referred to this condition as “Nutcracker syndrome” in 1972 [9]. The nutcracker phenomenon is a radiologic finding of LRV compression without clinical indications or symptoms [10]. The primary cause of Nutcracker syndrome is compression of the LRV by the SMA and abdominal aorta. This compression causes LRV venous congestion, which can cause signs and symptoms include varicocele, hematuria, stomach discomfort, pelvic congestion, and proteinuria [10]. During blood flow-increasing activities (like exercise) and in those with low BMI, these symptoms may get worse [11, 12]. Adults frequently get NCS in their but it can happen at any moment [11]. second and third decades.

The therapeutic importance of NCS in patients who have varicocele is that conservative therapy and/or closure of the left spermatic vein do not seem to be a long-term cure since the varicocele and the discomfort are likely to reoccur. Because they no longer have the spermatic vein, the symptoms following a recurrence are occasionally severe than they were before the treatment [13,14]. The management of children is made more difficult by these results [13]. The absence of diagnostic criteria and the hazy, non-specific presenting symptoms of NCS make diagnosis challenging. Imaging techniques are essential for identifying the anatomic abnormalities at the heart of NCS. Doppler US, abdominal-pelvic CT, MRI, retrograde venography, and intravascular ultrasound are the imaging modalities that are used the most frequently.

US [8,15]. Scrotal doppler US can be performed as a preliminary step to help rule out torsion and identify a varicocele in individuals who present with varicocele on physical examination (one of the earliest indications of nutcracker syndrome) [8]. A varicocele signals that more imaging is necessary.

A screening abdominal US can also be done if there is a clinical suspicion of NCS. Contrast CT and/or MRI are the most accurate imaging techniques to see the left renal vein and help diagnose NCS. There is disagreement on the aortomesenteric angle required to establish NCS when analysing imaging findings. Between 35 to 41 degrees have been reported as the angle [6,7]. The results of are also seen on CT and MRI.

Depending on the condition, treatment for NCS might range from monitoring and weight gain to nephrectomy.

seriousness [2]. There is no agreement on the best course of therapy because there aren't enough controlled trials done on children and adolescents, however conservative treatment is often used for kids under 18 [2]. An invasive intervention might be considered if the symptoms last longer than one to two years. It has been demonstrated that symptoms of SMA spontaneously disappear with weight gain to increase fat and fibrous tissue near the site of the condition.

[12,16]. Cycling in particular should be avoided if you have hematuria [10]. Surgery might be considered in contrast to adults after six months of ongoing symptoms [6,15].

There are no set rules for whether surgical method is the most successful if observation or conservative therapy fail. Nephrectomy, reno-caval implantation, transposition of the LRV, and/or SMA are a few of the alternatives available.

[8,12]. These treatment options for adolescents under 18 who have varicocele are invasive and poorly researched. A left spermatic vein ligation is the most frequent therapy for

varicocele, however it is not recommended for young patients with concomitant NCS since a varicocele is likely to return [13,14]. Research into novel methods, such as the anastomosis of the spermatic vein, is continuing.

Conclusion

Conclusion A rare cause of varicocele in children is NCS, which has a wide range of symptoms that might appear. A high score of For an early diagnosis, suspicion, a wide differential, and suitable imaging techniques are required. A cautious strategy, or observation, should be used with paediatric patients at first, progressing to surgical procedures as needed for kids who have chronic symptoms. It is advised that guys between the ages of 14 and 18 who exhibit varicoceles have their NCS tested. MRI/CT while in the ED, if symptomatic. If the patient has no symptoms, an outpatient MRI should be performed, followed by urologist or vascular surgery.

The significance of screening is that if there is underlying NCS, varicoceles may recur following surgical treatment.

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