Diagnostic Management Of Nutcracker Syndrome

**Nykonenko A.¹, Procza R. M. ², Pertsov I.¹, Nykonenko O.¹**

¹Ukraine, Zaporizhzhia Medical University; ²Poland, Warsaw, Medical University of Warsaw

**ABSTRACT**

**BACKGROUND**

Nutcracker syndrome (NS) is a symptomatic condition caused by compression of the left renal vein by the aorta and superior mesenteric artery or by the aorta and vertebral column. The goal of our study was to develop an algorithm with NS and develop the diagnostic algorithm.

**PURPOSE**

To analyze patients with NS and develop the diagnostic algorithm.

**MATERIAL AND METHODS**

There were 31 patients, 27 women (87.1%) and average age was 43±14.3 years. 67% of patients were symptomatic.

**RESULTS**

We use the diagnostic algorithm to exclude other diagnoses, due to the fact that the cause of the symptoms in 13% is other disease.

**DISCLOSURES**

- The final method of diagnostic of NS is CT.
- The variety of symptoms is caused by blood outflow into different areas - pelvic, vertebral or bowel. The diagnostic algorithm of NS should be performed to exclude other diseases.

**CONCLUSION**

- Some examples of “delayed treatment”

Figure 2: Venous hypertension is the cause of clinical presentation

Figure 4: CT angiography, A – Pregnancy, 32 weeks, significant abdominal pain, posterior NS; B – Pregnancy, 30 weeks, significant abdominal pain, anterior NS, thrombosis of varicose pelvic vein.

After analyzing CT data we concluded that clinical manifestation depends on the localization (Figure 2) of venous hypertension (VH). VH in vertebral vein (or azygos v.) (1) leads to pain/discomfort in the spine, VH in suprarenal vein can make changes in adrenal gland (2), VH in LRV leads to varicose transformation of intrarenal veins (3), reflux in v. ovarica to pelvic congestion Snr (4) and formation of portal hypertension (5) in case of collateral formation between v. ovarica and the portal vein.

Table 1: Complaints

<table>
<thead>
<tr>
<th>Complaint</th>
<th>%</th>
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<tbody>
<tr>
<td>Abdominal pain</td>
<td>90.4</td>
</tr>
<tr>
<td>Left upper quadrant</td>
<td>33.3</td>
</tr>
<tr>
<td>Pain aggravated by physical activity</td>
<td>33.3</td>
</tr>
<tr>
<td>Flank pain</td>
<td>74.2</td>
</tr>
<tr>
<td>Microhемaturia</td>
<td>25.6</td>
</tr>
</tbody>
</table>

NS is a symptomatic condition caused by compression of the left renal vein (LRV) by the aorta and superior mesenteric artery or by the aorta and vertebral column.

Was first defined anatomically by Grant in 1937

- Increased pain/discomfort in the spine
- Microhемaturia
- Abdominal pain
- Flank pain
- Decreased proteinuria
- Microrenal hypertension

Some examples of “delayed treatment”

- The final method of diagnostic of NS is CT.
- The variety of symptoms is caused by blood outflow into different areas - pelvic, vertebral or bowel.
- NS diagnostic algorithm should be performed to exclude other diseases.
- NS syndrome probably is underestimated.