HOW TO HANDLE INCIDENTAL MESENTERIC ABNORMALITIES AND LYMPH NODES SEEN ON MDCT

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SCBT/MR 2010
San Diego, California
March 7, 2010
17:00-17:10
CT WHIRL SIGN

- First described in 1981: the small bowel loops encircling the SMA creating a whirl-like pattern
- Twist usually clockwise-degree of circulatory impairment depends on tightness of twist
- Traditionally has meant SB volvulus
CT WHIRL SIGN

- Small bowel encircling central vessels and twisting ≥ 90° sensitivity of 64% for small bowel volvulus
- Most cases of small bowel volvulus had a whirl sign ≥ 180°
- Most whirl signs prove not to be indicative of volvulus but often seen in patients with prior abdominal surgery.

33 of 1,493 scans shows the whirl sign
> 90° radius of the whirl
11 of 33 were shown to have volvulus
True volvulus usually show a radius > 180°
Previous surgery and internal hernias decrease PPV of this finding

Gollub JCAT 30: 25-32, 2006
INCIDENTAL MESENTERIC ABNORMALITIES
MISTY MESENTERY: DIFFERENTIAL DIAGNOSIS

- Mesenteric edema
- Lymphedema
- Inflammation
- Hemorrhage
- Neoplasms
- Mesenteric panniculitis
MESENTERIC PANNICULITIS

- Liposclerotic mesenteritis
- Mesenteric lipodystrophy
- Mesenteric lipomatosi
- Retractile mesenteritis
MESENTERIC PANNICULITIS

- Non-specific inflammation of the mesenteric adipose tissue with acute inflammatory changes and fat necrosis
- Chronically, when fibrosis is dominant – called retractile mesenteritis
MESENTERIC PANNICULITIS

- Unknown etiology
- Related to trauma, ischemia, infection
- Related to vasculitis, granulomatous disease, pancreatitis, and malignancy
- Prevalance of 0.6%, usually as an incidental finding in middle or late adulthood
MESENTERIC PANNICULITIS: CT FINDINGS

- Mass of increased-attenuation mesenteric fat often containing small soft-tissue nodes
- Maximum transverse diameter directed toward the left consistent with the orientation of the jejunal mesentery
- Infiltrated fat engulfs the mesenteric vessels and displaces adjacent bowel loops without invading them
MESENTERIC PANNICULITIS:
CT FINDINGS

- Hypodense cyst-like areas and calcifications due to fat necrosis are rare.
- 2 specific signs: “tumoral pseudocapsule” (60% of cases) and “fat ring” sign of a hypodense fatty halo surrounding mesenteric nodules and vessels (75%).
MESENTERIC PANNICULITIS: CT FINDINGS

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MESENTERIC PANNICULITIS IN THE ONCOLOGY PATIENT

- Co-existence of neoplasms especially lymphoma, GI and GU adenocarcinomas in up to 69% of patients with MP
- PET if negative excludes tumoral mesenteric involvement
- PET if positive suggests coexisting metastatic deposits especially in patient with lymphoma

## Lymph Node Size: Upper Limits of Normal

<table>
<thead>
<tr>
<th>Lymph Node Location</th>
<th>Upper Limit</th>
</tr>
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<tbody>
<tr>
<td>Retroperitoneal</td>
<td>10 mm</td>
</tr>
<tr>
<td>Mesenteric</td>
<td>9 mm</td>
</tr>
<tr>
<td>Common Iliac</td>
<td>10 mm</td>
</tr>
<tr>
<td>External Iliac</td>
<td>10 mm</td>
</tr>
<tr>
<td>Internal Iliac</td>
<td>7 mm</td>
</tr>
<tr>
<td>Obturator</td>
<td>8 mm</td>
</tr>
<tr>
<td>Superior Rectal</td>
<td>5 mm</td>
</tr>
<tr>
<td>Pararectal</td>
<td>3 mm</td>
</tr>
<tr>
<td>Inguinal: Deep/Superficial</td>
<td>10 mm</td>
</tr>
<tr>
<td>Lateral Sacral</td>
<td>7 mm</td>
</tr>
</tbody>
</table>
ENLARGED MESENTERIC LYMPH NODES: CHILDREN

- Prominent lymph nodes >4 mm, < 20 mm seen on MDCT in 29.1% of children ≤ 10 years of age scanned for trauma
  Rathaus Br J Radiol 78: 30-33, 2005

- Enlarged ileocecal lymph nodes in 21% of asymptomatic children on US: nodes were oval shaped, flat, nontender
MESENTERIC ADENITIS

- PRIMARY
- SECONDARY

- LNs up to 5 mm in small bowel mesentery commonly found in normal patients

Lucy AJR 184: 41-44, 2005
ENLARGED ABDOMINAL LYMPH NODES IN END STAGE CIRRHOSIS

- Seen in 50% of patients
- 1.1 X 1.1 to 3.0 X 4.5 cm in size
- Portacaval space and porta hepatis

Dodd Radiology 203: 127-130, 1997
ENLARGED ABDOMINAL LYMPH NODES IN END STAGE CIRRHOSIS

- Primary biliary cirrhosis 86%
- Sclerosing cholangitis 69%
- Cryptogenic biliary cirrhosis 64%
- Hepatitis B 49%
- Autoimmune cirrhosis 48%
- Hepatitis C 45%
- Alcohol abuse 37%

*Dodd Radiology 203: 127-130, 1997*