FROM PNEUMONIA TO RETROCECAL APPENDICITIS: AN INTRICATE PATH TO THE CORRECT DIAGNOSIS

Radmila Mișcov1,2, Corina Pienar1,2, Calin Popoiu3, Alina Dobre2, Ioana Ciucă1,2, Liviu Pop1,2

1 2nd Pediatrics Department, "Vitor Babeş" University of Medicine and Pharmacy, Timișoara Romania
2 2nd Pediatrics Clinic, "Pius Brînzeu" Emergency County Hospital, Timișoara, Romania
3 Pediatric Surgery Clinic, "Louis Țurcanu" Emergency Hospital for Children, Timișoara Romania

Abstract
Introduction: Acute appendicitis is one of the most common surgical pathologies encountered in the pediatric field with complex clinical symptoms that can mimic a wide variety of diseases, so errors in diagnosis are common. Objective: To present the diagnostic challenges in the case of a 5 year old boy admitted to our hospital with a suspected right medio-basal pneumonia. Case Report: The patient didn't have a significant history. He presented with high fever for over a week, irritating cough mostly during the evening, apathy, adynamia and mid-abdominal pain. Biological investigations showed neutrophilic leukocytosis and marked inflammatory syndrome. Findings during the physical included: influenced general condition, left thoracic paravertebral muscle contracture, decreased right medio-basal lung region. The chest X-Ray revealed an accentuated bilateral interstitial pattern, while the abdominal ultrasound identified a liver tumor. Computed abdominal tomography established the presence of a liver abscess, presenting a communication with the lumen of the ascending colon, which was highly distended. The presence of a calcified deposit is also noted at the level of the cecum. The patient was transferred to the pediatric surgery clinic where laparotomy, appendectomy and subhepatic abscess drainage were performed. The definitive diagnosis was: perforated acute retrocecal appendicitis and subhepatic abscess. The evolution was favorable and the patient was discharged 2 weeks after the surgery. Conclusions: The nonspecific onset (no vomiting, initial mid-abdominal pain, which became progressively generalized and the presence of intestinal transit) mad the final diagnosis truly challenging and could have negatively affected the final outcome.

Keywords: hepatic abscess, retrocecal appendicitis

Introduction
Acute appendicitis is the most common abdominal surgical emergency. The determining cause of acute appendicitis is microbial infection. The predominant mechanism triggering this condition is lumen obstruction. The causes of obstruction are usually coprolites, edema and lymphoid tissue hypertrophy, various foreign bodies, vegetable and fruit seeds, intestinal parasites.

Case report. L. Daniel, a 5 years old male is hospitalized in the Pediatric Clinic II between April 8th to 10th 2015. The patient’s history reveals high fever for about a week (T = 39°C), pallor, apathy, moderately irritating cough, diffuse abdominal pain. The personal pathological history was unremarkable. The personal physiological history - vaginal birth, gesta VI, para III, born prematurely, 28 weeks, BW - 2000g. During the physical examination we noted his weight=15kg. He was afebrile, with decreased appetite, had bilateral eyelid edema, bilateral angular cheilitis, global underrepresented subcutaneous tissue, cold extremities, bilateral cervical lymphadenopathy, left paravertebral muscle contracture. The lung examination showed a present vesicular murmur, decreased on the left side medial and basal. On auscultation crackles were found in the left medio-basal lung region. The abdomen was slightly distended, pliable diffusely sensitive with a present intestinal transit. The liver, spleen and kidneys were impalpable. The urine was normal in color. There were no signs of intracranial hypertension (ICH) or meningeal involvement. He showed no signs of ear or sinus were pain.

The biological investigations revealed leukocytosis with neutrophilia and marked inflammatory syndrome (Table 1).

<table>
<thead>
<tr>
<th>Table 1. Biological investigations</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC = 23.58/ul*</td>
</tr>
<tr>
<td>Ne = 75.7%*</td>
</tr>
<tr>
<td>Ly = 12.4%*</td>
</tr>
<tr>
<td>RBC=3,13 mil/ul*</td>
</tr>
<tr>
<td>Hb = 7.7g/dl*</td>
</tr>
<tr>
<td>Ht = 25.3%*</td>
</tr>
</tbody>
</table>
HEM = 24.6 pg *  
CHEM = 30.4g/dl *  
PLT = 576.000/ul *  
ESR = 121mm/1h *  
Eo =2.7% *  
AFP=0.0 ng/ml  
CHEM = 30.5g/dl *  
Urine culture – sterile  
CRP = 191mg/l *

The pulmonary X-ray showed bilateral interstitial inflammation.
On the second day of hospitalization a pneumology consult is requested, excluding a respiratory condition. On the same day an abdominal ultrasound is performed and a homogeneous mass is found in the liver (Fig. 1.). The oncological consult revealed: hepatomegaly, anemic syndrome; inflammatory syndrome; pneumonia. Recommendations: Vanilmandelic acid (VMA), alpha fetal protein (AFP), neuron-specific enolase (NSE), abdominal MRI and chest CT.
The evolution was not favorable: the abdominal pain had intensified becoming the main symptom. The patient also presented two febrile episodes without vomiting, with 1-2 loose stools/ day. On the third day of hospitalization a thoracic CT is performed, showing no mediastinal, pulmonary or parietal lesions. An abdominal CT was also performed, showing a highly compressive liver abscess (Fig. 2.). The patient was transferred to the Pediatric Surgery Clinic. A median supraumbilical laparotomy was performed with appendectomy and evacuation of the subhepatic abscess. The postoperative evolution was favorable. Two weeks after surgery the patient was discharged.

Fig. 1. Liver with normal echogenity.

Fig. 2. Abdominal CT.

Relatively well-defined, right hepatic lobe mass of around 5.7 / 5.2cm, maximum 5.2 / 7.97cm with homogeneous content. Portal vein= 0.7cm in the hilum, gallbladder – transonic, normal walls. Spleen -normal structure and dimensions (9.9 / 1cm). Normal urinary tract. Conclusion: Suspcion of hepatocellular carcinoma (HCC). Recommendations: ultrasound reevaluation, complex biological assay and oncological evaluation.

Table 2. Differential Diagnosis of hepatic masses (selection)

<table>
<thead>
<tr>
<th>Hepatic abscess</th>
<th>Hepatocarcinoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>- insidious onset: chills, fever, nausea and vomiting, loss of appetite, weight loss, diarrhea and right upper abdominal pain / tenderness</td>
<td>- fatigue and weight loss, occurs in children under age 2</td>
</tr>
<tr>
<td>- increase of ALP and liver transaminases</td>
<td>- increased transaminases, hepatomegaly</td>
</tr>
<tr>
<td>- radiological: ascending of the right hemidiaphragm due to liver purulent collection.</td>
<td>- hepatitis B</td>
</tr>
<tr>
<td></td>
<td>- right upper quadrant abdominal pain</td>
</tr>
<tr>
<td></td>
<td>- modified alkaline phosphatase</td>
</tr>
<tr>
<td></td>
<td>- increased AFP</td>
</tr>
</tbody>
</table>
Hepatoblastoma
- the most common malignant liver tumor in children
- liver tumor formation
- large tumor mass, well defined, multi nodular with areas of necrosis and cavities
- AFP ↓↓/↑↑

Neuroblastoma
- increase in size of the abdomen: hard abdominal mass, firm surface with irregular edges, painless
- cord compression → neurological manifestations, sphincter disorders
- prolonged febrile syndrome
- LDH, feritin - increased
- NSE, VMA - increased

Discussions
The retrocecal appendicitis diagnosis is elusive. The differential diagnosis may vary from mesenteric lymphadenitis to various renal and hepatic tumor formations (Table 2)
In 15% of cases the appendix is located in the retrocecal area and symptoms can mimic biliary and renal pathology. The pain is sometimes posterior, lumbar and the patient may present antalgic flexion of the thigh. In evolution, when an abscess is formed, it may disseminate to the subhepatic region.

The appendicolith found on the CT examination of the abdomen (20 / 15mm) is a calcified deposit of feces inside the appendix. It can also occur in asymptomatic patients and has an increased incidence in appendicitis with retrocecal localization. Perforation is more frequent in patients with appendicoliths.

Conclusions
The nonspecific onset (no vomiting, initial mid-abdominal pain, which became progressively generalized and the presence of intestinal transit) mad the final diagnosis truly challenging and could have negatively affected the final outcome.

References