Case-Based Diagnosis Training

Patient

Gender: Male
Age: 7 years and 4 months

Clinical history and working diagnosis on the referral:
A seven years and four months old boy was admitted to a pediatric hospital with complaining of abdominal pain in epigastric and right hypochondriac region, fever 38.2, icterus and vomiting for the previous days. The most sensitive was the epigastric area, no defense and rebound.

Laboratory initially: Lactate dehydrogenase 2008, Blood Lipase 635 U/L, Blood Amylase 409 U/L, Gamma GT 525, Bilirubin total 81.5, Bilirubin direct 76.7

Features and exact location of lesion in question:
US findings initially: There was an anechoic/hypoechoic mass 3.5-4cm present in the pancreas head, pancreatic oedema with dilated pancreatic duct and extrahepatic bile ducts, peripancreatic lymph nodes, splenomegalie.

Submitted by:

Please add pictures (radiograph, ultrasound, CT or MR images) by clicking on the symbols within the boxes below:

Picture 1: Initial US with more cystic appearance in the pancreatic head

Picture 2: US shows cystic appearance in projection of pancreatic head
Potential pitfall:

Antibiotics (Meropenem, Vancomycin, Metronidazol, Carbopenem) therapy and diet was introduced, but clinical progression of symptoms with jaundice, weight loss, and apathy was experienced.

Because of the obstructive symptoms in acute pancreatitis, a biliary stent in ductus choledochus was implanted, and symptoms icterus decreased, laboratory parameters of cholestasis normalised and parameters of hepatolysis decreased.

Important to rule out or recommend:

Inflammation of pancreas without previous history of trauma is very rare. Always think about cystic tumor!

Final diagnosis:

Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head.
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Additional information

Potential pitfall:
Dilatation of extrahepatic bile ducts and pancreatic bile ducts also imitate inflammation!

Important to rule out or recommend:
Biliary stent was implanted, and maaa in pancreatic head become more solid in apperiance.

After the stent implantation, pain was less present, but loss of appetite, weightloss, and hypoproteinemia occured and a hematologist ordered a blood derivate and human albumin.

On control US followed by CT and MRI we found the mass in pancreatic head is solid

Final diagnosis:
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head

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Picture 5: US shoed dilatatation of extrahepatic bile ducts

Picture 6: US control shows pancreatic mass (no more cystic apperiance in the pancreatic head with stent replacement
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Additional information

Potential pitfall:
There was mild vascularisation inside of the mass, less than in other parts of the pancreatic tissue, and there was some mild progression in size of the mass in pancreatic head.

Round mass in pancreatic head with vascularisation is never a cyst, but always solid mass!

Important to rule out or recommend:
At the same time, the ultrasound showed strong infiltrative changes in the bowel lump (small intestine) in the lower left iliac region with wall oedema up to 0,8cm.

Final diagnosis:
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head.

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Picture 7: US control shows moderate vascularisation within mass

Picture 8: US control shows distension and edema of some bowel loops
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**Additional information**

**Potential pitfall:**
Color Doppler showed hypervascularisation in the wall of bowel loops and surrounding mesentery.

Infiltrative changed bowel loops was surrounded with periphocal oedema, and surrounding strong mesenterial reaction with local mesenterial lymphadenopathy.

Infiltrative process on two different body part in children (pancreas nad bowel loops) should always exclude Burkitt Lymphoma!

**Important to rule out or recommend:**

US showed loss of stratification in bowel wall and perifocal oedema.

Cytologic punction of the pancreas (fine needle aspiration) was performed and was suspected to be Burkitt lymphoma

**Final diagnosis:**
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head
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**Additional information**

**Potential pitfall:**
US showed bowel loops with stratification loss and wall oedema, mesenteritis as well.

Multidisciplinary medical team decided to perform jejunostomy because of the weight loss and poor general condition of the patient and at the same time carry out a biopsy of lymphonodes which surround the infiltrative bowel loops in one act.

**Important to rule out or recommend:**
US showed stratification loss in bowel wall with surrounding oedema.

The lymph node biopsy near the infiltrative changed bowel loop confirmed the diagnosis.

**Final diagnosis:**
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head

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**Picture 11:** US control-bowel oedema and mesenteri lathickening around

**Picture 12:** US control bowel oedema
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**Additional information**

**Potential pitfall:**
Coronal CT was performed, it showed: bile ducts dilatations, solid mass in pancreatic head, biliary stent,

A patient’s general condition was poor. The patient was provided with supportive and parenteral therapy, antibiotics and chemotherapy as per protocol B-NHL BFM 04. In addition, the cytoreductive phase cycle AA 24 was conducted.

**Important to rule out or recommend:**
Axial CT showed solid mass in pancreatic head

**Final diagnosis:**
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head

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**Picture 13:** Coronal CT mass in pancreatic head, biliary ducts dilatation, stent

**Picture 14:** CT: Mass within pancreatic head with low vascularisation
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**Additional information**

**Potential pitfall:**
CT coronal, with MIP appearance.

**Important to rule out or recommend:**
CT axial showed infiltrated and oedematous bowel loops

**Final diagnosis:**
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head

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*Picture 15: CT - Coronal appearance-MIP*

*Picture 16: CT - Bowel wall oedema and mesenteritis*
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**Additional information**

**Potential pitfall:**
CT coronal showed pancreatic mass and in same picture infiltrated and oedematous bowel loops.

**Important to rule out or recommend:**
ERCP showed bile duct dilatation

**Final diagnosis:**
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head

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**Picture 17:** CT coronal imaging of the pancreatic mass and bowel wall/mesenteric

**Picture 18:** ERCP dilatation of intrahepatic bile ducts
Potential pitfall:
MR axila galbladder and pancreatic mass.

Important to rule out or recommend:
Dilatation of extrahepatic bile ducts.

Final diagnosis:
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head
Potential pitfall:
MR hypointense round presentation of gallbladder and pancreatic head mass.

Important to rule out or recommend:
MR /DWI showed diffusion restriction

Final diagnosis:
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Additional information

Potential pitfall:
MR also proved dilatation of pancreatic bile duct with pancreatic oedema.

Important to rule out or recommend:
MR showed dilatation of the extrahepatic and pancreatic bile ducts

Final diagnosis:
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head

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Picture 23: MR: T1 fl 2d in opp tra

Picture 24: MR: T1 vibe fs tra
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**Additional information**

**Potential pitfall:**
MR showed dilatation of extrahepatic bile ducts, pancreatic oedema

**Important to rule out or recommend:**
MR showed pancreatic mass, bill ducts dilatation and solid mass of pancreatic head.

Burkitt lymphoma predominantly involving the pancreas is very rare. There is no specific clinical, laboratory, or radiological sign of the disease.

Thus the diagnosis, especially of focal involvement, is usually difficult.

We here report US, CT and MR imaging findings of the primary pancreatic Burkitt lymphoma in a case with unusual radiological presentation.

**Final diagnosis:**
Atypical Presentation of Burkitt Lymphoma with initially Cystic Formation of the Pancreatic Head