Intrahepatic bile duct dilation and gallbladder hydrops due to a cystic duct stenosis in a 2-month-old boy

André Lollert, Katharina Laudemann, Gundula Staatz

Department of Diagnostic and Interventional Radiology, Section of Pediatric Radiology, Medical Center of the Johannes Gutenberg University, Mainz, Rhineland-Palatinate, Germany

Correspondence to
Dr André Lollert,
andre.lollert@unimedizin-mainz.de

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DESCRIPTION

A 2-month-old boy presented with slight diffuse abdominal pain after an uncomplicated pregnancy and perinatal period. Height (62 cm) and weight (5.5 kg) were according to the age. Routine blood tests showed no abnormalities except for a minimal elevation of aspartate aminotransferase to 38 units/L (reference range 5–35 U/L). Primary abdominal ultrasound showed a dilation of the common bile duct and a gallbladder hydrops (figure 1). MR cholangiopancreatography (MRCP) was indicated to detect the cause for these incidental findings. Contrary to normal bile ducts in small infants,¹ the dilated bile duct system can be reliably imaged using MRCP.² A heavily T2-weighted respiratory-gated MRCP sequence (T2-space) was performed on a 3 T scanner and revealed a stenosis of the

distal cystic duct with a consecutive dilation of its proximal part as the cause for the hydrops. The dilated cystic duct compressed the common bile duct, which also led to intrahepatic bile duct dilation (figure 2). A conservative approach has not been reported very often in the literature, but could prevent unnecessary surgery in some cases.³ It was assumed that this pathology has a significant probability to resolve during growth. Cholecystectomy was assumed unnecessary due to nearly normal laboratory parameters as well as no clinically relevant symptoms. Ultrasound follow-up examinations were planned. The most recent examination at the age of 16 months showed a significant regression of the gallbladder size and the common bile duct was only slightly accentuated with a maximum width of approximately 2.3 mm.

Figure 1 Abdominal ultrasound, showing a dilation of the common bile duct to approximately 5.2 mm (A), and a gallbladder hydrops (B).

Figure 2 Three-dimensional (A) and T2-weighted coronal MR cholangiopancreatography (B) showing a stenosis of the distal cystic duct (white arrow) with a consecutive dilation of its proximal part (red arrow) as the cause for the gallbladder hydrops. The dilated cystic duct (red arrow) compresses the common bile duct (blue arrow), which also leads to intrahepatic bile duct dilation.

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Learning points

- ▶ A well-indicated MR cholangiopancreatography (MRCP) can accurately image bile duct pathologies even in very small children, if primary ultrasound shows dilated bile ducts. MRCP can therefore lead to therapeutic decisions including indication or cancellation of possibly more invasive diagnostics and/or therapies.
- ▶ An ultrasound examination of the abdomen with special focus on the bile duct system should always be performed prior to a sedation-requiring MRI as non-dilated bile ducts cannot be reliably imaged using MRCP.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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