

# PAEDIATRIC ULTRASOUND IN NEONATAL JAUNDICE

## Ultrasound Assessment in Neonatal Jaundice and suspected Biliary Atresia

<b>Objective</b>	To ensure that all staff follow correct procedure of evaluation in the infant who presents with persistent neonatal jaundice.
<b>Responsibility</b>	All sonographers, trainee sonographers, registrars and radiologists performing paediatric ultrasound examinations.
<b>Frequency</b>	For all paediatric ultrasound examinations when an anatomic cause for neonatal jaundice is suspected and the examination has been prioritized by a radiologist.
<b>Procedure</b>	The following table describes the process to be followed for ultrasound examination in the paediatric patient who has unexplained neonatal jaundice.

Step	Action
1	Look at prior radiographs/other imaging//ultrasound +/- report before starting.
2	Examination to be performed at least 4 hours post fasting if there are no clinical contra-indications
3	Full abdominal ultrasound is performed as per protocol with examination extension to include:
4	Specifically identify and document the diameter of the Hepatic Artery: Biliary Atresia (BA) 2.2 mm +/- 0.6mm Normal 1.6 mm +/- 0.4mm (Humphrey and Stringer, 2007)
5	Identify and document the diameter of the Portal Vein (not significantly different between normal and BA but might be absent or anomalous in other situations)
6	Determine whether umbilical vein, from LPV has recanalised.
7	Evaluate bifurcation of portal vein with linear array transducer for the presence of the 'triangular cord' sign anterior to the RPV and contiguous with its anterior wall. When identified this is good evidence for BA. It reflects fibrosis of the biliary tree at this site.
8	Measure the length of the gallbladder (+/- volume of GB) and assess its morphology. An irregular and/or thickened wall and length less than 1.5 cm is very suspicious for biliary atresia.

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### Ultrasound Assessment in Neonatal Jaundice continued

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9	Exam the liver with high frequency linear transducer to assess the liver echotexture and presence or absence of subcapsular arterial flow on colour Doppler. (Lee et al Radiology 2009)
10	Document splenic length and interrogate splenic vessels with Doppler.