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Diagnosis and treatment of palpable abdominal mass in the neonatal period: A 5 year's review

Bee Theng Tan, Adikibi B, O'Toole S, Flett M and Cascio S
Royal Hospital for Sick Children, United Kingdom

Aim: Perinatal detection of an abdominal mass in neonates often poses a diagnostic challenge. Neonatal abdominal masses include a broad spectrum of pathologies with different organs that can originate such masses. The aim of this study was to review the diagnostic pathway, the treatment and outcome of neonates referred with a primary diagnosis of a palpable abdominal mass.

Methods: Neonatal admission records were reviewed to identify all patients admitted to the Neonatal Surgical Unit with a primary diagnosis of a palpable abdominal mass over a five-year period (2008-2013). Data collected included demographics, perinatal history, radiological investigations, operative findings and complications.

Results: Thirty one patients were identified. There were 16 (53%) girls. The abdominal masses were detected on antenatal imaging in 21 (70%) and postnatally in 9. Twenty-two (73%) patients were otherwise asymptomatic, 4 had bilious vomiting, 1 had haematemesis and 3 had respiratory distress. All patients had an ultrasound scan postnatally as the initial investigation of choice with 30% requiring additional cross sectional imaging. In seventeen (57%) patients the mass was renal in origin with the most common underlying urological condition being posterior urethral valves in boys (4/9) and duplex kidney with ureterocele in girls (4/8). Half of these patients required urinary diversion in the neonatal period. For the extra-renal group (13/30); 5 patients (38%) had intestinal duplications and further 5 had tumors and three patients had ovarian cysts. The tumors were sacrococcygeal teratoma (2), hepatic haemangioendothelioma (2) and hepatoblastoma (1). Overall only 4 patients (13%) did not require surgery; this includes two with hepatic haemangioendotheliomas, one with ectopic kidney and one with polycystic kidney disease.

Conclusions: Two thirds of the abdominal masses in neonates are diagnosed prenatally. One third of the patients will require further cross sectional imaging. Of the masses of urological origin posterior urethral valves is the commonest cause in males and duplex kidneys with ureterocele in girls. Half of the patients with a urological abdominal mass will require urinary diversion in the neonatal period. Overall, 87% of the neonates with a palpable abdominal mass will eventually require surgical intervention.

joeytanbt@gmail.com