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Rare complications of common injuries in children: Diagnosis and treatment of traumatic bile leaks (TBL) after blunt liver injury and pleural effusions (PIEf) after blunt splenic injury

Selective non-operative management of hemodynamically stable pediatric trauma patients with blunt liver or spleen injury is the standard of care. Traumatic bile leaks (TBL) may complicate liver injury. TBL occurred in 294 patients with blunt hepatic trauma. Symptoms of increasing abdominal pain, distension, nausea and vomiting 3 to 7 days after injury were suggestive. Hepatobiliary scanning was diagnostic. Combinations of peri-hepatic drain placement, ERCP with biliary stenting and/or sphincterotomy were performed with successful resolution of all TBL. Median resolution was two weeks. No child required surgical repair of the leak. Cholangitis developed in one child. There were no long-term complications. A multidisciplinary and minimally invasive approach employing peri-hepatic external drainage catheters and ERCP with sphincterotomy and stenting of the ampulla is a safe and effective management strategy for TBL in children. Pleural effusion (PIEf) as a complication of blunt splenic injury is not well described in children. Of 274 non-operatively managed pediatric blunt splenic injuries, 12 patients (4.4%) developed left-sided PIEf. Seven of 12 patients required tube thoracostomy for worsening pleural effusion and respiratory insufficiency. Median time to diagnosis of pleural effusion was 1.5 days. Length of stay was 4 days for those without and 7.5 days for those with pleural effusions ($p < 0.001$) and 6 and 8 days for those pleural effusions managed medically or with tube thoracostomy ($p = 0.006$), respectively. In multivariate analysis, high-grade splenic injury (IV-V) (OR 16.5, $p = 0.001$) was associated with PIEf. Some symptomatic patients may be successfully managed medically, while many require tube thoracostomy for progressive respiratory symptoms.

Biography

Robert E Cilley completed General and Pediatric Surgery training at the University of Michigan. He is currently Professor of Surgery and Pediatrics and Ballantine Professor of Surgery at Penn State College of Medicine, Hershey, PA, USA. He is the Chief, Division of Pediatric Surgery and Surgeon-in-Chief at Penn State Children's Hospital, Milton S Hershey Medical Center. He was previously the Medical Director of the Pediatric Trauma Program. He has published over 80 peer-reviewed articles and more than 30 book chapters. His areas of scholarly and professional interest include pediatric trauma, ECMO, lung development, surgical quality and safety.

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