

Pediatric duodenal trauma, management options

Rene Gordillo*, Yadira Aldas, Daniela Gordillo
Alfa Hospital, Ibarra, Ecuador

Statement of the Problem: Trauma is the leading cause of death in children older than 1 year in the world. Abdominal trauma represents the third leading cause of traumatic death, after skull and thorax trauma. Abdomen is responsible for the largest number of injury inadvertent deaths in trauma. Most. Between 5 and 10% of patients who have trauma to the abdomen will have an injury to intra-abdominal organs. Pediatric duodenal trauma is also rare, occurring in < 1% of all pediatric trauma and 2–10% of children with abdominal trauma. Associated injuries are present in 68–86.5% of patients, with major vascular injury occurring in 23–40% of cases. Pediatric duodenal injury is most frequently due to blunt trauma 70–78% of cases. Non-accidental trauma, motor vehicle crashes, and bicycle/handle bar injuries are the most common causes but child abuse should also be considered. Clinical Practice: Although the early diagnosis of duodenal injury is a challenge, and treatment depends on the severity of the injury and the time elapsed, this work presents the alternatives for the surgical management of duodenal injury, whether with primary closure, pyloric exclusion or a combination with three ostomies.

Primary closure (duodenorrhaphy) is performed for lacerations involving less than 25% of the circumference. Failure of duodenorrhaphy resulted in fistula formation, abscess, or peritonitis, with devastating consequences. Stone and Fabian described a duodenal decompression by triple tube technique that uses a tube gastrostomy, a retrograde tube duodenostomy, and an antegrade tube jejunostomy for enteral feeding. Failure rate of the duodenal repair fell to less than 1%. The pyloric exclusion was also described to minimize the chance of duodenal dehiscence

and leak. In this technique, a gastrotomy is made and the pylorus is sutured closed with absorbable suture, which eventually dissolved several weeks later, leading the pylorus to reopen. Gastric contents are diverted away from the duodenal repair, classically through a loop of a side-to-side gastrojejunostomy. While the pyloric exclusion is temporary, the gastrojejunostomy is permanent. To address these issues in the pediatric population, drainage of the stomach after excluding the pylorus may be done with tube gastrostomy, which can be removed after the duodenal closure has healed. Postoperative enteral feeds may be started early by a jejunostomy placed distal to the injury.

Conclusion & Significance: Outcomes of operative treatment of duodenal injury are difficult to generalize since reports are from small case series of patients treated over decades. Mortality of children who undergo surgery is rare. Delay in either diagnosis or operative intervention is associated with increased complication rates and prolonged hospitalization. Evidence in diagnosis and management is sparse and mainly based on retrospective data. Multi-institutional prospective trials are necessary to determine the optimal method for diagnosis and appropriate treatment strategies.

Biography

Rene M Gordillo, General and Laparoscopic Surgeon, graduated from the International University of Ecuador, Diploma in advanced laparoscopy from the Pontifical Catholic University of Chile. Fellow of the American College of Surgeons. Certification in Trauma Surgery from Hospital del Valle University Cali-Colombia. Master in obesity surgery. Certification in bariatric, hepatic, biliar and pancreatic surgery by IRCAD. Currently main surgeon at Novaclinica Moderna, Ecuadorian Social Security Institute and at Alfa Hospital

info@drrenegordillo.com