Management of Duodenal Perforation Post-Endoscopic Retrograde Cholangiopancreatography. When and Whom to Operate and What Factors Determine The Outcome? A Review Article

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ABSTRACT
Context Endoscopic retrograde cholangiopancreatography (ERCP) has evolved from a diagnostic tool to primarily therapeutic procedure. With this, the complexity of the procedure and risk of complication including duodenal perforation have increased. In this article, the recent literature is reviewed to identify the optimal management and factors influencing the clinical outcome. Method Recent literature in English language from the year 2000 onwards, containing major studies of 9 or more cases on duodenal perforation post ERCP were analyzed. Results Literature review revealed a total of 251 cases of duodenal perforation reported in 10 major reports presenting 9 or more cases each. The mean age of these patients was 58.5 years with nearly two third (63%) being female patients. The predominant location of the perforation was: duodenal wall 33.4%, perivaterian 31.8%, CBD (22.3%), and unknown in 7.9%. Early diagnosis within 24 hours was made in 84%, with 55% of these being diagnosed during or immediately after ERCP. CT scan was the most useful investigations in detecting perforations missed during ERCP. Conservative management was employed in 62.5%, which was successful in 92.9% of these cases. Ten of these (6.4%) who failed conservative management required salvage surgery and one died of pneumothorax. The predominant surgical intervention was closure of perforation (49.9%) with or without other procedures, retroperitoneal drainage (39%), duodenal exclusion (24%) and common bile duct exploration and T tube insertion (13%). The overall mortality was 7.9% which was significantly better than previously reported. Among the patients who died, six (30%) had salvage surgery, five (25%) had delay in diagnosis/intervention beyond 3 days and 3 (15%) required multiple operations. Conclusion While the patients with duodenal perforation invariably require surgical intervention, most of the patients with perivaterian injuries can be successfully managed conservatively. The most important factors for recent better outcome were early detection and prompt treatment. Delay in diagnosis and intervention, salvage surgery after failed conservative management, multiple operations, and older age group contributed significantly to the poor outcome.