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Pulmonary Manifestations of Systemic Disease

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THORACOABDOMINAL PNEUMATOSIS COMPLICATING A COLONOSCOPY

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INTRODUCTION: Introduction: Thoracoabdominal pneumatosis (A combination of pneumothorax (PTX), pneumomediastinum (PM), pneumoperitoneum (PP), and pneumoretroperitoneum (PRP)) is a rare and potentially life-threatening complication of bowel perforation. Bowel perforations themselves are quite rare occurring in 0.016% to 0.2% of diagnostic colonoscopies & up to 5% in colonoscopic interventions. Incidence of PTX secondary to colonoscopy is extremely low, occurring less than one-per-million colonoscopies.

CASE PRESENTATION: Case: A 71-year-old male presented to the Emergency Department (ED) with dyspnea & substernal chest pain immediately after colonoscopic polypectomy for a large descending colon polyp. Past history was significant for benign prostatic hyperplasia & osteoarthritis. Physical exam revealed tachycardia, tachypnea & progressive hypoxemia. Chest exam showed palpable chest crepitus & decreased breath sounds bilaterally. Abdomen was tense, distended & diffusely tender with guarding & rebound tenderness. Labs displayed mild non-anion gap respiratory acidosis & mild anemia. Computed Tomography (CT) scan of abdomen & pelvis showed significant PP and PRP, with gaseous distension of large and small bowel. Chest CT scan showed large left PTX, moderate right PTX, extensive PM, & subcutaneous emphysema in thorax & neck. Bilateral chest tubes were placed emergently in the ED with a return of mild serosanguinous pleural drainage & immediate improvement in bilateral PTX. Due to the suspected colonic perforation, the patient was taken for emergency exploratory laparotomy. Bowel perforation of the descending colon was identified. Patient had a descending colon resection with colo-colo anastomosis. His post-operative course was unremarkable with chest tubes removal after 3 days & discharge home after 7 days.

DISCUSSION: Discussion: This case illustrates an example of evaluation & management of an exceptionally rare case of thoracoabdominal pneumatosis after the removal of a large 30 mm polyp in an otherwise healthy male. Risk factors for bowel perforation include age over 75 yrs, female gender, co-morbidities & endoscopic interventions including polypectomy for large polyps over 20 mm, pneumatic dilatation for colonic stricture, endoscopic mucosal resection & submucosal dissection for neoplasia. PTX subsequent to bowel perforation is exceptionally rare, with only 35 cases discussed in the English literature over the last 40 years. The most significant risk factor for PTX in these clinical scenarios is the presence of previously undiagnosed diaphragmatic defects, allowing gas to move via a pressure gradient from the peritoneum to the mediastinum & pleural cavities along fascial planes & large vessels.

CONCLUSIONS: Although extremely uncommon, patients and physicians should be cognizant of this potentially life-threatening complication during perioperative care for colonoscopic procedures.

Reference #1: Lohsiriwat V. Colonoscopic perforation: incidence, risk factors, management and outcome. World J Gastroenterol. 2010;16(4):425-430.

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