**SAS Journal of Surgery**
Abbreviated Key Title: SAS J Surg
ISSN 2454-5104
Journal homepage: https://www.saspublishers.com

OPEN ACCESS

**Surgery**

# Peritonitis by Ulcer Perforation Revealing Intestinal Cystic Pneumatosis: About A Case

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**DOI:** 10.36347/sasjs.2023.v09i04.020 | **Received:** 05.11.2022 | **Accepted:** 13.12.2022 | **Published:** 27.04.2023

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**Abstract** **Case Report**

Intestinal cystic pneumatosis (ICP) is a rare disease, defined by the presence of gaseous cysts in the digestive wall with intestinal predilection. The first case was described in autopsy specimen in 1730 by Duo Vernoi. rare condition characterized by multiple gas-filled cysts in the intestinal wall and can be caused by many conditions. As patients with PCI are mostly asymptomatic, they are not likely to seek medical care. It affected any portion of gastrointestinal tract with the cysts being either confined to the mucosa, submucosa, or subserosa or involving all three layers. It is primary in 15% of cases and complicates an underlying pathology in 85% of cases. We report the case of a 47-year-old chronic smoker who had a history of epigastralgia, admitted to the emergency room for an acute abdominal pain with septic shock. A laparotomy was performed showing necrosis ileum with ICP associated to ulcerative pyloric stenosis & ulcer perforation peritonitis. Therapeutic management consisted of specific treatment of the pathology associated with grelic resection of the necrosis ileum affected by ICP. The patient died during his stay in intensive care on 3th day due to multi-visceral failure despite all intense resuscitation efforts.

**Keywords**: Intestinal cystic pneumatosis, septic shock, emergency, laparotomy.

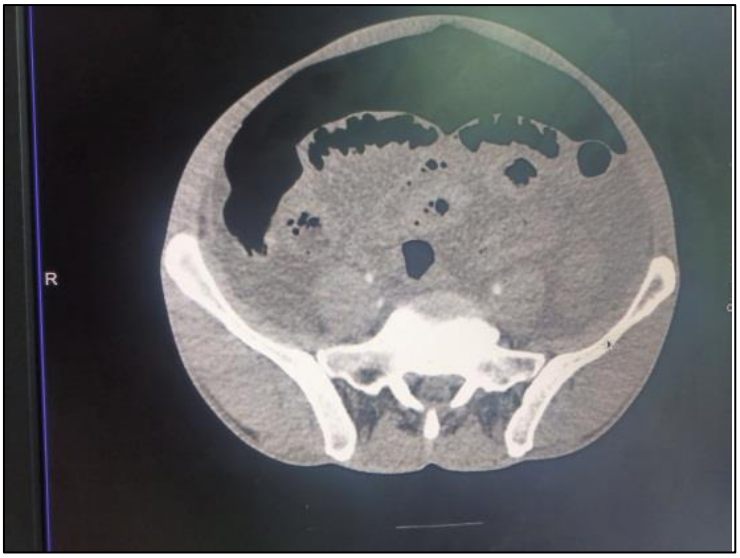


## INTRODUCTION

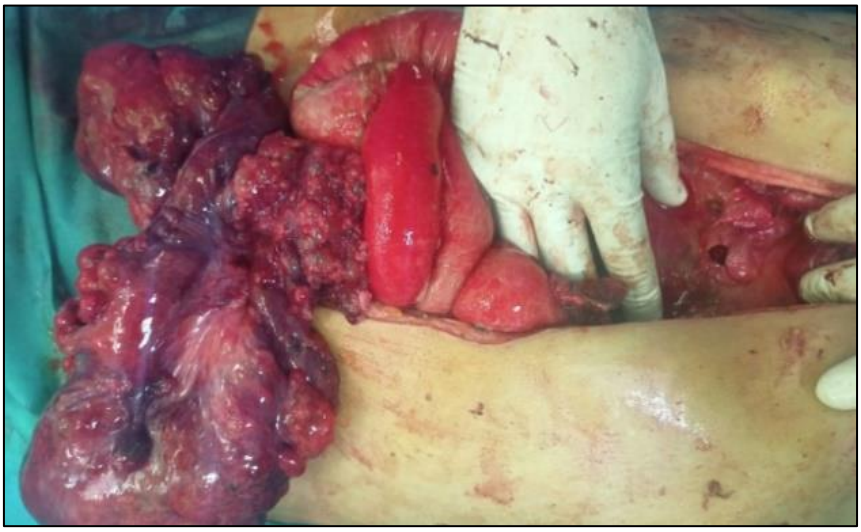
Pneumatosis cystoides intestinalis (PCI) refers to the presence of air within the wall of the small intestine or colon. The first case was described in autopsy specimen in 1730 by Duo Vernoi. rare condition characterized by multiple gas-filled cysts in the intestinal wall and can be caused by many conditions. As patients with PCI are mostly asymptomatic, they are not likely to seek medical care. Except complicated cases, therapeutic management is non-surgical. The Pneumoperitoneum is defined by the presence of air in the peritoneal cavity, and generally signs the perforation of a hollow intra-abdominal viscus, thus justifying emergency surgical exploration. Among the abdominal causes, ICP, itself secondary to a wide variety of digestive conditions such as ulcerative pyloric stenosis. It is often asymptomatic, It is paradoxically one of the few conditions where a pneumoperitoneum found in the diagnostic workup is not necessarily an indication for laparotomy but there are forms of serious or even lethal evolution as the case of our patient.

## CASE REPORT

A 47-year-old chronic smoker admitted in emergency department for acute abdominal pain, vomiting progressing to septic shock requiring admission to intensive care, clinical examination found abdominal guarding after stabilization, an abdominal CT scan was done which showed pneumoperitoneum, diffuse ICP, moderately abundant peritoneal effusion and regular thickening of the antropyloric region (Picture 1). A midline laparotomy was performed. Surgical findings: ICP extending on a necrosis ileum (80cm) from the ileocaecal junction associated with ulcerative-looking pyloric stenosis and stomach stasis with gastric perforation (Picture 2). The surgical procedure was suturing the gastric perforation, a pyloroplasty, ileocaecal resection (Picture 3) with Bouilly Volkman Stomy and washing as well as peritoneal drainage. The patient passed away on the second day of surgery in the intensive care department caused by uncontrolled septic shock.




**Picture 1: Cystic image of the digestive wall with gaseous content**



**Picture 2: During surgery showing gastric perforation and PKI (distal ileal necrosis)**

**Picture 3: Ileocaecal resection surgical specimen**

## DISCUSSION

ICP is characterized by the presence of a gaseous cyst on the wall of the digestive tract with a predominance at the hail level for the primary forms while the primary forms affect the colon [1]. Men are preferentially affected with a sex ratio ranging from 1 to 3.5. It is frequently described between 40 and 50 years [2]. These cysts have a bluish polypoid appearance, when they age they surround themselves with fibrosis and giant cells.for its physiopathogenesis, a mechanical theory proposes the hypothesis of penetration of digestive gases under the effect of intraluminal hyperpressure through a fragile ulcerated and inflammatory mucosa [3]; based on the observation of pneumatosis associated with digestive ulcers as the case of our patient, or cases in post-digestive endoscopy, a second one so-called "pulmonary" theory approaches the first and suggests that thoracic hyperpressure in patients with Chronic obstructive pulmonary disease and asthmatics promotes gas diffusion via the mediastinum to the digestive serosa [4-6]. The third theory assumes that the bacterial fermentation of a large quantity of carbohydrate would lead to the production of intraluminal hydrogen gas responsible for PKI [7].

ICP is often paucisymptomatic, but there are forms of severe evolution. Indeed, intestinal cystic pneumatosis can be associated with anaerobic sepsis, especially in immunocompromised patients [8]. The absence of clinical specificity gives imaging a major interest in the positive and etiological diagnosis, the diagnosis can be suspected in abdominal X-ray in presence of aeric bunches of grapes, bordering the digestive lumen or a possible pneumoperitoneum, CT scan can confirm the lesions [9], with the possibility of looking for an underlying pathology. ICP can completely regress under medical treatment with oral antibiotic therapy against anaerobes (metronidazole), hyperbaric oxygen therapy for some and lifestyle and dietary measures (residue-free diet, etc.) [10, 11], on the other hand, surgery is indicated in the event of complication.

## CONCLUSION

Cystic intestinal pneumatosis is a rare condition, it's the trap to unwary surgeons.

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