

Pnömosistis İntestinalis ve Portomezenterik Venöz Gaz

The Pneumocystis Intestinalis with Porto-Mesenteric Venous Gas

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Geliş Tarihi/Received: 17.11.2019

Kabul Tarihi/Accepted: 31.01.2020

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This case was presented in 6th

Intercontinental Emergency

Medicine Congress, 6th

International Critical Care and

Emergency Medicine Congress on

25 - 28 April 2019

Anahtar Sözcükler:

Pnömosistis intestinalis

Portomezenterik venöz gaz

Key Words:

Pneumocystis intestinalis

Porto-mesenteric venous gas

ÖZ

71 yaşında bir kadın hasta acil servise genel durum bozukluğu ve ateş şikâyeti ile başvurdu. Hastanın özgeçmişinde 2,5 yıl önce kolon kanseri için ameliyat öyküsü vardı. Muayenesinde bilinci “stupor” olarak değerlendirildi. İntravenöz kontrastlı bilgisayarlı abdominal tomografide ince bağırsak segmentlerinde ileus ile uyumlu yaygın distansiyon mevcuttu. Distal ileal segmentlerde intramural gaz görüntüleri izlendi. Karaciğerde portal sistemle gaz imajı izlendi. Hastaya acil laparotomi planlandı. Operasyon sırasında ileal 40 cm segmentin karın arka duvarına yapışık olduğu ve bu segmentin nekroze olduğu gözlemlendi. Pnömosistis intestinalis ile porto-mezenterik venöz gaz arasındaki ilişki intestinal nekrozun göstergesidir. Acil cerrahi tedavi olgumuzda olduğu gibi yapılmalıdır.

ABSTRACT

A 71-year-old female patient was admitted to emergency department with a general condition disorder and fever. She had a history of stroke, hypertension and diabetes, and had a history of operation for colon carcinoma 2.5 years ago. On examination, his consciousness was stupor. Intra-venous contrast-enhanced computed abdominal tomography showed diffuse distension consistent with ileus in small bowel segments. Intramural gas images were seen in the distal ileal segments. Gas images compatible with portal system were present in the liver. Emergency laparotomy was performed. It was observed that the 40 cm small bowel loops adhered to the posterior abdominal wall of the pelvis and necrosis of this segment was observed during the operation. The association of pneumocystis intestinalis with porto-mesenteric venous gas is indicative of intestinal necrosis. Emergency surgical treatment should be performed as in our case.

Introduction

Pneumatosis intestinalis is the presence of gas sacs within the small and large intestinal wall in the gastrointestinal tract. It was defined by Du Vernoy during dissection of a human cadaver in 1730 (1). The clinical manifestations in pneumatosis intestinalis may vary widely, ranging from life-threatening complications such as intussusceptions, intestinal obstruction, perforation and ischemia to

nonspecific findings as abdominal pain, abdominal distension and rectal bleeding (2). It can be diagnosed in conventional radiographs, computed tomography, ultrasonography and endoscopic or surgical procedures.

In this case report, we aimed to present a case of pneumatosis intestinalis secondary to intestinal necrosis accompanied by portomesenteric venous gas.

Case report

A 71-year-old female patient was admitted to emergency department with fatigue and fever. On admission, her arterial blood pressure was 100/50 mmHg, pulse was 123 per minute, fever was 38.5 °C and oxygen saturation was 85% in room air. It was learned from the anamnesis that her complaints started two days ago. She had a history of stroke, hypertension and diabetes mellitus, and had a history of surgery for trigeminal neuralgia 9 years ago, and for colon carcinoma 2.5 years ago. On examination, his level of consciousness was stupor, there was no neck stiffness, verbal response was in the form of meaningless sounds, there was no eye-opening response, and there was a withdrawal response on the extremities to a painful stimulus. Abdominal evaluation could not be performed because of altered mental status. In laboratory findings, leukocyte count was 25.600 K/uL, neutrophil count was 19.800 K/uL, blood urea nitrogen was 100 mg/dL, creatinine was 1,6 mg/dL, INR was 1.4, C-reactive protein was 19,9 mg/dL and there was no electrolyte imbalance. Cranial imaging showed no evidence of an acute lesion. Intra-venous contrast-enhanced computed abdominal tomography showed diffuse distension consistent with ileus in small bowel segments (Figure 1,2). Intramural gas images were seen in the distal ileal segments. Gas images compatible with portal system were present in the liver. Emergency laparotomy was performed. It was observed during surgery that a 40 cm small bowel loops adhered to the posterior abdominal wall of the pelvis and there was necrosis in this segment. Ileal resection and anastomosis were performed. The patient was followed up in intensive care unit for 9 days. She was discharged 11 days after the operation without any complication.

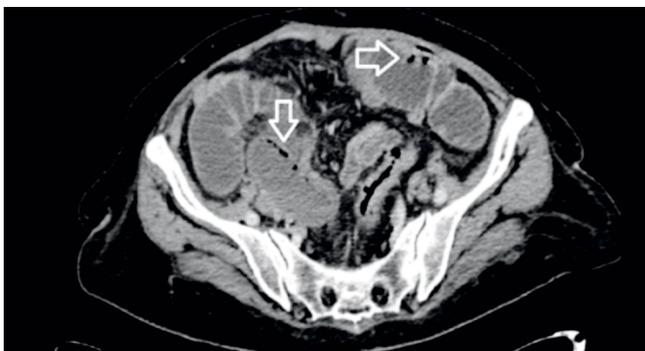


Figure 1. The abdominal computed tomography with intravenous contrast media. The transverse image reveals diffuse distension consistent with ileus in small bowel segments. Intramural gas images were seen in the distal ileal segments (arrows).

Discussion

Pneumatosis intestinalis is a rare pathology characterized by multiple gas-filled cysts in the intestinal subserosa and submucosa. While most of the disease involves the jejunum and ileum, the colon is affected by 32% (3). In our case ileum was involved. Gastrointestinal system diseases such as appendicitis, Crohn's disease, pyloric stenosis, ulcerative colitis, diverticular disease, necrotizing enterocolitis, gastroduodenal ulcer and sigmoid volvulus may accompany (4). In addition, non-gastrointestinal conditions such as chronic obstructive pulmonary disease, collagen tissue diseases, AIDS, and glucocorticoid use may also accompany too (4).

Because 50% of asymptomatic patients have spontaneous remission, no specific treatment is recommended. Nonoperative oxygen therapy is initiated first in symptomatic patients unless perforation, peritonitis or sepsis is present (5). Surgical treatment should be preferred if patients have clinical or radiological findings supporting perforation.

Gas in the porto-mesenteric venous system is another rare condition. Although it is frequently associated with mesenteric ischemia or bowel gangrene and necrotizing bowel diseases, it can be caused by blunt abdominal traumas, intestinal obstruction, ulcerative colitis, abdominal abscess, gastric ulcer, large gastric cancer, gastric biopsy, hemicolectomy, pseudomonas sepsis and diverticulitis.

Diagnosis of pneumatosis intestinalis and portomesenteric venous gas could be established clinically and radiologically. Conventional radiographs, computed tomography, ultrasonography can be used to diagnose both entities (6). Presence of circular gas in the bowel and

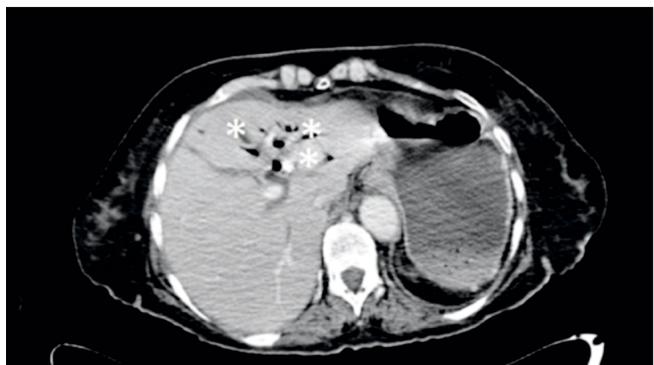


Figure 2. The abdominal computed tomography with intravenous contrast media. The transverse image reveals gas images compatible with portal system (asterisks).

the mesentery is characteristic finding of pneumatosis intestinalis in conventional radiographs. Presence of gas entrapped within the wall of the bowel is characteristic finding of pneumatosis intestinalis in computed tomography. Computed tomography also distinguishes gas within the intestinal wall and lumen (5,6). Moreover, computed tomography also distinguishes gas cysts and submucosal fatty cysts. A branching area of low attenuation extending to within two cm of the liver capsule is the radiographic criterion for portal vein gas (7). Lifethreatening causes such as intestinal ischemia, perforation and

necrosis can also be diagnosed in computed tomography (8). In our case pneumocystis intestinalis was accompanied by portomesenteric gas, a sign of necrosis. Abdominal examination could not be assessed due to the patient's level of consciousness. Patient underwent emergency surgery with computed tomography findings (8).

As a conclusion, etiology varies from benign conditions to fulminant gastrointestinal disease. The presence of portomesenteric venous gas in pneumocystis intestinalis is an indicator of intestinal necrosis. Emergency surgical treatment should be performed as in our case.

References

- 1- Brighi M, Vaccari S, Lauro A, et al. "Cystamatic" Review: Is surgery mandatory for pneumatosis cystoides intestinalis? *Dig Dis Sci* 2019;64:2769–2775.
- 2- Shaheen O, Ahmad W, Mhammad NA. Gastric outlet obstruction and sigmoid volvulus in a patient with pneumatosis intestinalis: An etiology or a complication. *Case Rep Surg* 2019:4065749.
- 3- DJ Kim, YJ Choi, YS Yoo. Pneumatosis intestinalis presenting as small bowel obstruction without bowel ischemia after mechanical ventilation. *Acute Crit Care* 2019;34(1): 81–85.
- 4- Ko Y, Shim SS, Kim Y, Chang JH. Pneumatosis intestinalis associated with pulmonary disorders. *J Korean Soc Radiol* 2019;80:274-282.
- 5- Ling F, Guo D, Zhu L. Pneumatosis cystoides intestinalis: a case report and literature review. *BMC Gastroenterol* 2019;19:176.
- 6- Di Pietropaolo M, Trinci M, Giangregorio C, Galluzzo M, Vittorio M. Pneumatosis cystoides intestinalis: case report and review of literature. *Clin J Gastroenterol* 2020;13(1):31-36.
- 7- Dasa O, Moroi MK, Ruzieh M. Gas in the liver. *Gastroenterology* 2019;157(2):313-314.
- 8- Repanshek Z, Kingsley E. Evaluation of acute abdominal pain with computed tomography. In: Graham, A, Carlberg, DJ. editors. *Gastrointestinal Emergencies* 2019:19-21.