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 CT 13 Somatom Sensation 16
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 CT (GE medical systems, Milwaukee, Wis)
 140 mL 3 mL
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 CT

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(Table 1).

Table 1. Clinical Profile and CT Findings of Pneumatosis Intestinalis Patients

	Sex/ Age	Underlying Disease	CT Finding				Progress
			Involvement Site	Gas Pattern	PV / MV Gas	Associated Finding	
1	F/28	N-C	TI, AC	B	- / -	-	Conservative treatment
2	M/56	N-C	I	B	+ / +	-	Conservative treatment
3	F/80	N-C	R	B	- / -	-	Conservative treatment
4	M/5	N-C	AC	B	- / -	Appendicitis	Appendectomy
5	F/44	ESRD	DC, SC	B / L	- / -	Strangulation of colon	Total colectomy
6	F/49	ESRD	J	B	- / -	Strangulation of jejunum	Segmental resection of jejunum
7	M/58	ESRD	I	B / L	+ / +	Strangulation of ileum	Segmental resection of ileum
8	M/53	ESRD	DC, SC	B / L	- / -	-	Conservative treatment
9	M/70	ESRD	J, I, TC, SC	B / L	- / -	Ischemic change and hydropneumoperitoneum	Diagnostic laparoscopy without perforation of bowel
10	M/57	Gastrectomy due to AGC	I	B / L	+ / -	-	Adhesiolysis & Serosa repair of ileum
11	M/75	Gastrectomy due to AGC	J, I	B / L	- / -	Ischemic change and hydropneumoperitoneum	Primary repair & segmental resection of ileum
12	F/64	Laminectomy due to SDH	AC	L	- / -	Pneumoperitoneum	Primary repair of perforated ileum
13	M/69	Tuberculosis enteritis	I	B / L	+ / -	-	Expired
14	M/60	Lung cancer	AC	B	+ / -	-	Expired
15	M/86	Pneumonia	Small & large bowel	B / L	+ / -	-	Expired

N-C, nonspecific; ESRD, end state of renal disease; AGC, advanced gastric cancer; SDH, subdural hematoma; J, jejunum; I, ileum; TI, terminal ileum; AC, ascending colon; TC, transverse colon; DC, descending colon; SC, sigmoid colon; R, rectum; B, bubble; L, linear; PV, portal vein; MV, mesenteric vein



Fig. 1. 44-years-old woman with end stage renal disease
Contrast enhanced CT scan shows (Fig. 1A, B) markedly dilated descending colon with large amount of hematoma filling the thickened wall (arrows) represent extensive mucosal necrosis. Linear and bubble like pneumatosis intestinalis (arrow heads) is noted within the wall and hematoma. There is no evidence of wall enhancement.

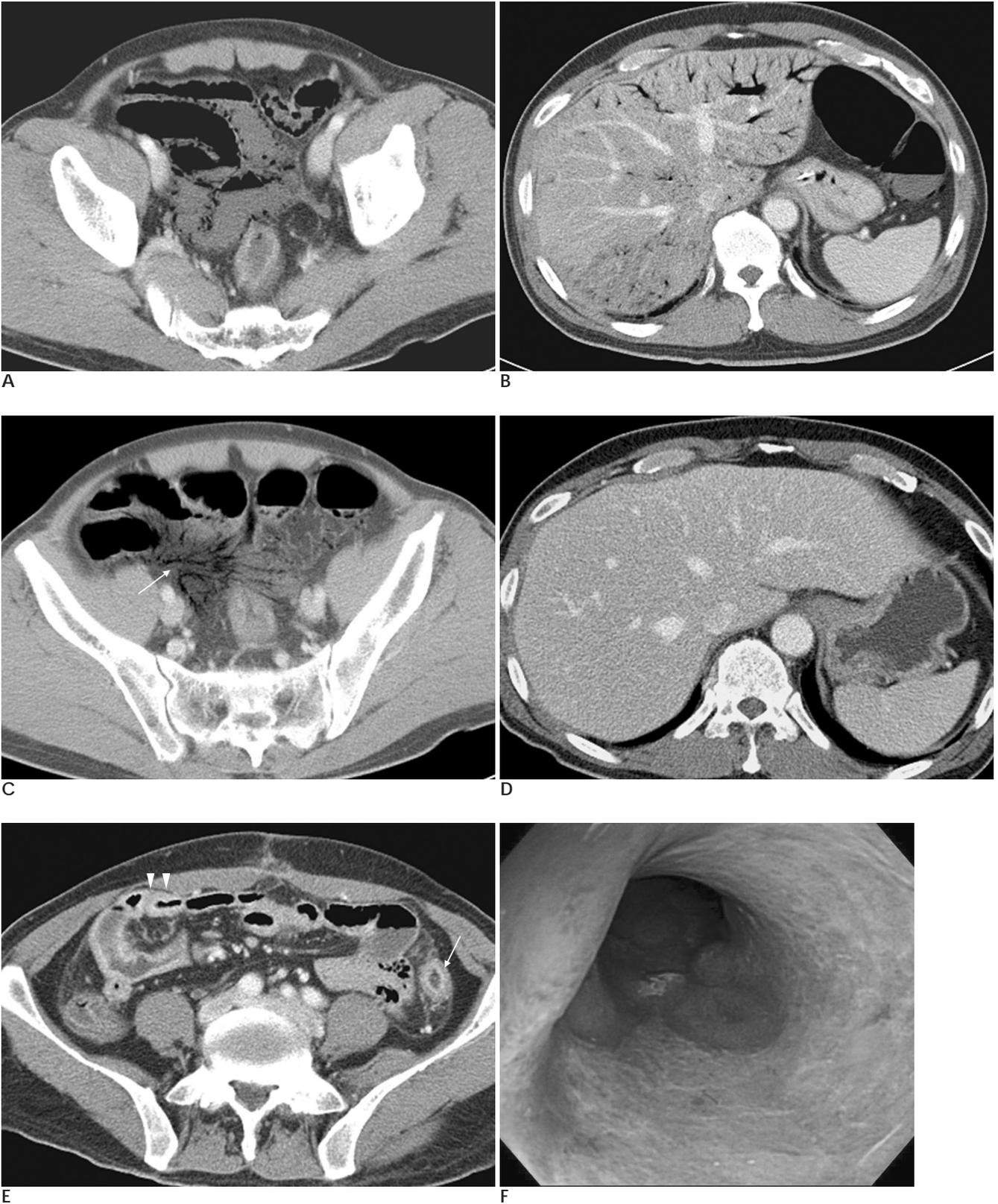


Fig. 2. 55-years-old man with abdominal pain
 Contrast enhanced CT scan shows bubble like pneumatosis intestinalis in the ileum (Fig. 2A) and branching pattern of air in portal (Fig. 2B) and ileal vein branch of superior mesenteric vein (Fig. 2C, arrow).
 Follow up image after 8 days shows air in portal and mesenteric veins are absorbed (Fig. 2D). Air in bowel loops are also subsided but diffuse enhancing wall thickening are developed (Fig. 2E) in ileum (arrow heads) and descending colon (arrow). Sigmoidoscopic findings show well demarcated erythematous and friable mucosal changes at distal descending colon (Fig. 2F).

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Pneumatosis Intestinalis: CT Findings and Clinical Features¹

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Purpose: The purpose of this study is to evaluate the CT findings and clinical features of patients with pneumatosis intestinalis.

Materials and Methods: From January 2001 to October 2007, 15 patients with pneumatosis intestinalis were diagnosed by the use of CT. We analyzed the clinical features and CT findings to assess the involvement site, the presence of portal and mesenteric vein gas, and the existence of accompanied ischemic change.

Results: Of the 15 patients, five patients had end stage renal disease (33.3%), two patients underwent a gastrectomy, one patient underwent a laminectomy, one patient had tuberculous enteritis, one patient had lung cancer and one patient had pneumonia. Four patients presented with no specific disease. There was portal or mesenteric venous gas in six cases, and strangulation or an ischemic change of the bowel in five cases. Otherwise, pneumatosis intestinalis was associated with hydropneumoperitoneum in two cases, pneumoperitoneum in one case and a single case of perforated appendicitis. Nine patients underwent surgery for ischemic change of the bowel, hydropneumoperitoneum, appendicitis, and a clinical sign of panperitonitis. Among the remaining six patients, three patients recovered and were discharged, and three patients expired during progression of the disease.

Conclusion: End stage renal disease is the most common condition associated with pneumatosis intestinalis. The presence of portomesenteric venous gas, ischemic change of the bowel, and linear pneumatosis intestinalis are indicative of a poor prognosis.

Index words : Pneumatosis cystoides intestinalis

Portal vein

Kidney failure

Computed tomography (CT)

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