

# Acute abdomen in oncologic patients

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# Acute, potentially life-threatening abdominal condition in a cancer patient

- ❖ Directly related to the primary tumor
- ❖ Related to metastasis
- ❖ Related to treatment
  - impaired immune system, not allowing a normal response to infections
  - chemotherapy/immunotherapy: hemorrhage, perforation

# ABDOMINAL EMERGENCIES IN ONCOLOGIC PATIENTS

GASTROINTESTINAL OBSTRUCTION

PERFORATION

VASCULAR

- Hemorrhage
- Vessel occlusion

TREATMENT-RELATED

# Clinical Indications to Imaging

Acute non localized abdominal pain, associated with fever, initial presentation

Acute non localized abdominal pain, neutropenic patient, initial presentation

*ACR appropriateness criteria, J Am Coll Radiol, 2018, 15, S217-231*

Small bowel obstruction

*ACR appropriateness criteria, J Am Coll Radiol, 2020, 17, S305-314*

Palpable abdominal mass, suspected neoplasm

*ACR appropriateness criteria, J Am Coll Radiol, 2019, 16, S384-391*

**CT of the abdomen and pelvis, with iv contrast**

# ABDOMINAL EMERGENCIES IN ONCOLOGIC PATIENTS

## OBSTRUCTION

### Intestinal obstruction

- large bowel obstruction: 10-30% colorectal cancer; sigmoid and splenic flexure
- small bowel obstruction : peritoneal carcinomatosis
- ovarian cancer: 20-50% acute intestinal obstruction

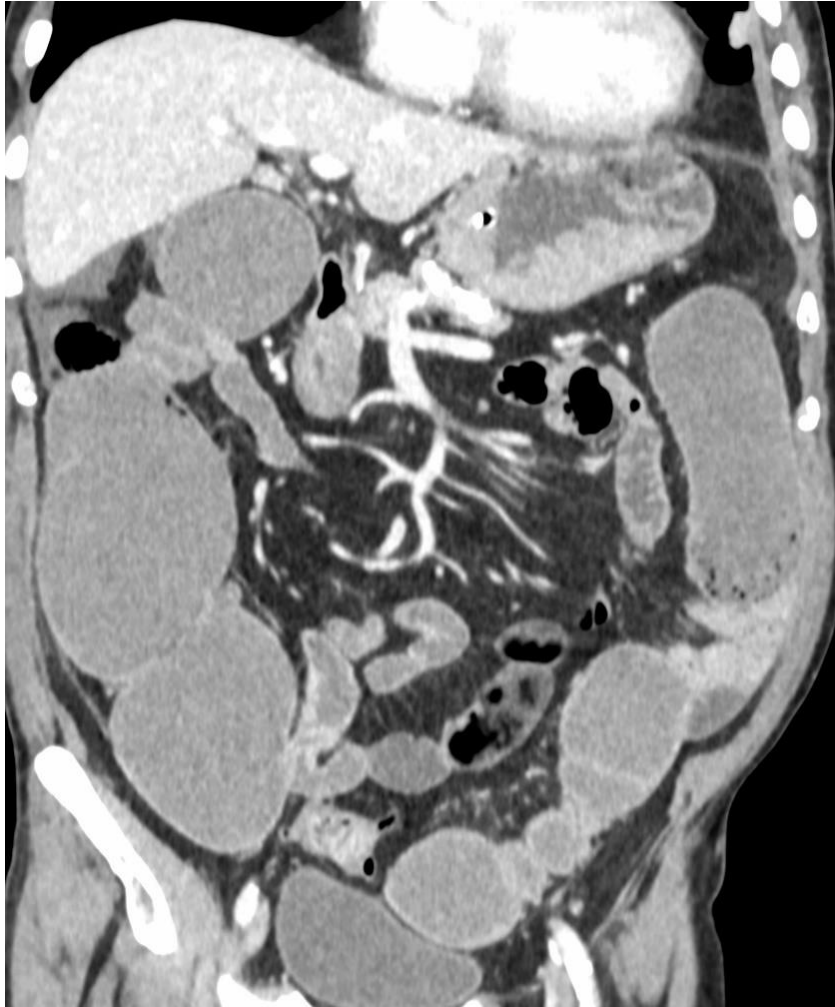
### Gastric outlet obstruction

- malignancy: gastric adenocarcinoma, pancreatic adenocarcinoma, duodenal tumors, biliary tumors, lymphoma

*Guniganti P et al, RadioGraphics 2015, 35, 1909-1921;*

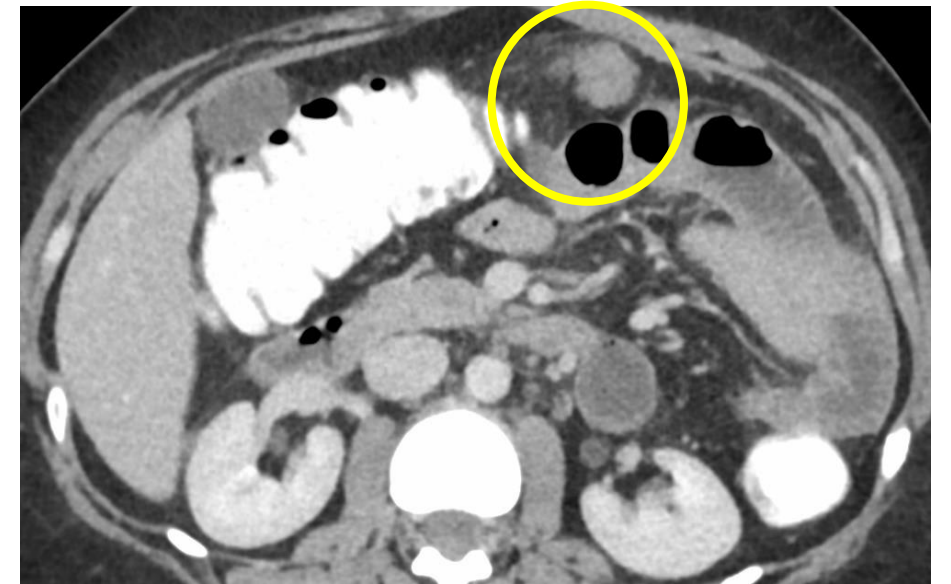
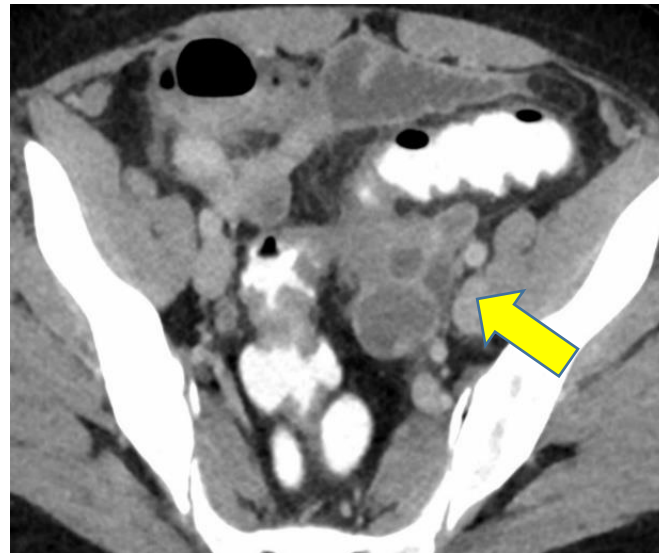
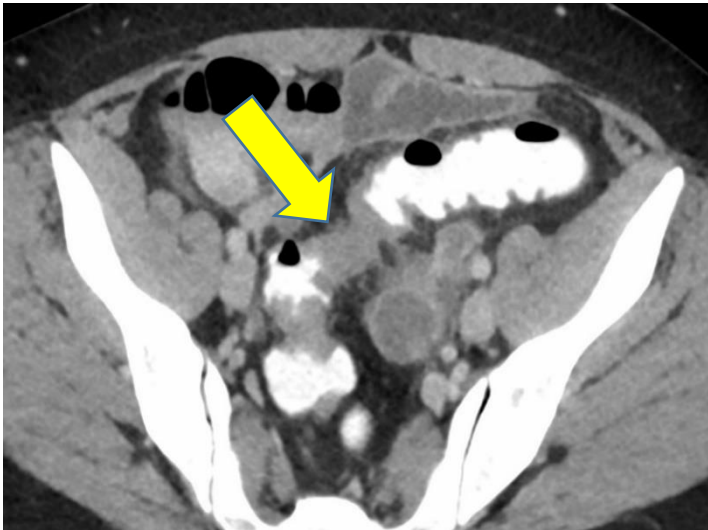
*Bosscher M.R.F. et al, Cancer Treatment Reviews, 2014, 40, 1028-36*

## Acute abdominal pain, abdominal distension



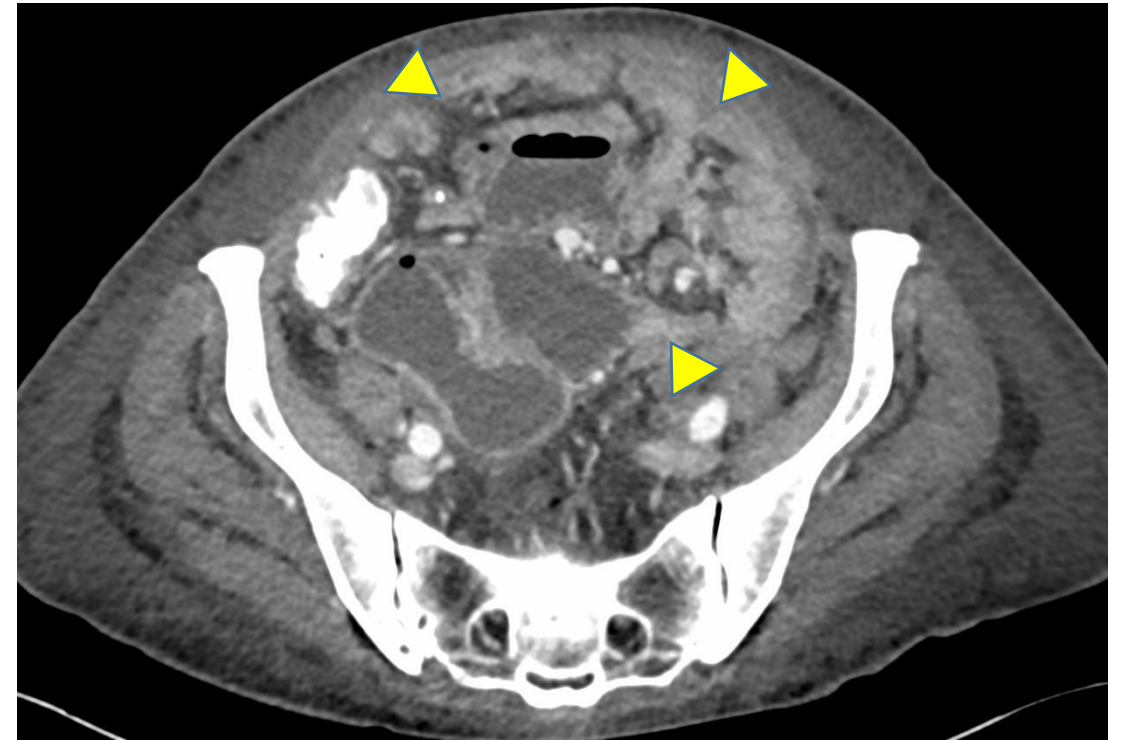
Emergency CT: sigmoid tumor, large bowel obstruction

## Abdominal pain, abdominal distension



Left ovarian tumor, malignant sigmoid stenosis, intraperitoneal implant

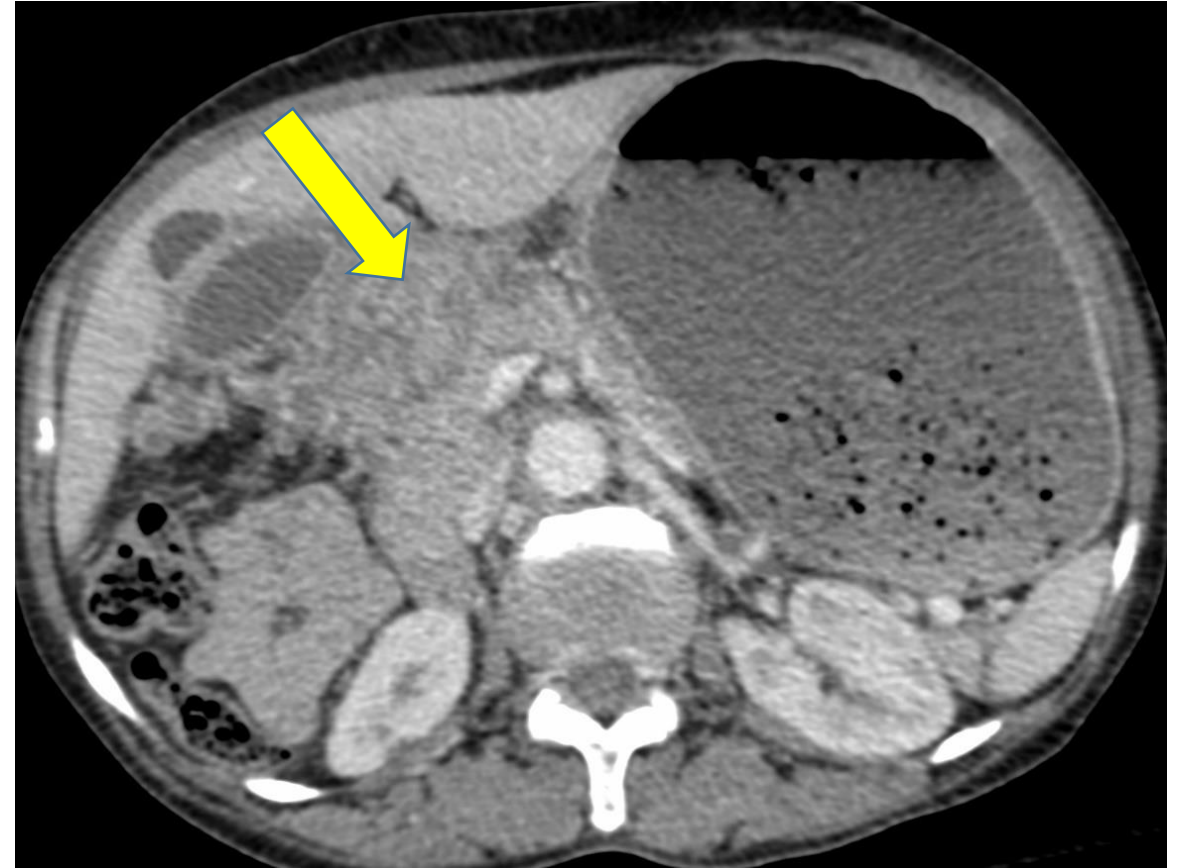
## Abdominal distension, nausea, vomiting



Peritoneal carcinomatosis, small bowel obstruction



## Two-days vomiting, hematemesis



Emergency CT: gastric outlet obstruction, gastric tumor  
(poorly differentiated adenocarcinoma)

# ABDOMINAL EMERGENCIES IN ONCOLOGIC PATIENTS

## GASTROINTESTINAL OBSTRUCTION

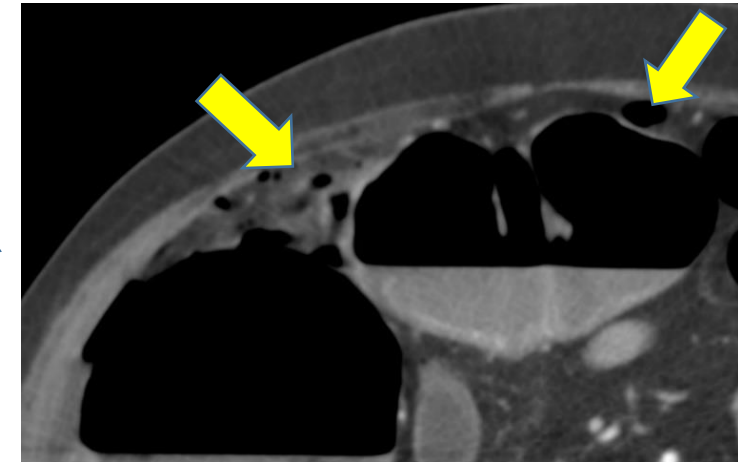
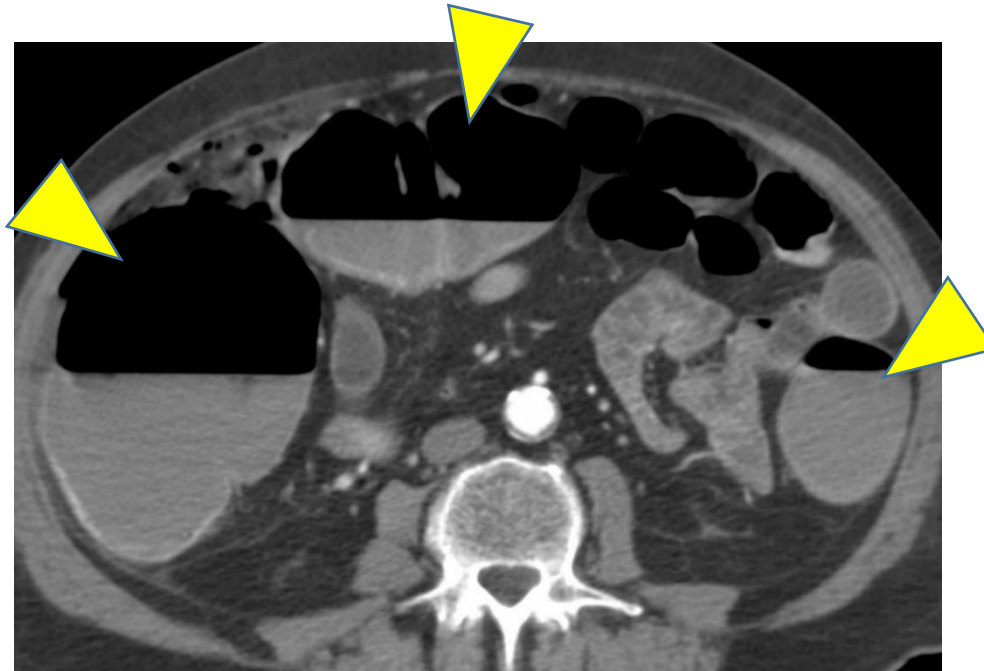
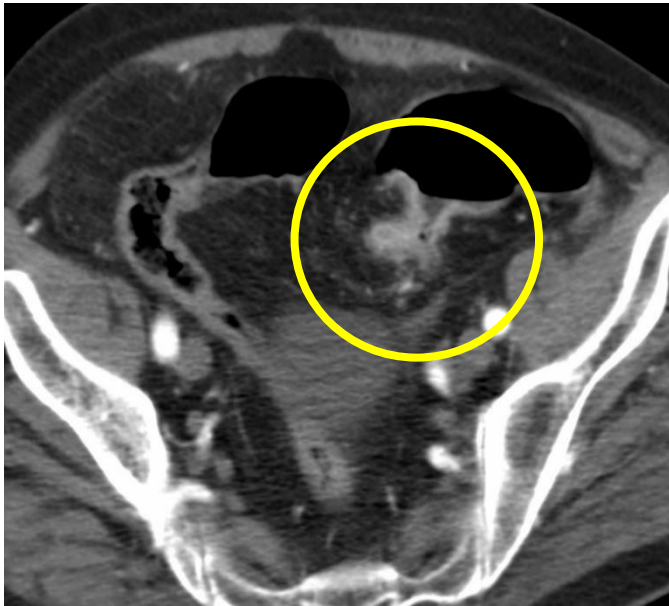
## PERFORATION

## VASCULAR

- Hemorrhage
- Vessel occlusion

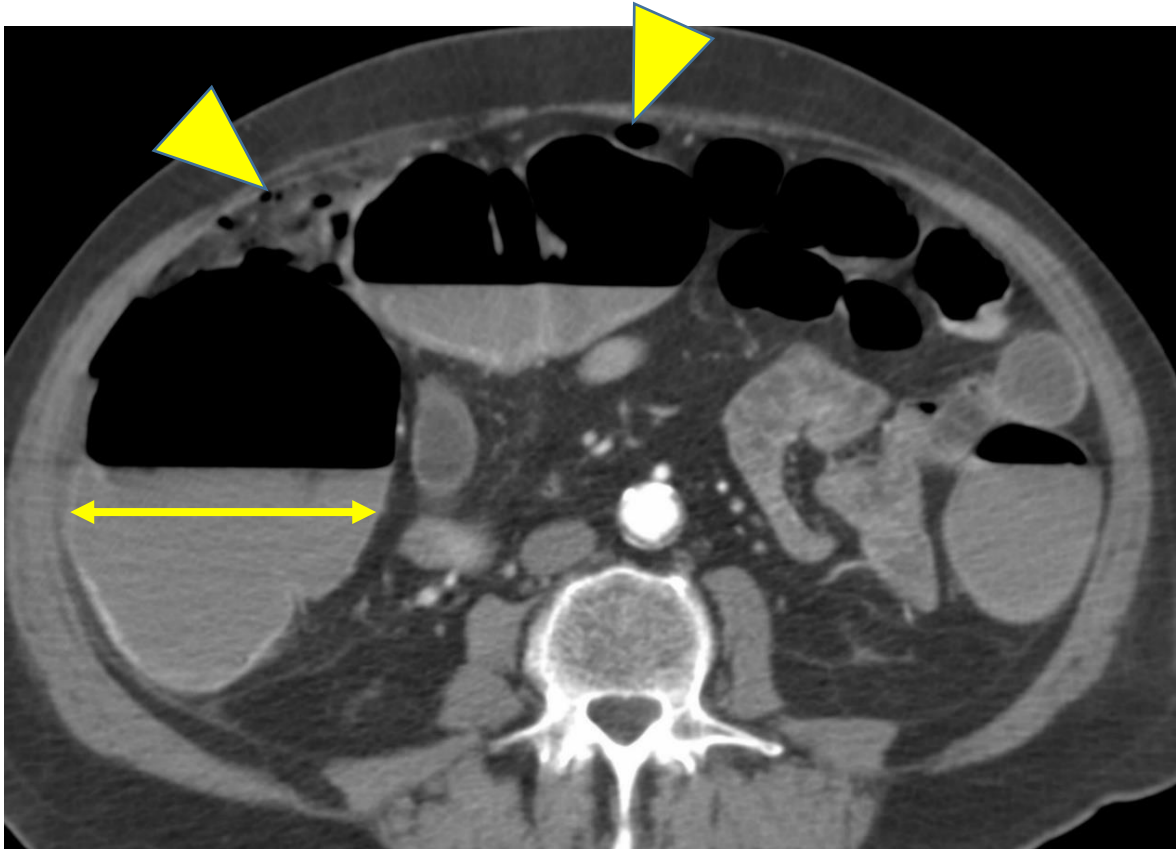
## TREATMENT-RELATED

## Acute abdominal pain, guarding



Emergency CT: sigmoid tumor, large bowel obstruction, caecal perforation

## Predictive of caecal perforation in patients with obstructive distal colon cancer

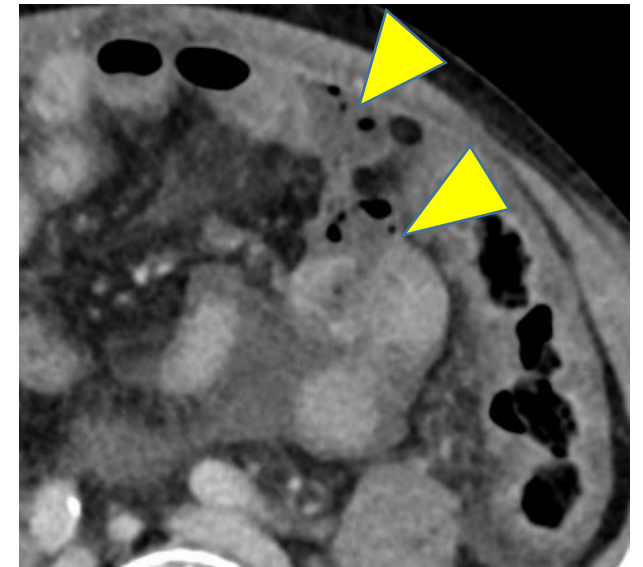
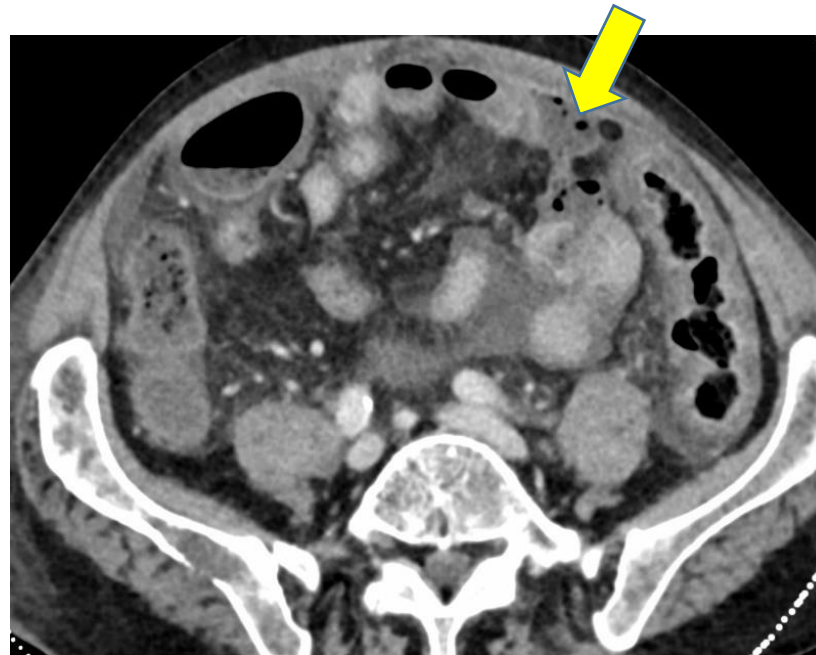
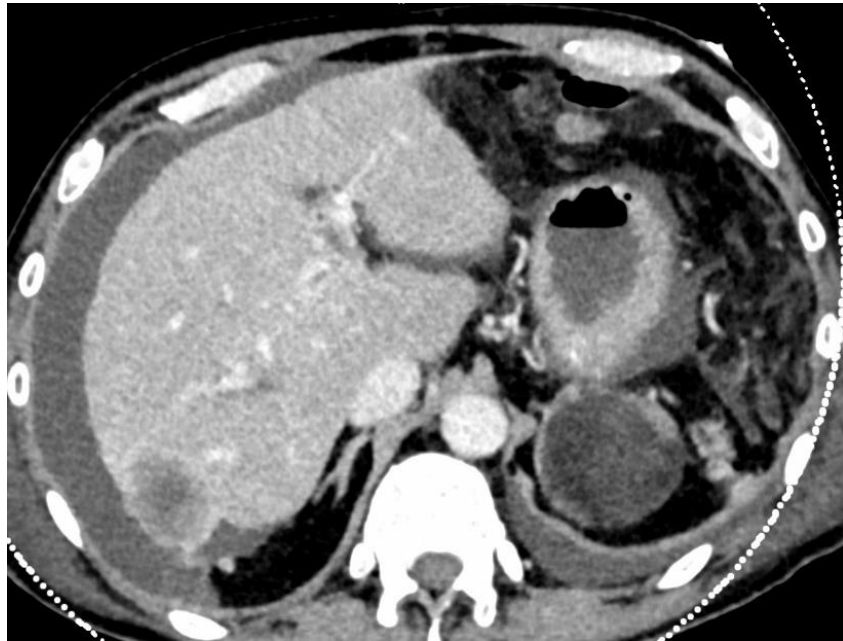


Maximum caecal diameter > 9cm

*Davis L, Radiology, 1957, 68: 542-8*

*Sabbagh C et al, ColoRectal Disease, 2018, 20, 688-695*

## Pulmonary tumor, abdominal pain, distended abdomen



Emergency CT: small bowel perforation, ascites, liver, bone and adrenal metastasis

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# ABDOMINAL EMERGENCIES IN ONCOLOGIC PATIENTS

## HEMORRHAGE

### Hypervascular malignancies

- hepatocellular carcinoma (HCC), renal carcinoma, melanoma
- 10-15% HCC: abdominal hemorrhage

### Spontaneous splenic rupture

- 16%: lymphoma, leukemia
- 8%: primary splenic neoplasm (angiosarcoma)
- hypervascular metastasis

# ABDOMINAL EMERGENCIES IN ONCOLOGIC PATIENTS

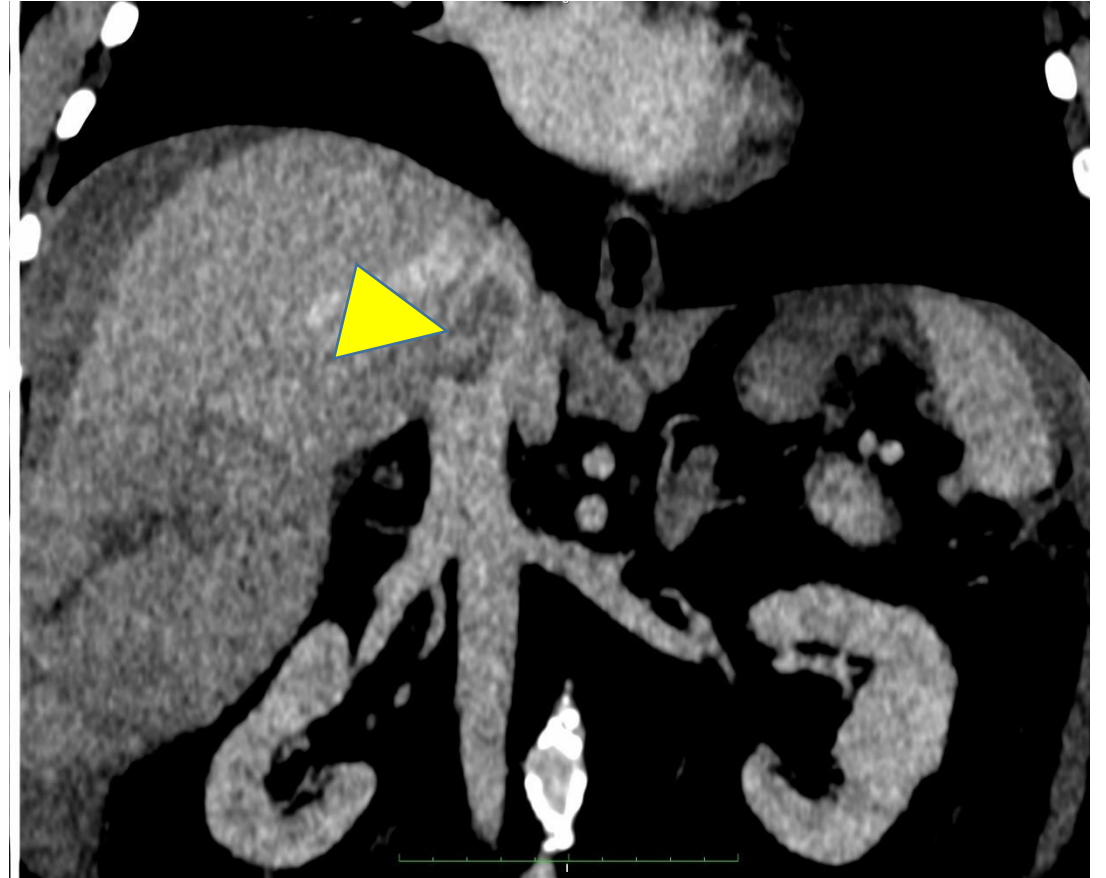
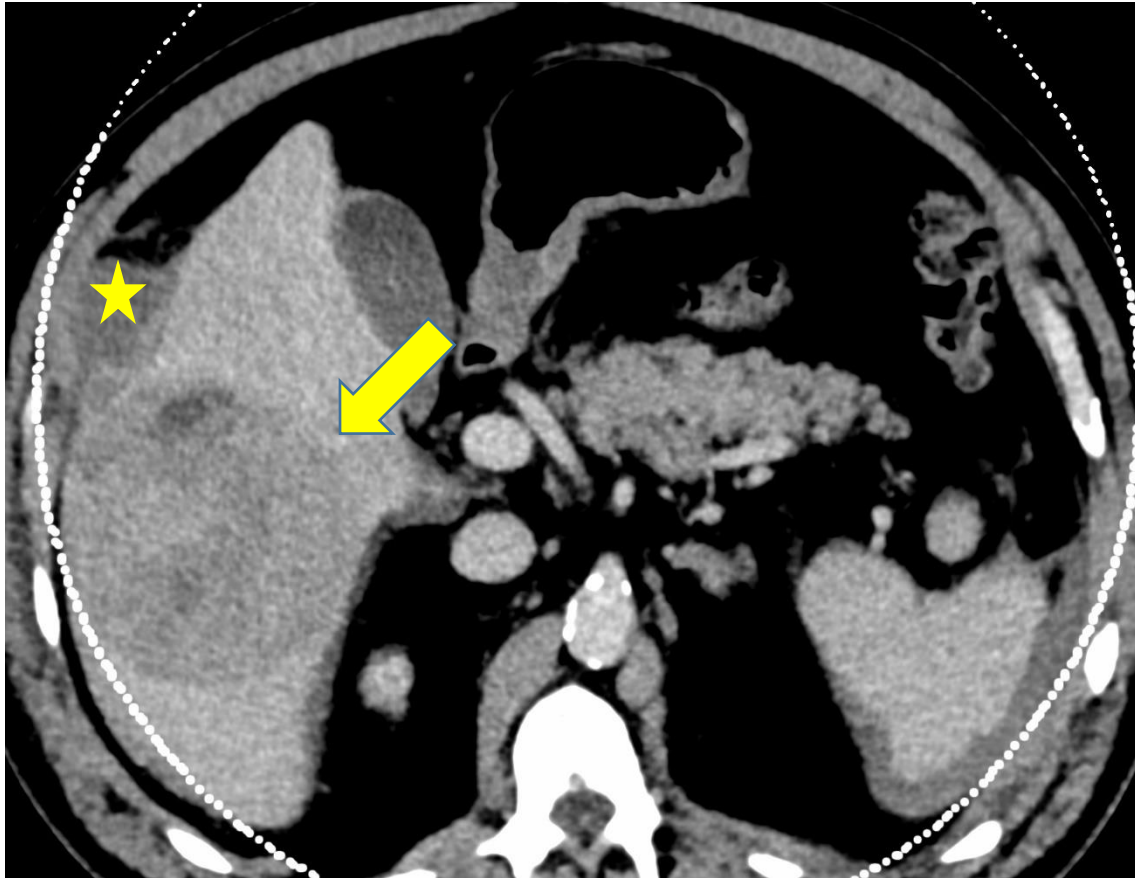
## VESSEL OCCLUSION

### Thrombosis/Thromboembolic complications

- paraneoplastic hypercoagulable status
- vascular tumor invasion: HCC, renal cell carcinoma, pancreatic adenocarcinoma
- chemotherapy

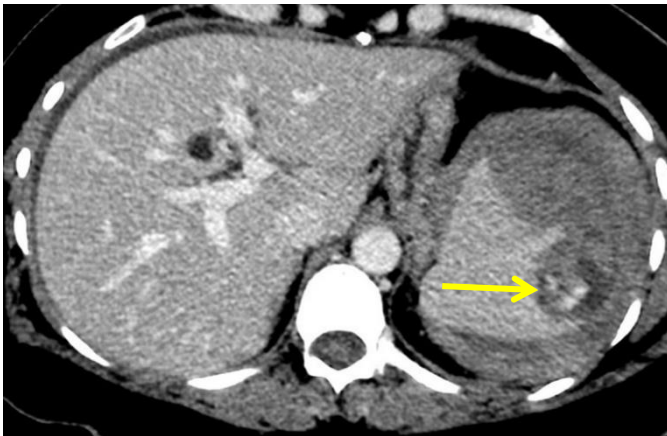
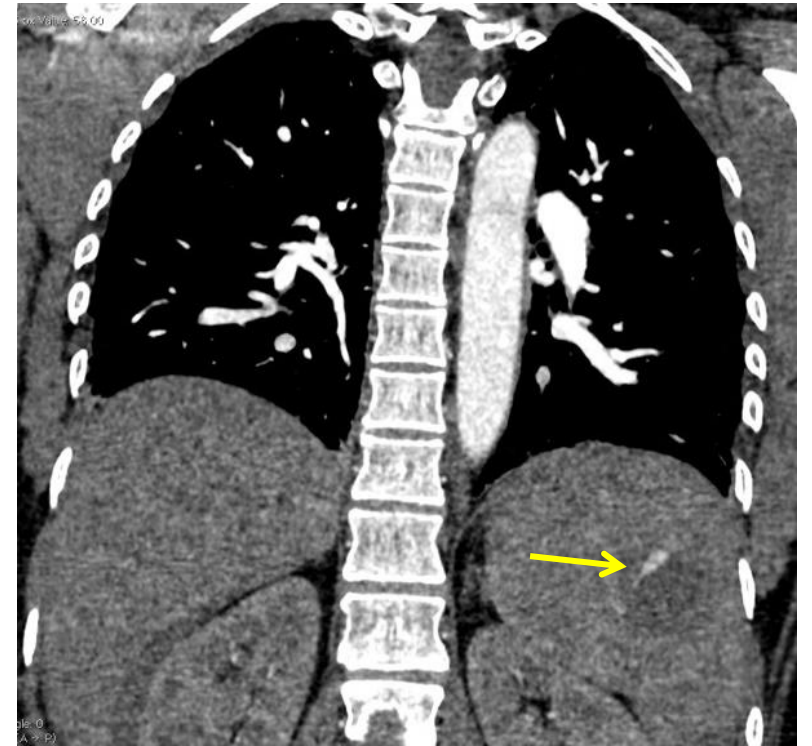


## Abdominal pain, tachycardia, dizziness



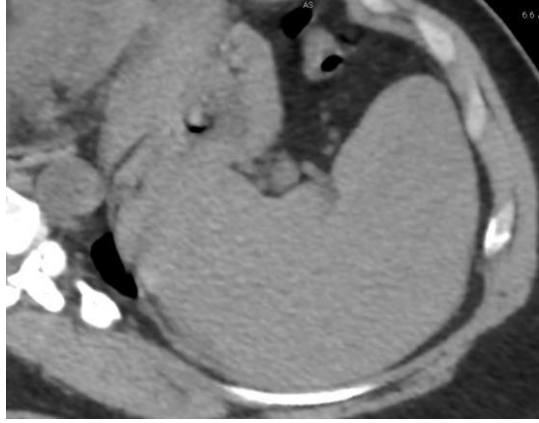
Emergency CT: bleeding HCC; Inferior Vena Cava thrombus

## Dyspnea, left flank pain, suspected pulmonary embolism



Emergency CT: active bleeding, splenic metastasis (melanoma)

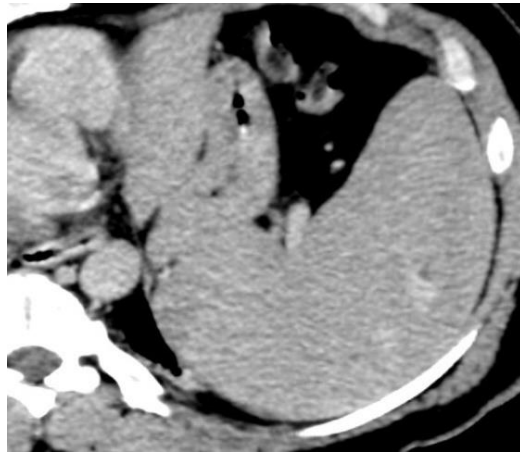
# Acute myeloid leukemia left upper quadrant pain, no fever



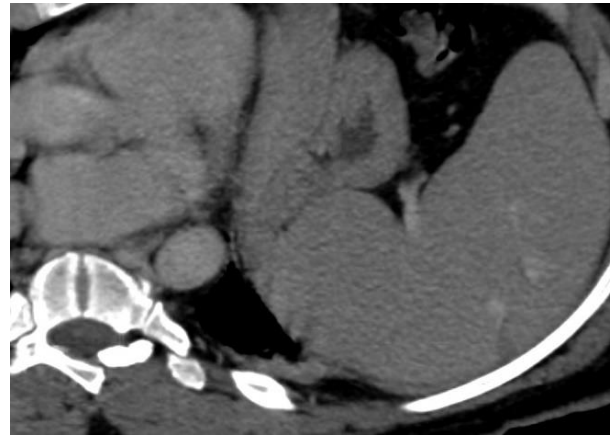
unenhanced



arterial



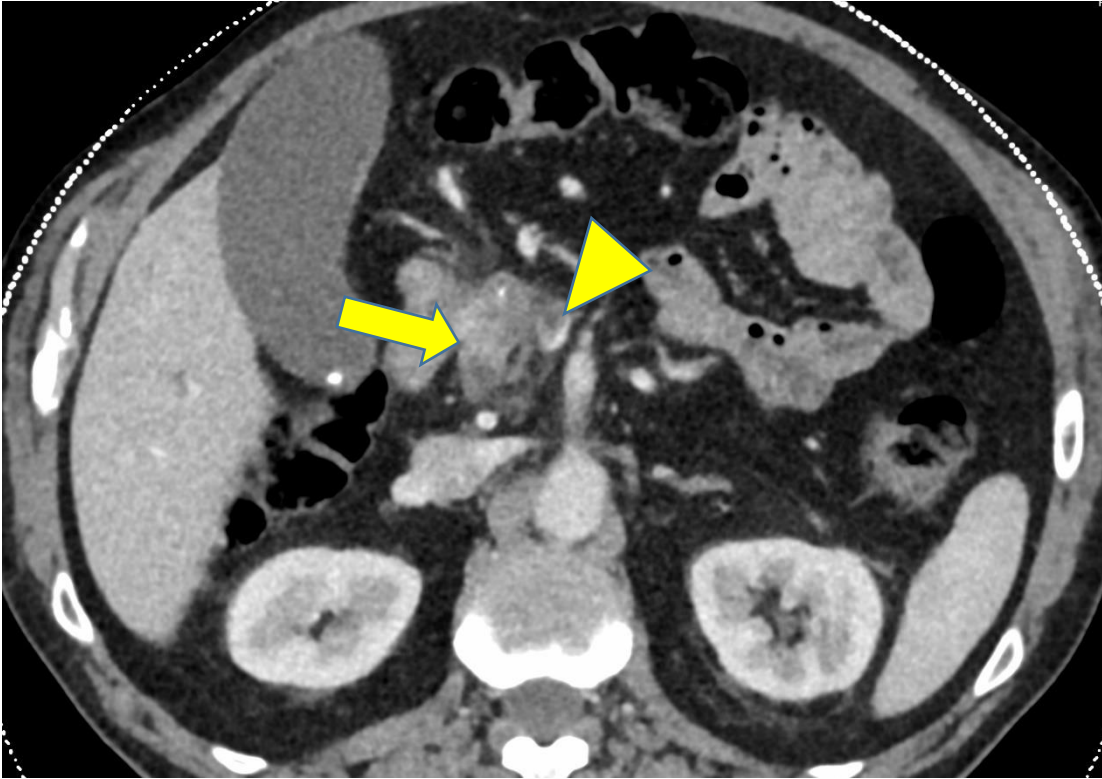
portal



delayed



## Abdominal pain, jaundice



Emergency CT: pancreatic tumor, superior mesenteric vein thrombosis, biliary duct dilatation

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# ABDOMINAL EMERGENCIES IN ONCOLOGIC PATIENTS

## TREATMENT-RELATED

### Neutropenic enterocolitis

- associated with myeloproliferative diseases
- myelosuppressive therapy

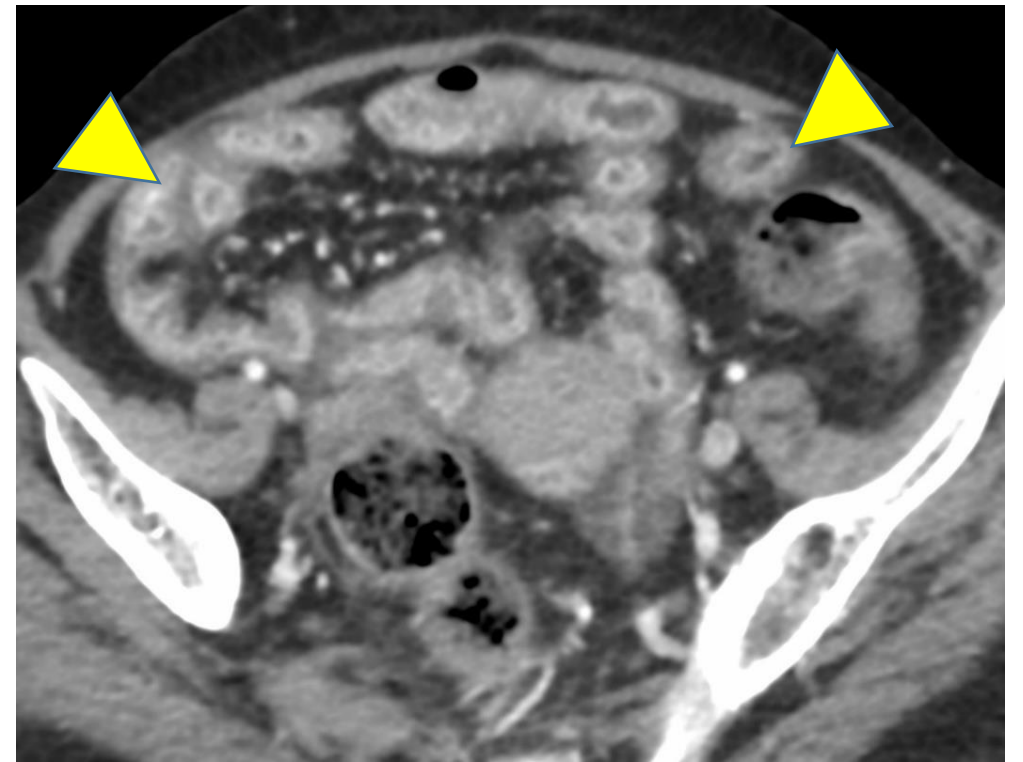
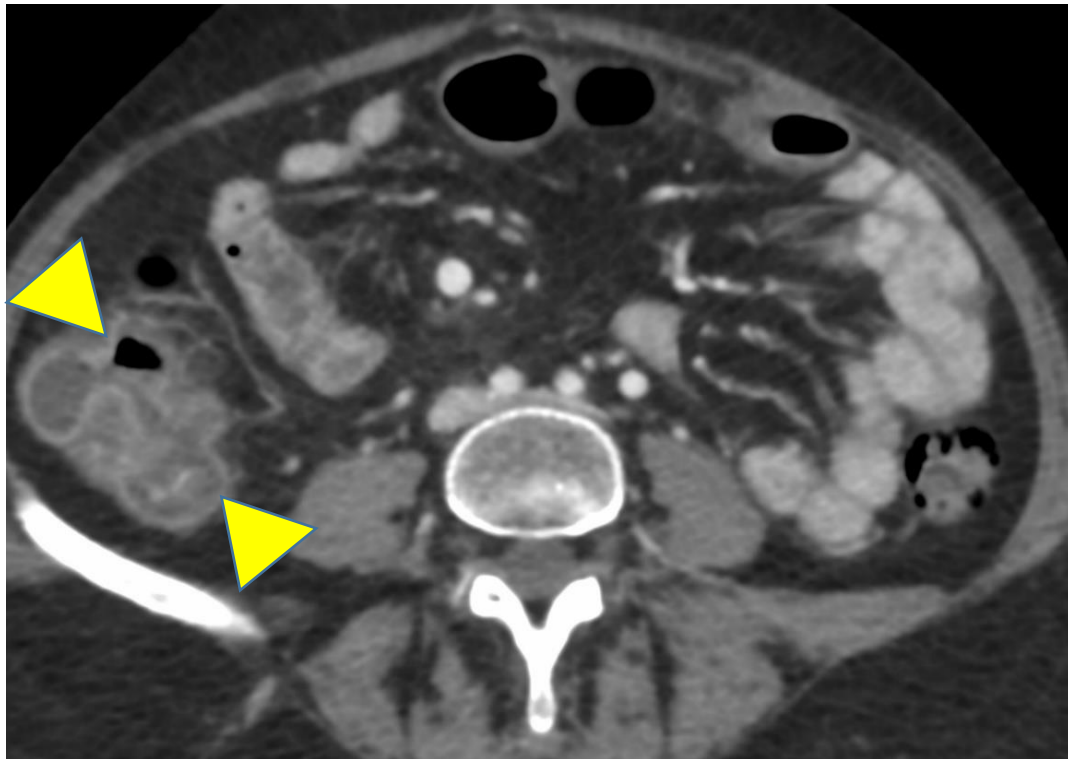
### Pseudomembranous colitis

- immunocompromised patients receiving antibiotic treatment

### Graft-versus-host-disease

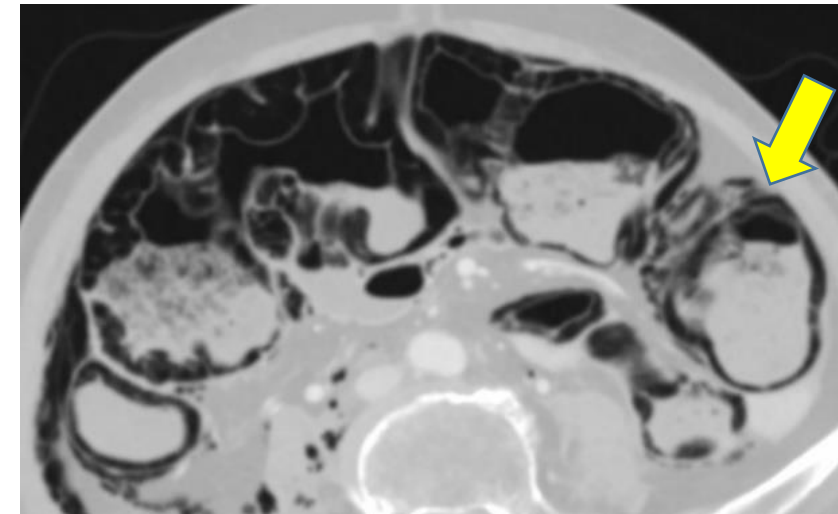
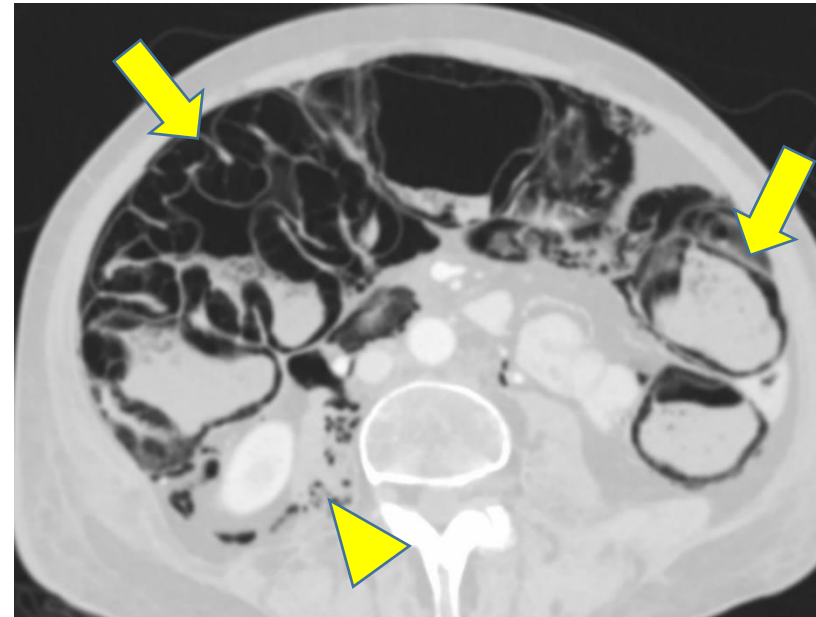
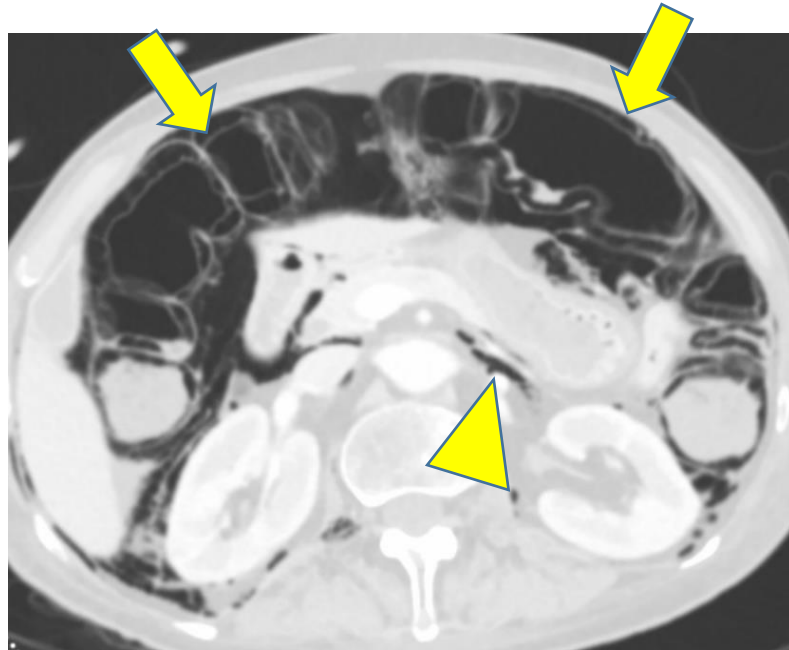
- hematopoietic cell transplantation

## Acute myeloid leukemia, stem cell transplant abdominal pain



Graft-versus-host disease (GVHD)

## Hematopoietic stem cell transplant GVHD, novovirus infection



Pneumatosis intestinalis after stem cell transplantation and immunosuppressive treatment



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Thank you !



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