CT features of pathologic conditions of the mesentery and peritoneum

Poster No.: C-1989
Congress: ECR 2013
Type: Educational Exhibit
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Keywords: Education and training, Diagnostic procedure, CT, Abdomen
DOI: 10.1594/ecr2013/C-1989

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Learning objectives

The purposes of this exhibit are:

- to show the normal anatomy of the peritoneal cavity
- to describe the CT findings and clinical characteristics of the tumors and tumorlike lesions that primarily and secondarily involve the peritoneal cavity.

Background

The peritoneum is a thin serosal membrane of mesodermal origin that encases the peritoneal cavity, composes the mesenteries and omentum, and partially or completely covers the abdominal and pelvic viscera. Its histologic features, developmental origins and functions are identical to those of the pleura and other serosal membranes (pericardium and tunica vaginalis). Hence, the peritoneum can be affected by similar primary pathologic processes that can be found in other serosal membranes.

The major difference between the peritoneum and other serosal membranes is that the peritoneum can be involved in the spread of diseases within the abdomen.

Peritoneal ligaments, mesentery and omentum are folds of peritoneum that divide the abdominal cavity into compartments. This compartmentalization of the peritoneum dictates the flow of fluid in the abdomen and pelvis. It directly affects the anatomic location and distribution of the pathologic processes.

Although the peritoneum can be affected by primary processes, secondary tumors and tumor-like lesions are much more common.

Imaging findings OR Procedure details

NORMAL PERITONEAL ANATOMY

The peritoneum is a thin serosal membrane that covers the surface of the peritoneal cavity.

The peritoneal cavity is a potential space between the two layers of the peritoneum, the parietal and visceral peritoneum.
The peritoneal cavity contains a small amount (50-100ml) of serous fluid.

The *parietal peritoneum* lines the abdominal wall, undersurface of the diaphragm, anterior surface of the retroperitoneal viscera (duodenum, ascending and descending colon, pancreas and portions of the adrenal glands and kidneys) (1), and the pelvis.

The *visceral peritoneum* covers the intrabdominal organs (stomach, jejunum, ileum, transverse colon, sigmoid colon, liver, spleen), omenta and mesenteries.

The peritoneal cavity is closed in males. In females, the peritoneal cavity communicates with the extraperitoneal pelvic spaces through the fallopian tubes.

**Fig. 1** on page 12

**DEFINITIONS:**

Peritoneal ligaments, mesentery and omentum are double layers or folds of peritoneum. Mesentery and omentum are specifically named peritoneal ligaments.

**Peritoneal ligaments:** support a viscera and are usually named according to the two structures they connect:

- Right and left coronary lig.
- Right and left triangular lig.
- Falciform lig.
- Hepatoduodenal lig.
- Gastrohepatic lig.
- Gastroplenic lig.
- Splenorenal lig.
- Phrenicocolic lig.

**Fig. 2** on page 13

**Mesentery:** connects a portion of the bowel to the retroperitoneum. It contains blood vessels, lymph nodes, nerves and fat:

1. Transverse mesocolon
2.- Small bowell mesentery

3.- Sigmoid mesocolon

Omentum: extends from the stomach and duodenal bulb to adjacent organs:

1.- *Lesser omentum* made of:
   - gastrohepatic lig.
   - hepatoduodenal lig.

2.- *Greater omentum or gastrocolic lig.:* located between the stomach and transverse colon. It hangs like an apron from the transverse colon

Fig. 3 on page 14

Fig. 4 on page 15

PERITONEAL SPACES

The peritoneal ligaments and mesenteries subdivide the peritoneal cavity into interconnected compartments.

Fig. 5 on page 16

The transverse mesocolon divides the peritoneal cavity into supramesocolon and inframesocolon compartments.

**RIGHT SUPRAMESOCOLIC SPACES**

- Right subphrenic space
- Right subhepatic space: anterior - posterior (hepatorenal or Morison pouch)

**LEFT SUPRAMESOCOLIC SPACES**

- Left subphrenic space
- Perihepatic space

**SUPRAMESOCOLIC COMPARTMENT**

Lesser sac: superior and inferior recesses

Perisplenic space

The superior and inferior recesses of the *lesser sac* are separated by a peritoneal fold that accompanies the left gastric artery.
The inferior recess communicates with the posterior subhepatic space (Morison's pouch) through the foramen of Winslow.

The root of the small bowell mesentery divides the inframesocolon compartment into the right and left inframesocolic spaces. It extends from the ligament of Treitz in the left upper quadrant to the ileocecal valve in the right lower quadrant.

<table>
<thead>
<tr>
<th>Right inframesocolic space</th>
<th>Left inframesocolic space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right paracolic gutter</td>
<td>Left paracolic gutter</td>
</tr>
</tbody>
</table>

Pelvic spaces: - anterior: medial and lateral compartments - retrouterine / rectovesical space

**INFRAMESOCOLIC SPACES**

The **right inframesocolic space** does not communicate with the pelvis.

The **left inframesocolic space** communicates freely with the pelvis.

The right and left **paracolic gutters** lie lateral to the ascending and descending colon.

The **right paracolic gutter** communicates with the right subphrenic and subhepatic spaces and with the pelvis.

The **left paracolic gutter** is partially communicated with the left subphrenic space by the phrenicocolic ligament, but is freely connected with the pelvis.

The medial and lateral compartments of the **anterior pelvis space** are separated by the umbilical folds.

Posteriorly, the pelvic space is called the **rectovesical space** in men and the **retrouterine space or the Douglas pouch** in women.

**FLOW OF PERITONEAL FLUID**

The peritoneal cavity normally contains a small volume of fluid. The distribution of the peritoneal fluid is determined by the mesenteries and peritoneal ligaments, the action of gravity, and hydrostatic pressure.

The natural flow of peritoneal fluid determine the route of spread of intraperitoneal fluid and pathologic processes within the abdominal cavity.
Fluid introduced into the inframesocolic compartment immediately fills out the posterior and anterior medial pelvic spaces, and then the lateral pelvic compartments.

From the pelvis fluid ascends both paracolic gutters, but it predominantly flows up the right paracolic gutter. It then progresses into the right subhepatic space, particularly draining into the Morison's pouch (its most dependent recess). Then next step is the right subphrenic space.

The falciform ligament prevents direct passage of fluid from the right subphrenic space to the left subphrenic space.

Anatomically Morison's pouch communicates with the lesser sac via foramen of Winslow.

The cephalad extension of fluid from the pelvis through the left paracolic gutter is usually limited by the phrenicocolic ligament.

There are 4 predominant sites of stasis of ascitis and metastatic implants:

1. The rectouterine / retrovesical pouch
2. The ileocolic region
3. Along the sigmoid mesenteric root
4. Right paracolic gutter

Fig. 6 on page 17
Fig. 7 on page 18
Fig. 8 on page 19

**PATHOLOGY**

**Ascites.** Accumulation of fluid in the peritoneal cavity. The most common cause of ascites is advanced liver disease or cirrhosis. Other causes are congestive heart failure, advanced kidney failure, pancreatitis and malignant ascites.

Fig. 9 on page 20

**Pneumoperitoneum.** In the absence of recent surgery usually indicates bowel perforation (especially gastric ulcer). Other causes include dissection from pneumomediastinum, ruptured cysts of pneumatosis intestinalis or from the female genital tract. CT is the most sensitive technique and detects possible causes.
**Hematoma.** May arise as a result of trauma or from spontaneous hemorrhage from a mesenteric vessel. On CT scans, acute hematoma usually appears as a solid, high attenuation mass with somewhat irregular margins.

**Hemoperitoneum.** The blood accumulates in the space between the inner lining of the abdominal wall and the internal abdominal organs. Blood attenuations varies with the time of evolution. In early stage it is between 30-40 HU, when clots, 50-70 HU and can reach 100 HU.

**INFECTIOUS AND INFLAMMATORY CONDITIONS**

**Epiploic appendagitis.** Usually manifests with acute onset of pain, most often in the left lower quadrant. The most common CT features in acute epiploic appendagitis is an oval lesion less than 5 cm in diameter that has fat attenuation with a hyperattenuating ring, abuts the anterior colonic wall, and that is surrounded by inflammatory changes.

**Omental infarction.** Factors that predispose to omental infarction include obesity, strenuous activity, congestive heart failure, digitalis administration, recent abdominal surgery and abdominal trauma. The typical CT findings are a solitary large nonenhancing omental mass with heterogeneous attenuation, which is most often located in the right lower quadrant. Although have a CT appearance that resembles that of acute epiploic appendagitis, it lacks the hyperattenuating ring, is larger than 5cm and is located next to the cecum or the ascending colon.

**Abscess.** Mass of low attenuation with variable morphology. In early stages may be poorly defined. In advanced stages appears as a defined collection with peripheral enhancement. May contain gas bubbles or a pattern of "bread crumbs".
**Sclerosing mesenteritis.** It seems to have a male predilection. When symptomatic, patients may present with a palpable abdominal mass, abdominal pain, weight loss or bowel disturbance.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
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<tbody>
<tr>
<td>Mesenteric panniculitis</td>
<td>Chronic inflammation</td>
</tr>
<tr>
<td>Mesenteric lypodistrophy</td>
<td>Fat necrosis</td>
</tr>
<tr>
<td>Retractile mesenteritis</td>
<td>Fibrosis</td>
</tr>
</tbody>
</table>

**CT features include:**

1. Higher attenuation of the involved mesenteric fat also known as "misty mesentery",
2. Well-circumscribed heterogeneous fatty mass that usually extends from the mesenteric root towards the jejunum,
3. A pseudocapsule may be present
4. Soft tissue density nodules less than 5mm in diameter,
5. *Fat ring sign*: preservation of the low fat attenuation around the mesenteric vessels.
6. A spiculated mesenteric mass that may be partially calcified: in the chronic form or retractil mesenteritis.

Fig. 17 on page 28

**Esclerosal peritonitis** is a rare form of peritoneal inflammation of unknown etiology, and is reported to complicated abdominal dialysis, certain drugs and infectious peritonitis. **CT scans** typically show small bowel congregated in the center of the abdomen, thickened peritoneum, or large locular fluid collection. Diffuse peritoneal calcification may occur in some individuals.

Fig. 18 on page 29

The term **granulomatous peritonitis** encompasses a wide range of unusual forms of peritoneal inflammation and infection that have overlapping clinical, pathologic, and imaging features.

Foreign-body granuloma from a retained sponge is usually an aseptic process that creates adhesions and a thick capsule around the foreign body. The *typical spongiform pattern with gas bubbles* is the most characteristic sign for a retained surgical sponge.

Fig. 19 on page 30
Intraabdominal lymphadenopathy is the most common manifestation of abdominal tuberculosis. Affected nodes often demonstrate rim enhancement in the peripheral inflammatory reaction and a low-attenuation center in the central caseous necrosis or a multilocular appearance.

Enlarged mesenteric nodes can also be seen in some noninfectious inflammatory conditions, such as celiac sprue, Crohn disease, systemic mastocytosis, and sarcoidosis.

Inflammatory Pseudotumor. It is an unusual, benign, chronic inflammatory lesion. Patient usually present with symptoms secondary to mass effect.

One-quarter of patients (commonly young patients) will also have fever, weight loss, anemia, thrombocytosis, and a polyclonal hypergammaglobulinemia.

The CT appearance is variable. The mass may be hypoattenuated or isoattenuated relative to muscle on unenhanced scans. Larger lesions may have central necrosis. Enhancement with contrast material usually occurs but is not pronounced, and include a variety of patterns:

- early peripheral, with delayed central filling;
- heterogeneous;
- homogeneous;
- no enhancement. Fig. 24 on page 35

BENIGN TUMORS

Lymphangioma. Asymptomatic. More common in men. Typically appear as large, thin-walled, usually multiloculated cystic mass at CT. The cyst walls are often imperceptible, but vessels may be seen coursing between locules. Cyst contents can have an attenuation less than that of water due to their chylous nature.
Lipomas arising from subperitoneal adipose tissue are generally of no clinical concern but may be detected incidentally at CT. Lipomas have uniform fat attenuation without a prominent soft-tissue component.

Fig. 26 on page 37

MALIGNANT TUMORS

Primary peritoneal tumors are an uncommon group of diverse pathologic disorders that share a common anatomic site of origin and have overlapping imaging features, yet are distinctly different clinically.

Their imaging appearances overlap with those of diffuse peritoneal metastatic disease and, less commonly, lymphomatous or infectious involvement of the peritoneum.

The most common causes of solid mesenteric masses are non-Hodgkin lymphoma and metastatic disease.

Primary peritoneal serous carcinoma almost always occurs in women (mean age, 56-62 years). Patients typically present with complaints of abdominal distention and pain, increasing abdominal girth and nausea and vomiting. Ascites, peritoneal nodules and thickening, and omental nodules and masses are the most common cross-sectional imaging features. Peritoneal and omental nodules and masses enhance with intravenous contrast material at CT.

Fig. 27 on page 38

Lymphoma that involves the mesentery may manifest varied features, including:

1. a discrete solitary mass or multiple masses (small or bulky, round or lobular);

2. regional or diffuse clusters of enlarged nodes;

3. focal or diffuse ill-defined regions of soft-tissue infiltration.

A classic feature often seen on axial images is the "sandwich" sign, which represents bulky adenopathy that envelops the mesenteric vasculature and fat.

Fig. 28 on page 39

Fig. 29 on page 40
Metastatic disease especially from carcinomas of gastrointestinal tract and the ovary, are the most common malignant processes in the peritoneal cavity.

The progressive involvement of the peritoneum in patients with peritoneal carcinomatosis cause them to complain of abdominal enlargement from ascites or nausea, vomiting, and abdominal pain from bowel obstruction.

Tumor nodules studding the peritoneal surfaces typify peritoneal carcinomatosis.

The imaging findings of peritoneal carcinomatosis vary from multifocal discrete nodules to infiltrative masses. In cross section at CT, this pattern appears like stars in the sky and is referred to as a stellate mesentery.

Omental fat may be replaced with tumor and fibrosis, producing the classic gross appearance often referred to as omental caking.

Fig. 30 on page 41

Fig. 31 on page 42

Fig. 32 on page 43

Fig. 33 on page 44

Fig. 34 on page 45

Fig. 35 on page 46

Carcinoid Tumor. Midgut carcinoid tumors are considered the classic form of the disease. Metastatic disease occurs in approximately 30%-50% of patients. Patients may be asymptomatic; have vague abdominal symptoms for many years; or may present with a palpable mass, abdominal pain, diarrhea, bowel obstruction, or gastrointestinal bleeding.

Differential diagnosis usually includes disorders as inflammatory pseudotumor, desmoid tumor and sclerosing mesenteritis.

At CT, the usual appearance of mesenteric disease is an ill-defined enhancing soft-tissue mass. In an estimated 70% of cases, the mass contains calcification. Three-dimensional CT angiography can be useful to depict the full extent of mesenteric disease and the degree of involvement of vascular structures. Liver metastases are common.

Fig. 36 on page 47
**Pseudomyxoma peritonei** (or *jelly belly*). It occurs more commonly in women. It represents a ruptured of *benign or malignant mucin-producing tumor*. Many authors suggested that pseudomyxoma be divided into two categories:

<table>
<thead>
<tr>
<th>Peritoneal adenomucinosis</th>
<th>Low grade mucinous carcinomas</th>
<th>Do not invade stroma</th>
<th>To spread along the peritoneal surfaces</th>
<th>Indolent clinical course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peritoneal mucinous carcinomatosis</td>
<td>High grade invasive mucinous carcinomas (gastrointestinal tract, gallbladder, pancreas and ovary)</td>
<td></td>
<td>Large pools of mucin</td>
<td>Fatal clinical course</td>
</tr>
</tbody>
</table>

**At CT**, pseudomyxoma peritonei appears as a:

1. Low-attenuation, frequently loculated fluid collection in the peritoneal cavity, omentum, and mesentery

2. *Scalloping of visceral surfaces*, especially the liver, is the diagnostic characteristic that distinguishes mucinous from serous ascites at CT

3. Curvilinear or amorphous calcifications may be present.

**Fig. 37** on page 48

**Images for this section:**
Fig. 1: Peritoneal ligaments, mesentery and omentum are double layers or folds of peritoneum. Mesentery and omentum are specifically named peritoneal ligaments.
**Fig. 2:** Diagram shows the perihepatic ligaments and the bare area of the liver.
GREATER OMENTUM

- GASTROCOLOIC LIGAMENT
- GASTROESPLENIC LIGAMENT
- GASTROFRENIC LIGAMENT

LESSER OMENTUM

- GASTROHEPATIC LIGAMENT
- HEPATODUODENAL LIGAMENT
  (hepatic portal vein, hepatic artery, common bile duct)

Fig. 3
Fig. 4: The omentum is divided into the greater and lesser omentum. The greater omentum is subdivided into: Gastrocolic ligament (yellow arrow): the largest component Gastroplenic ligament: up to the hilus of the spleen Gastrophrenic ligament: not shown on this illustration The lesser omentum is subdivided into: Gastrohepatic ligament: connects the left lobe of the liver to the lesser curvature of the stomach. Hepatoduodenal ligament (blue arrow): free edge of the omentum, which contains the portal vein, hepatic artery and common bile duct.
Fig. 5: The mesentery of the small intestine has an oblique orientation from the ligament of Treitz, in the upper left quadrant to the ileocecal junction, in the lower right quadrant.
**Fig. 6:** The natural flow of peritoneal fluid determines the route of spread of intraperitoneal fluid and pathologic processes within the abdominal cavity. There are areas of fluid stasis: • Ileocolic region • Root of the sigmoid mesentery • Pouch of Douglas (women) / retrovesical space (men) • Right paracolic gutter
**Fig. 7:** Abdominal sepsis secondary to perforated gastric ulcer in a patient 77 years old. Abundant liquid in supramesocolic compartment (left and right subphrenic space, perihepatic space and perisplenic space and lesser sac). Falciform ligament is observed (orange arrow).
**Fig. 8:** Fluid fills out pelvic spaces, and then ascends both paracolic gutters. It predominantly flows up the right paracolic gutter. It then progresses into the right subhepatic space, particularly draining into the Morison's pouch. Then next step is the right subphrenic space. There is communication between the left inframesocolic space and the pelvic spaces.
Fig. 9: Enolic pacient with ascites. Cirrhotic liver. Abundant perihepatic fluid, perisplenic, between bowel loops, left and right paracolic gutters, left inframesocolic and pelvic spaces. Umbilical hernia with fat and vessels.
Fig. 10: Axial enhanced CT of patient with acute abdominal pain. Note air bubble in the non-dependent part of the abdominal cavity due to perforated duodenal ulcer. There is liquid in perihepatic space.
Fig. 11: Axial and coronal enhanced CT shows focal increased density of the mesenteric fat, with high density areas suggestive of bleeding in a patient with multiple trauma.
Fig. 12: 35 y.o. patient with acute abdominal pain. Axial enhanced CT shows high density fluid consistent with hemoperitoneum from ruptured splenic artery aneurysm.
**Fig. 13:** 66 y.o. female patient with anemia and hypotension post cholecystectomy. High density layered fluid in perihepatic and subhepatic spaces, paracolic right gutter and Douglas pouch, secondary to hematoma in different phases. Aerobilia in left hepatic lobe.
**Fig. 14:** Axial contrast-enhanced CT, and coronal and sagittal reformatted images show a tubular fat attenuations lesions with hyperattenuating rim and stranding of adjacent tissue located in the left flank, a typical finding in acute epiploic appendagitis.
**Fig. 15:** 35 y.o male patient with pain in the right iliac fossa. Axial and coronal enhanced CT show large heterogeneous hazy area of fat adjacent to ascending colon consistent with omental infarction.
Fig. 16: Fever and progressive deterioration in a patient with recent surgical history (aortic aneurysm). Axial and coronal contrast enhanced CT show a fluid collection with peripheral enhancement that contacts with bowel loops consistent with abscess.
Fig. 17: 1. Mesenteric panniculitis in a 28 y.o. man with vague abdominal symptoms. Axial (a) and (b) coronal enhanced CT images show mesenteric soft-tissue infiltration that is characteristically localized to a jejunal segment, spares the perivascular fat, and has a pseudocapsule appearance. 2. Esclerosal mesenteritis. Axial (a) and coronal (b) enhanced CT show mesenteric mass with soft tissue density. Includes the superior mesenteric artery and its branches. Surgical clips (surgical history 20 years ago.)
Fig. 18: Sclerosing peritonitis 65 y.o. patient with symptomatic intestinal occlusion. Peritoneal thickening and clumping of jejunal loops. Mesenteric fat stranding and small amount of ascites.
**Fig. 19:** Increased density and trabeculation omentum and mesentery secondary to inflammatory / infectious process of the omentum in patient with previous surgery.
Fig. 20: Axial and coronal enhanced CT in 38 y.o. patient. Inflammatory reaction due to falling stone in the surgical field during a cholecystectomy. Focal increased density of subcutaneous fat (inflammatory changes).
Fig. 21: Gossypiboma in a 66 y.o. man who had undergone Hartman surgery. CT studies have described the foreign body as a sharply defined, oval mass with metallic densities and an enhancing wall. The absence of central enhancement is likely due to a trapped clot within the sponge, and the peripheral enhancement is due to inflammatory reaction. Note the radiopaque markers observed in topogram.
Fig. 22: A 44 y.o. female studied by generalized lymphadenopathy and brain mass. Brain biopsy showed necrotizing granulomatous inflammation consistent with tuberculosis. Contrast-enhanced CT shows a heterogeneous adenopathy in the gastrohepatic ligament affected.
**Fig. 23:** Peritoneal sarcoidosis in a 80 y.o. woman with increased abdominal distention, nausea, and vomiting. Axial and coronal contrast-enhanced CT image show ascites as well as mild but diffuse soft-tissue thickening involving the mesentery, omentum, and parietal peritoneum.
**Fig. 24:** Inflammatory pseudotumor in 17 y.o. woman. CT scan obtained after intravenous and oral administration of contrast material shows a well-circumscribed, nonenhancing soft tissue mass in the small bowel mesentery.
Fig. 25: Male patient with palpable abdominal mass. Contrast-enhanced CT scans shows a large lobulated cystic mass of well-defined margins. The mass displaces neighboring anatomical structures.
**Fig. 26:** Examples of lipomas in different patients. Well-circumscribed lesions with uniform fat attenuation. No soft-tissue component is present.
Fig. 27: Peritoneal serous papillary carcinoma in 73y.o. female with increased abdominal circumference. The axial and coronal contrast enhanced CT scans show multiple solid lesions in greater omentum. Retroperitoneal lymphadenopathy. Abundant ascites (asterisk)
Fig. 28: Diffuse large B-cell non-Hodgkin lymphoma with intestinal involvement in 48 y.o. female patient with left abdominal mass, weight loss and night sweats. Lobulated hypodense mass with peripheral enhancement in contact with intestinal loop. Ahead the mass, there is a necrotic adenopathy.
Fig. 29: Mesenteric Follicular lymphoma in a 55 y.o. man patient. Homogeneous hypoattenuating mesenteric mass that encases branches of the superior mesenteric artery. The mass proved to be a conglomerate of neoplastic lymph nodes. Note hepatic hilar adenopathy and in gastrohepatic ligament. Splenomegaly.
Fig. 30: Ovarian neoplasm in 71y.o. female patient. Thickening of omentum and peritoneal nodularity support omental cake and peritoneal implants. Ascites.
Fig. 31: Extramedullary plasmacytomas in a patient with known multiple myeloma. Axial and coronal contrast-enhanced CT scans show multiple peritoneal and retroperitoneal soft-tissue nodules.
Fig. 32: Metastatic melanoma in a 47y.o. woman with abdominal pain. Axial and coronal contrast enhanced CT show mildly enhancing nodules infiltrating de mesentery and the peritoneum. Perihepatic ascites, perisplenic, paracolic gutters, between intestinal loops and pelvis. Right inguinal hernia with fluid and implant
Fig. 33: Patient diagnosed with cholangiocarcinoma. CT with contrast on axial and coronal displays abundant ascites and peritoneal implants
**Fig. 34:** Enhanced CT scan in 55 y.o. man patient with rectal adenocarcinoma. Solid thickening of greater omentum support omental cake. There are also focal nodular peritoneal thickening by neoplastic implants.
Fig. 35: 72 y.o. female with bilateral ovarian serous adenocarcinoma. Extensive involvement of the entire greater omentum by a solid lesion that rejects the frame colic and bowel loops. The injury is consistent with omental cake. Note the important vascularization of the lesion. Ascites
Fig. 36: Coronal enhanced CT scans of 50 year old male patient. Mesenteric metastases of neuroendocrine tumor of the small intestine. Solid lesion with central calcification in intimate contact with a small bowel loop. Note liver metastases.
Fig. 37: 1. Scalloped liver by accumulation of mucoid material (arrows). Apendicitis perforated by appendiceal mucinous tumor. 2. Ovarian and appendiceal mucinous tumor. Axial (a) and (b) coronal enhanced-CT scan large ovarian tumor surrounded by perihepatic and omental mucin (asterisk).
Conclusion

1. **Secondary** peritoneal tumors and tumorlike lesions are more common than primary lesions.
2. **Metastatic disease** should be the initial concern in a patient with ascites, peritoneal nodularity, and omental masses at imaging.
3. Knowledge of the spectrum of imaging findings of peritoneal and mesenteric lesions along with their clinical characteristics, is important in the evaluation of patients with diffuse peritoneal disease.

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Personal Information