腹痛－醫學的陷阱

中國醫藥大學附設醫院

內科部　消化系

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2009/10/25

Case 1 presentation

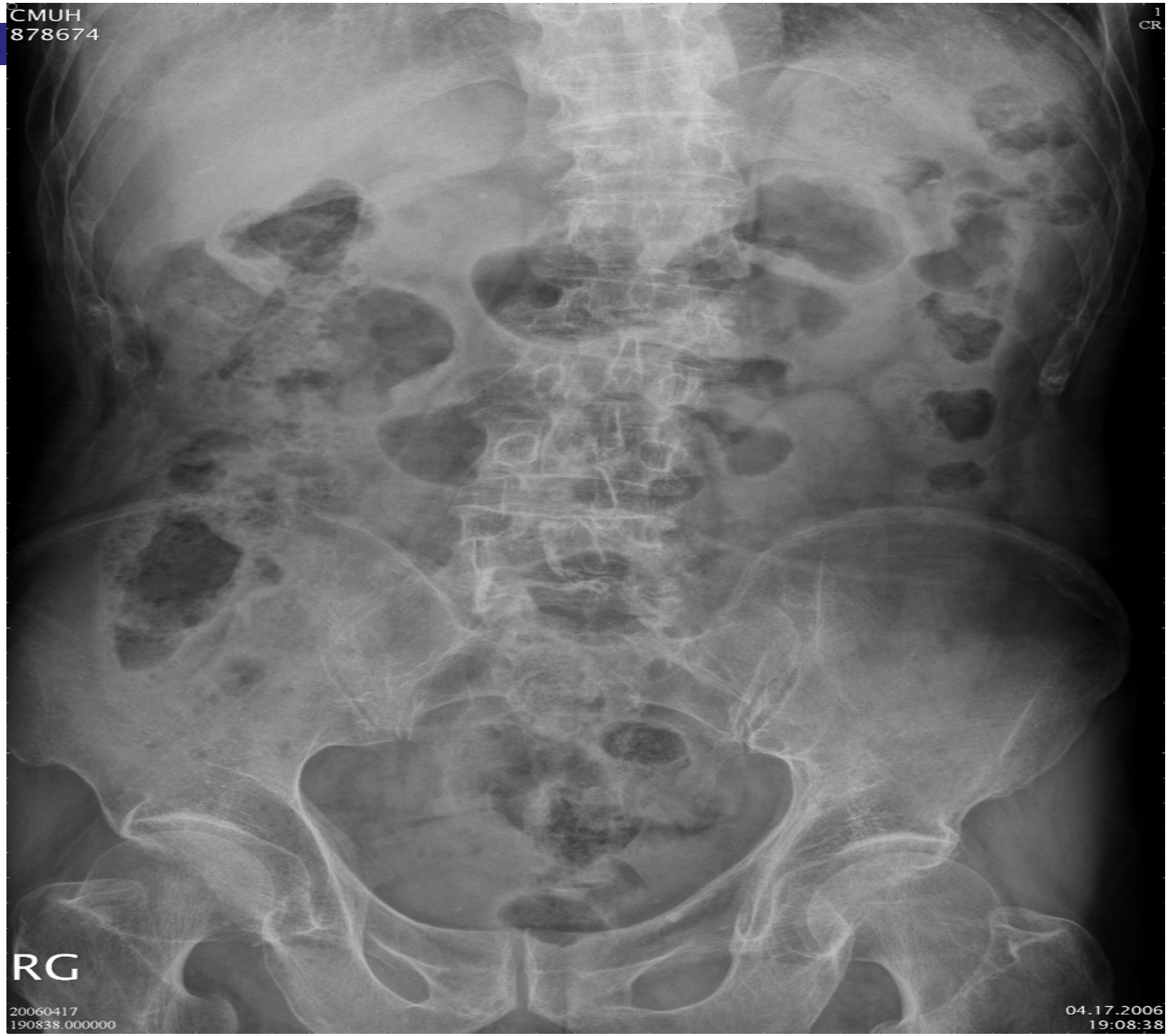
- A 74 years old male, retired solider
- Past history: COPD for years
- Chief complaint: intermittent epigastric pain since last afternoon-ER
- One year ago: constipation
- Constipation and COPD control at local clinics

Case presentation

- Conscious: alert, well oriented
- PE: BT 38.5^{o}c BP 104/51, PR 93
- HEENT: Pale conjunctiva. Anicteric sclera
- Abdomen: epigastric tenderness, muscle quarding, palpable mass over epigastric area

Case presentation

- Lab data: Hb 9.8, WBC 11030, N 87.4%
  MCV 71.4. BUN 17, Cr 0.7
- Blood culture: Alcaligenes Faecalis
- KUB:
- Abdominal CT:
- Colonofibroscopy: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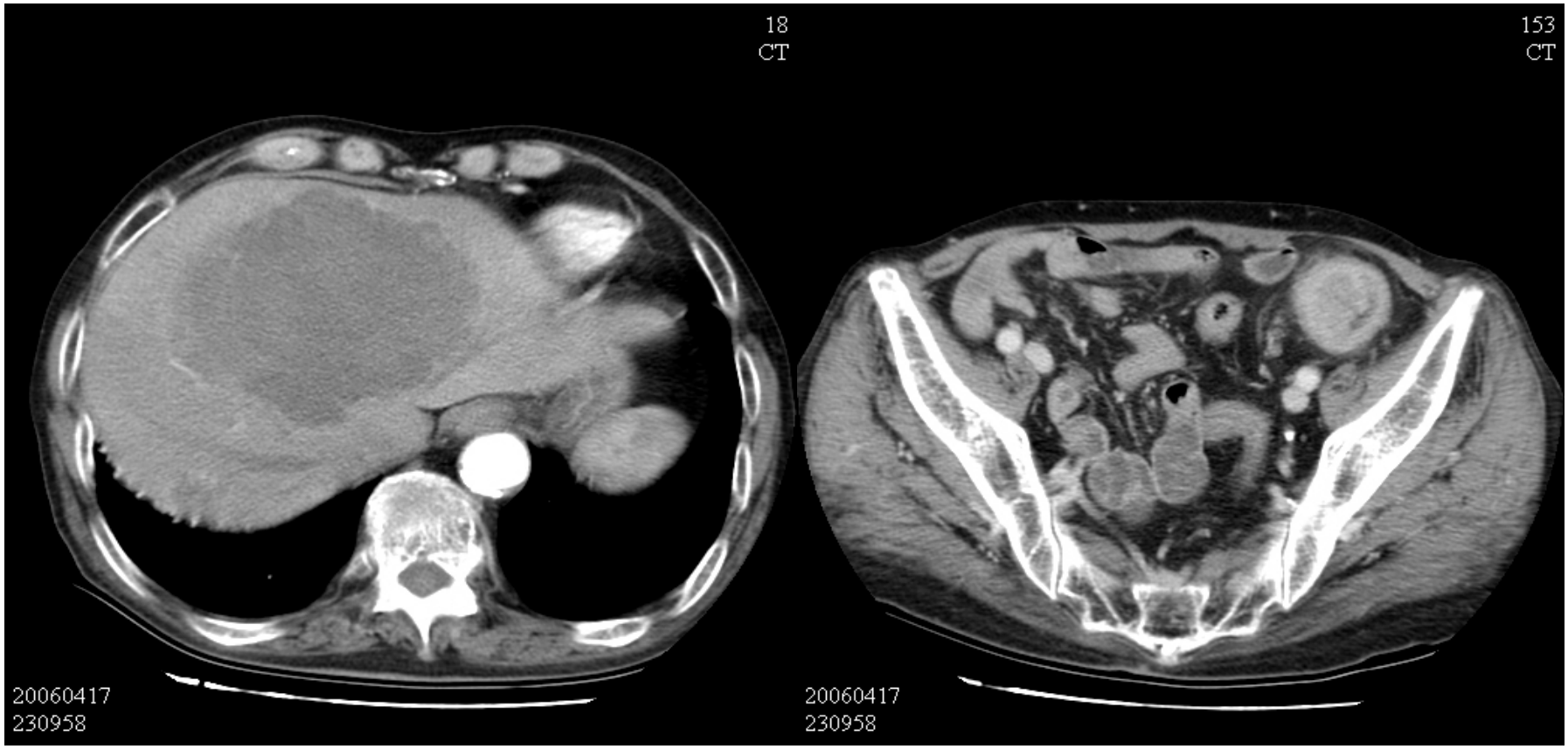
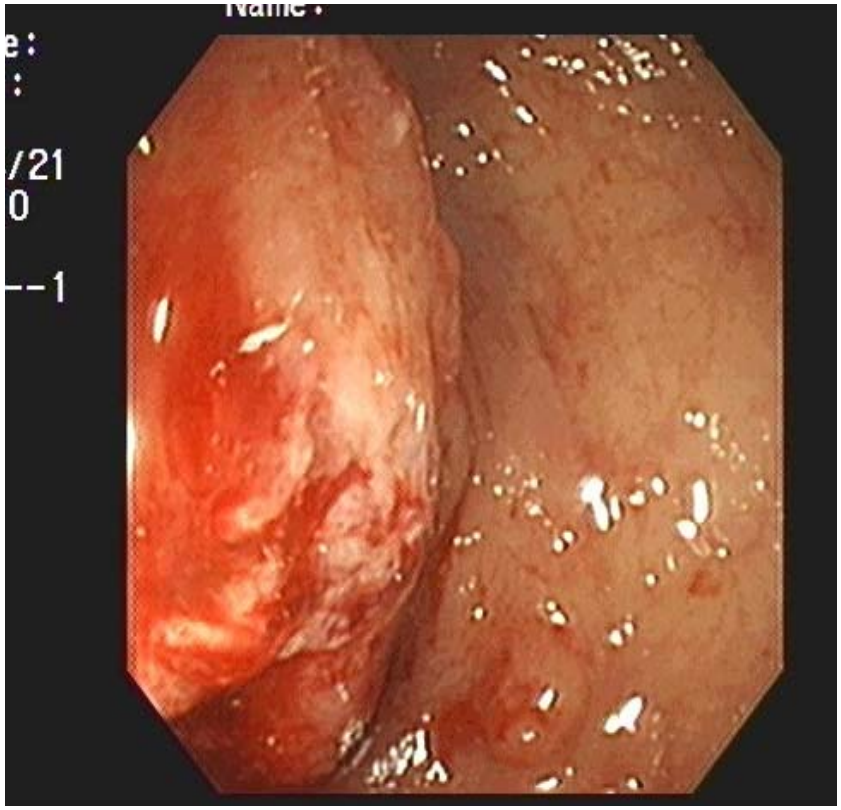
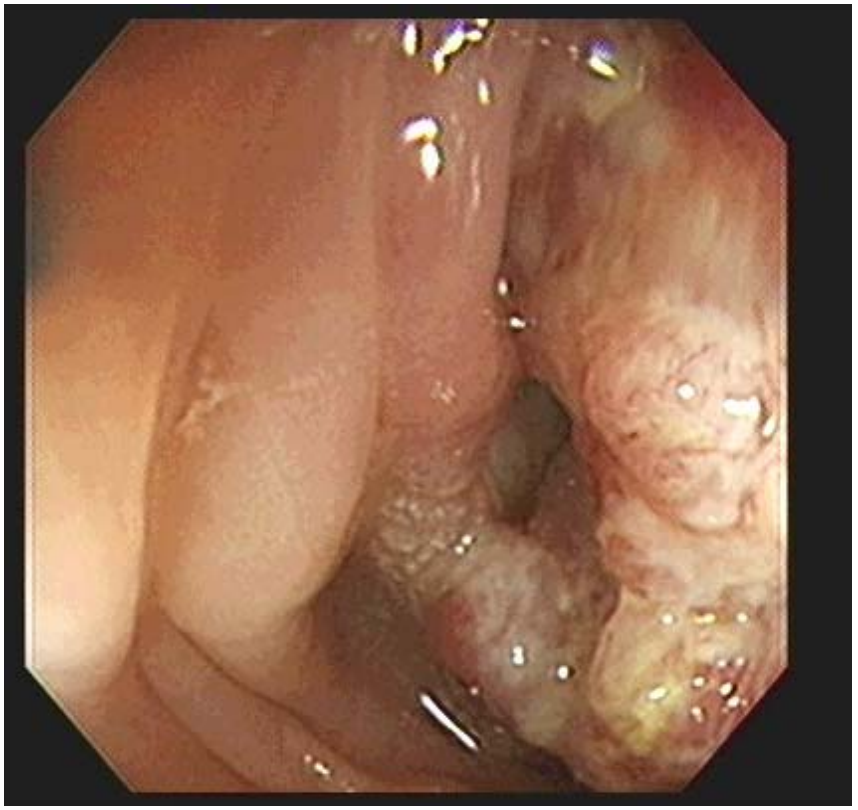
Abdomen CT



Colonofibroscopy





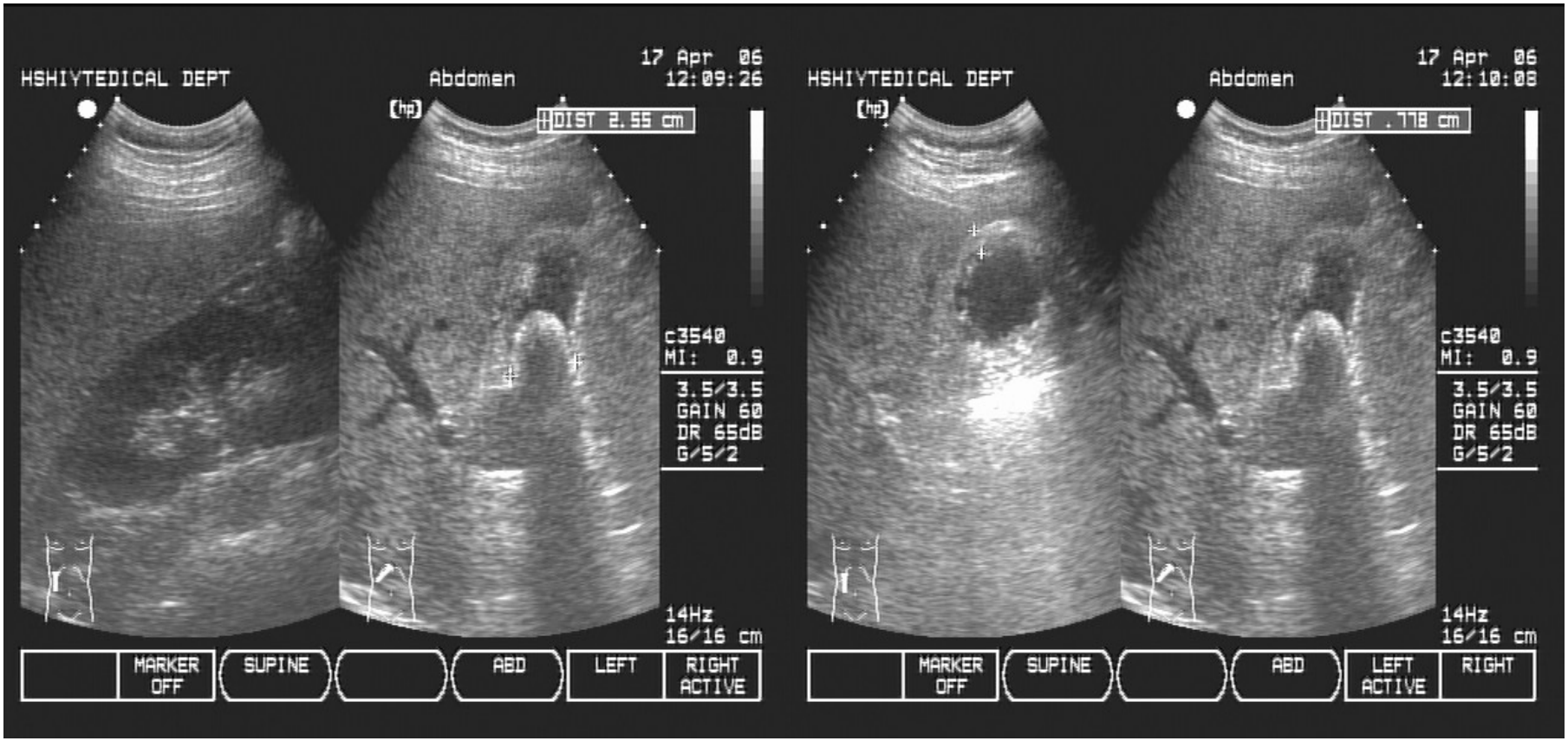
Case 2 presentation

- 38 years old male businessman with history of urolithiasis
- Chief complaint: intermittent epigastric pain for 5 days
- Visiting family clinics, taking some antacid
- 2 days before this admission: tarry stool
- Panendoscopy: GERD

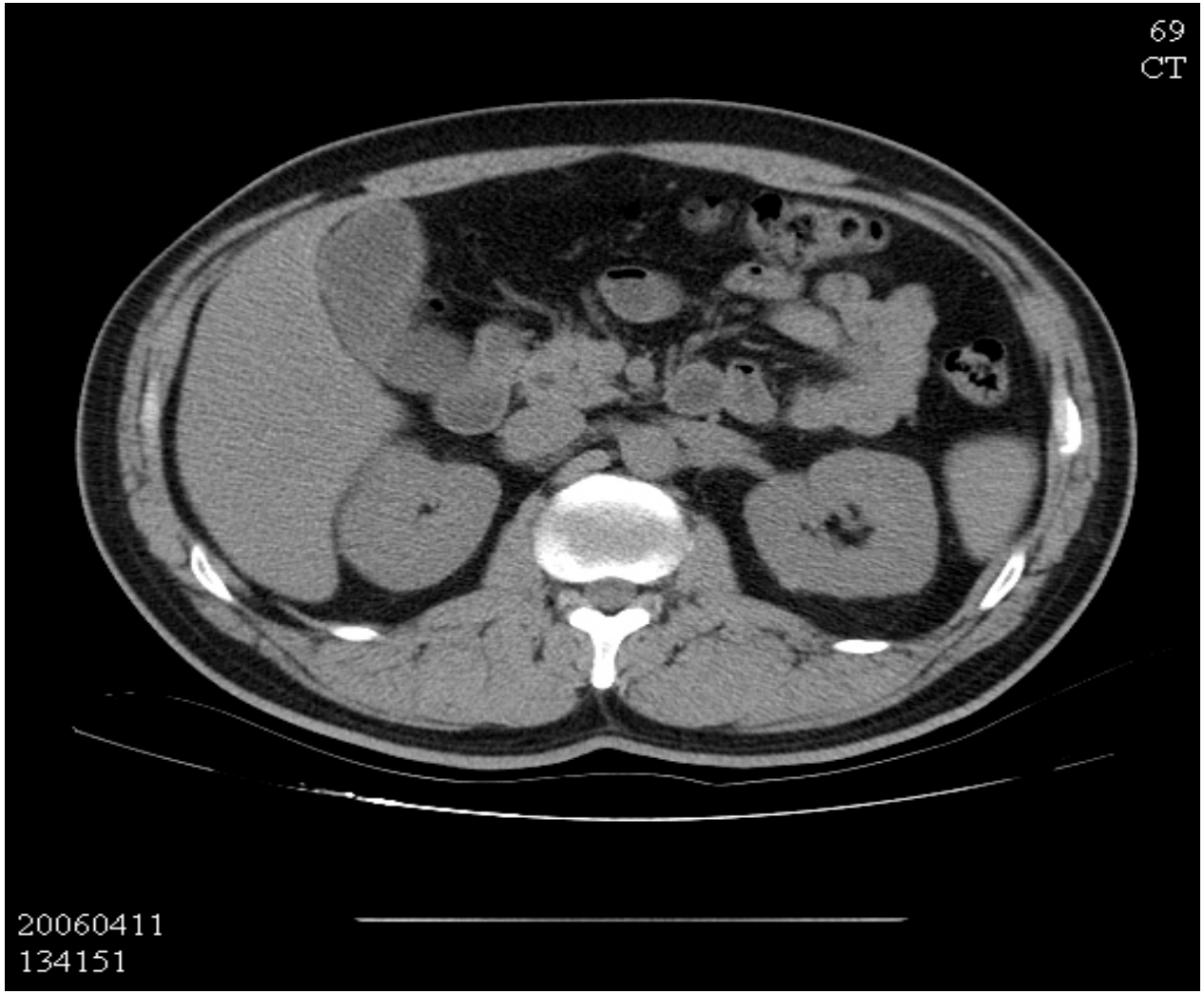
Case presentation

- Epigastric pain got worse-ER
- Vital sign: BT: 35.8, BP 141/81.
- HEENT: mild icteric sclera
- Abdomen: Murphy’s sign-positive, muscle guarding
- Lab data: Hb 15.2, RBC 4.79, WBC 8610
- Bio: SGOT 290, SGPT 538, Bil-T 2.22, Bili-D 1.32, amylase 70, lipase 28, Alk-P 166.
- Hepatitis marker: HBS Ag negative. HCV Ab negative

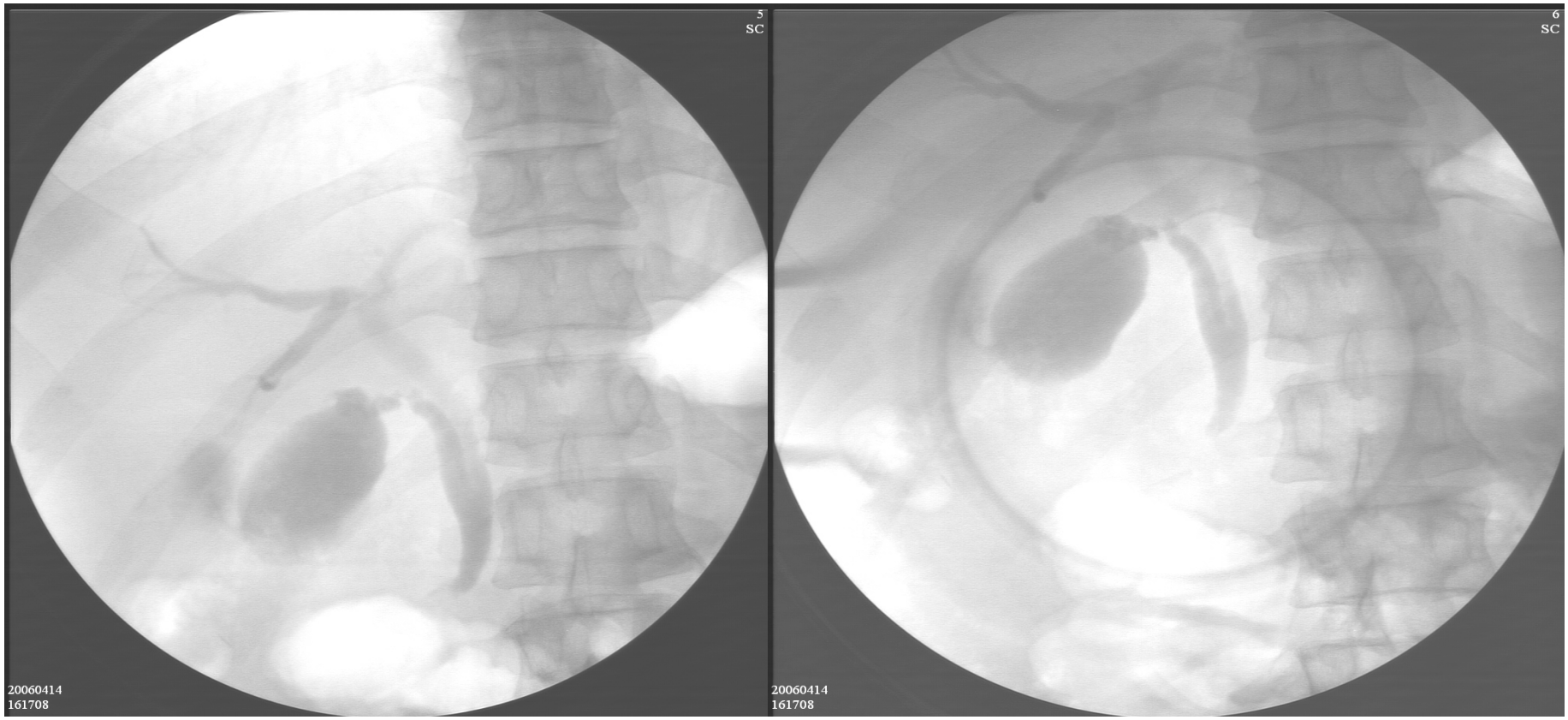
Abdomen echo



Abdomen CT



ERCP



前 言

- 腹痛是十分常見之症狀，引起腹痛的原因很多，可涉及到身體的各個系統。有的病因是輕微的，有的可能是很嚴重的疾病，甚至短時間內對生命構成危險。
- 腹痛爲臨床醫師經常面對之挑戰，因爲若不慎將腹部急症誤診爲內科疾病，常造成病人重大的傷害，甚至危及性命。
- 對於任何急性或慢性之腹痛，必須儘早作徹底之評估，以求獲得正確的診斷。要做出正確診斷，必須對引起腹痛的原因或機轉有更深的認知。

腹部的解剖

- 消化系統由胚胎時期的前腸、中腸與後腸，分別演化出不同的器官。
- 腹腔之解剖構造
  - 由內而外，由腸腔內黏膜，平滑肌，漿膜，其外腹膜，腹壁肌肉層，皮下組織至皮膚。
  - 上有橫膈，下爲骨盆腔。
  - 橫膈上有心臟，肺臟；下方前有膀胱，後有直腸，兩者其中則有子宮、卵巢(女性)，輸精管及攝護腺(男性)等生殖器官。後上有腎臟及胰臟，後下爲腰肌，由後上直直而下者爲脊椎及大動靜脈。
  - 在前方腹壁肌肉包覆下，腸胃道由食道與胃交接之賁門起，胃，幽門，十二指腸，空腸、迴腸、大腸、直腸至肛門而止，成人四、五公尺的胃腸道就曲折地繞行在腹部這七、八公升容積的腹腔中。
  - 另外，有肝臟、膽囊及膽道系統位於腹腔右上方，胰臟位於上腹部胃之後方，及脾臟位於左上。

腹部區域劃分

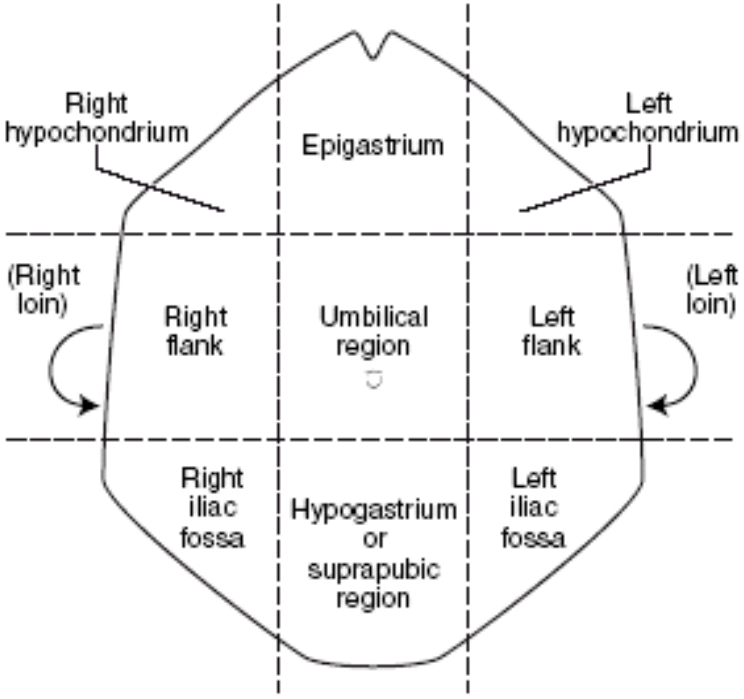


Fig. 16.4 The abdomen divided into ninths.

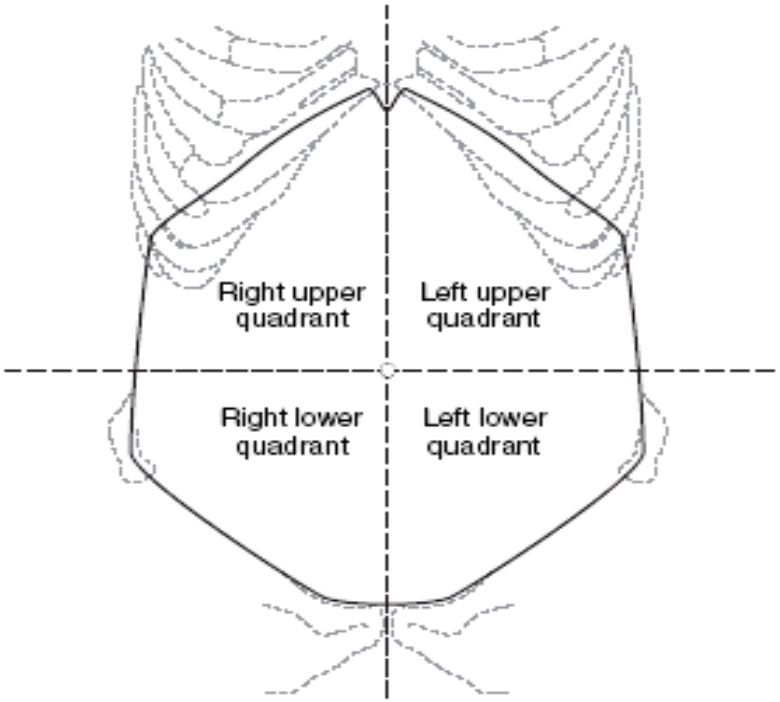
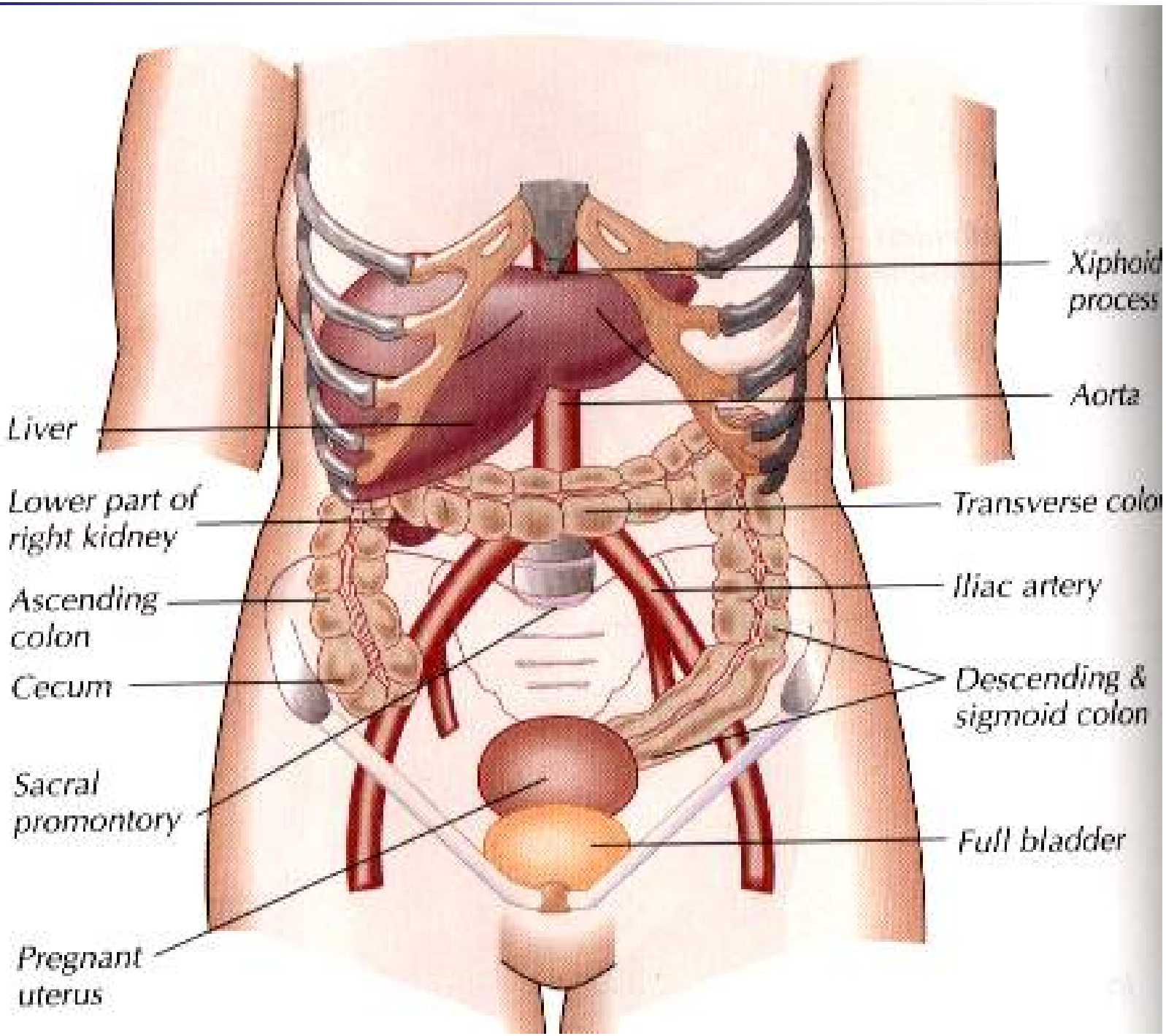
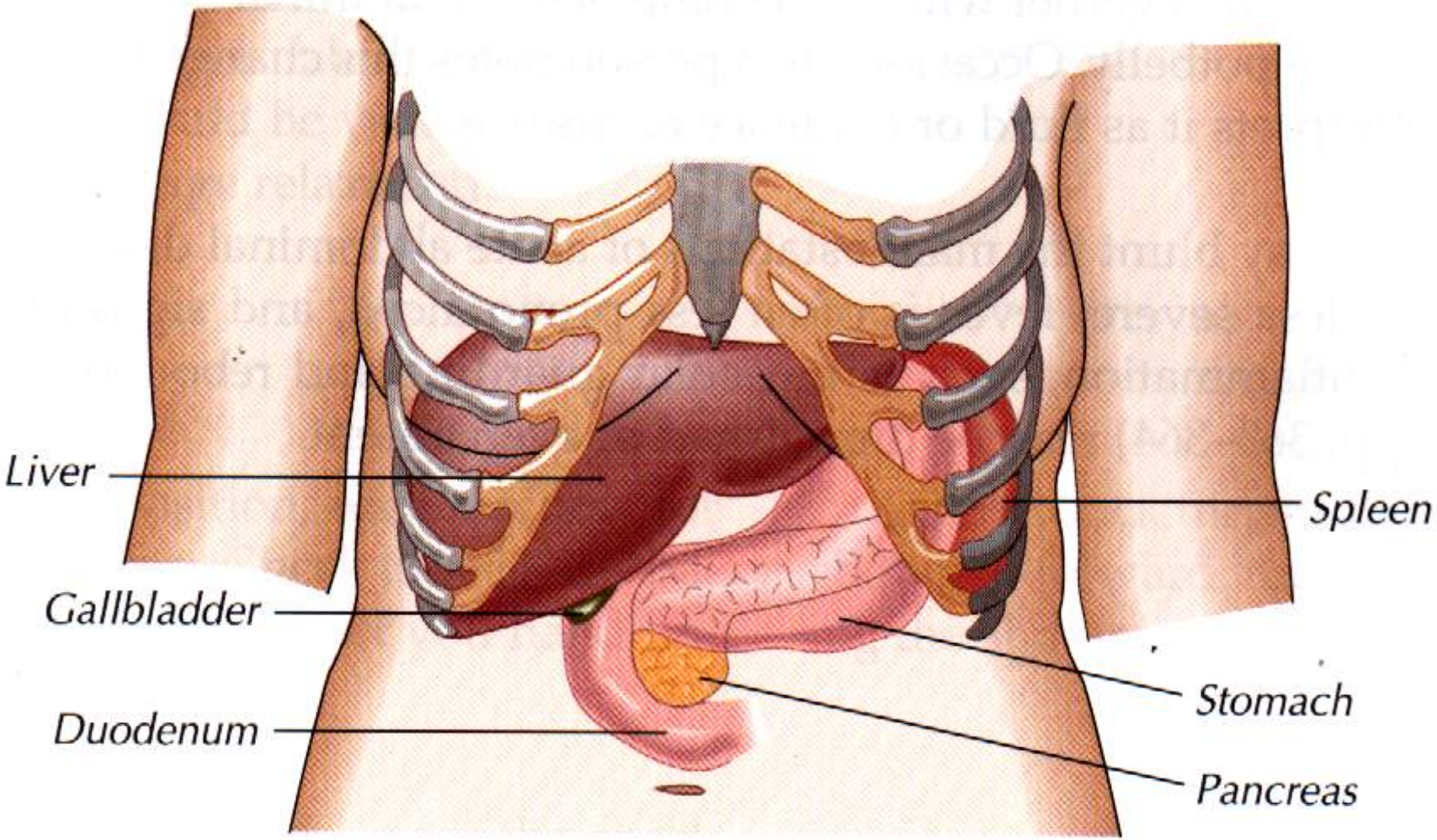
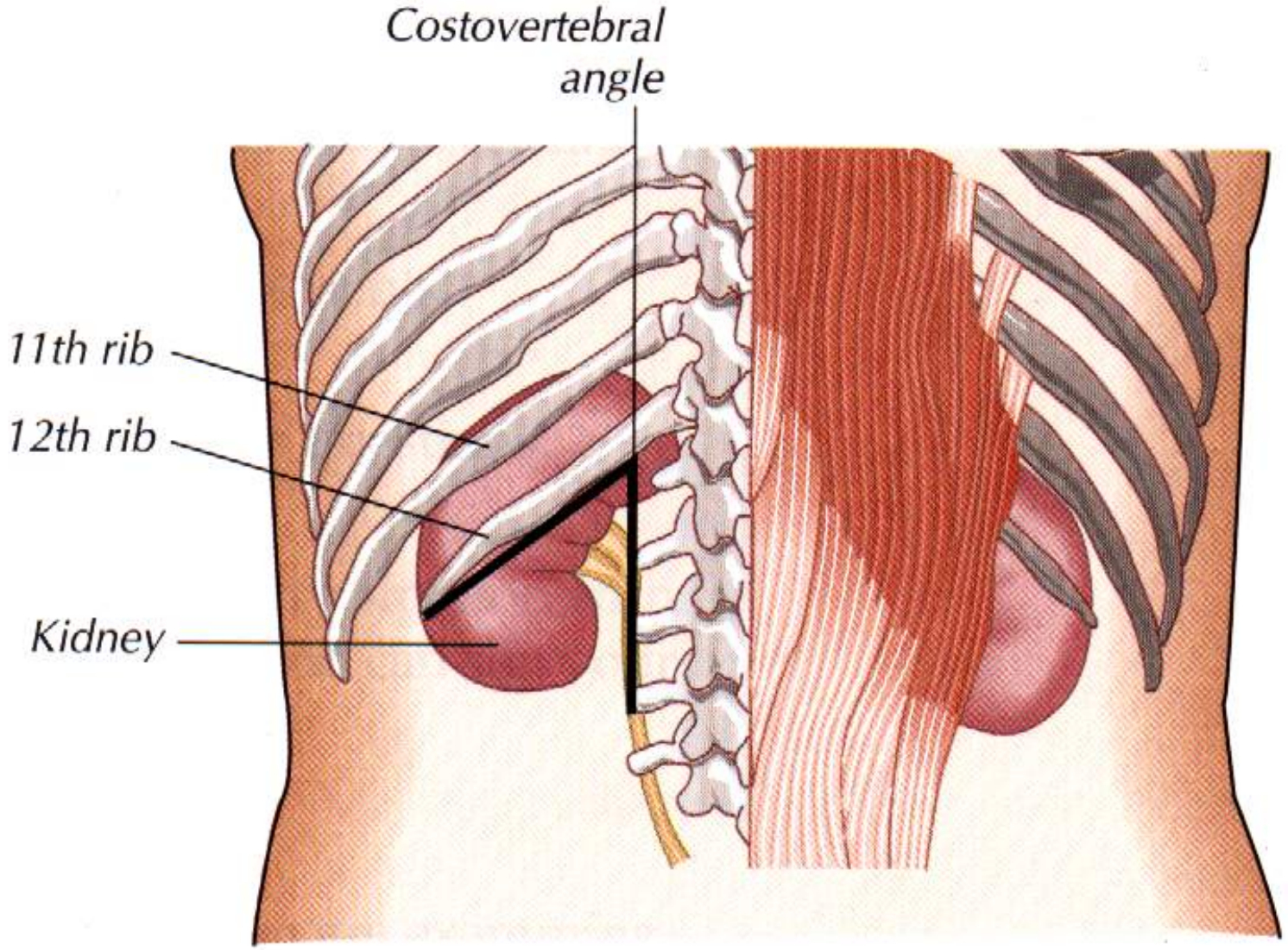


Fig. 16.3 The four quadrants of the abdomen.


Xiphoid process
Aorta
Liver
Lower part of right kidney
Transverse colon
Iliac artery
Ascending colon
Cecum
Descending & sigmoid colon
Sacral promontory
Full bladder
Pregnant uterus



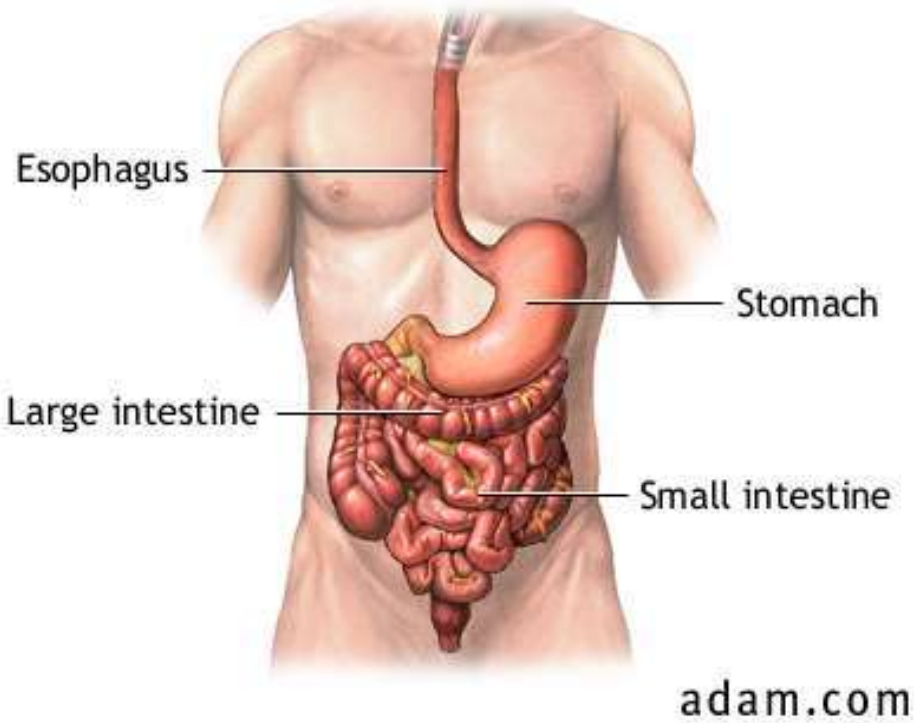
ANTERIOR VIEW



POSTERIOR VIEW

消化道的解剖

- 整個胃腸道起始於口腔，經過食道、胃、小腸、大腸、直腸，而終止於肛門口。
- 整個胃腸道爲一長條、中空、肌肉性的管狀構造。它能夠允許食物通過及將養份吸收。



腹部的解剖

- 血管供應
  - 動脈方面: 由腹主動脈幹、上腸繫膜動脈及下腸繫膜動脈供應生理所需養份及氧氣。
  - 靜脈方面: 則由脾靜脈、上腸繫膜靜脈及下腸繫系膜靜脈所聯合形成之肝門靜脈系統，將腸道所吸引之各種養份送至肝臟代謝及儲存。另外，其餘器官的代謝血液則由下腔靜脈送回心臟。
- 神經支配
  - 臟器神經支配臟器腹膜以內，對張力，化學刺激較爲敏感。
  - 臟器腹膜以外由體神經支配，對針刺，刀割較敏銳。

腹部之血液供應

- 腹主動脈幹(Celiac Trunk)
  - 主要分支:總肝動脈, 脾動脈, 左胃動脈.
  - 供應器官: 消化道之前腸部份.包括肝臟, 膽道系統, 胰臟, 胃, 脾臟及十二指腸上半部份.

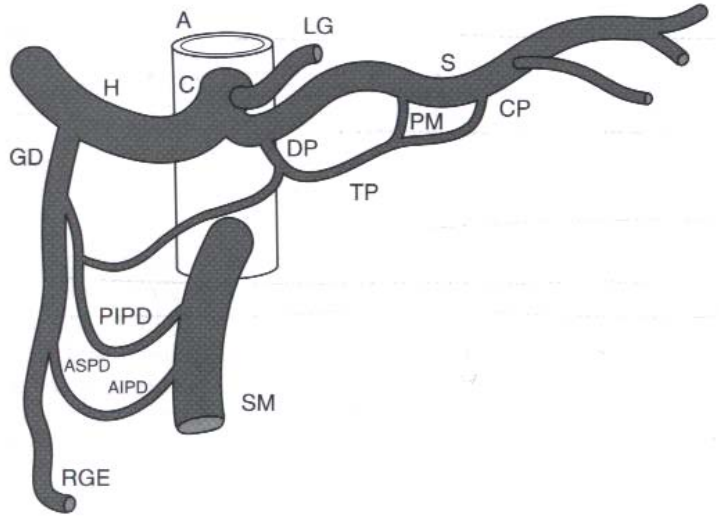


Figure 119–1. Diagram of typical celiac axis anatomy and branching pattern. A, aorta; C, celiac axis; H, hepatic artery; GD, gastroduodenal artery; LG, left gastric artery; S, splenic artery; DP, dorsal pancreatic artery; TP, transverse pancreatic artery; PM, pancreata magna; CP, caudal pancreatic artery; SM, superior mesenteric artery; PIPD, posterior inferior pancreaticoduodenal artery; ASPD, anterior superior pancreaticoduodenal artery; AIPD, anterior inferior pancreaticoduodenal artery; RGE, right gastroepiploic artery. (From Nebesar RA, Kornblith PL, Pollard JJ, Michels NA: Celiac and Superior Mesenteric Arteries: A Correlation of Angiograms and Dissections. Boston, Little, Brown, 1969.)

腹部之血液供應

- 上腸繫膜動脈 (Superior mesenteric artery, SMA)
  - 主要分支: 空腸支, 迴腸支, 右結腸支, 中結腸支.
  - 供應器官: 消化道之中腸部份. 包括十二指腸之遠端, 空腸, 迴腸, 升結腸, 橫結腸之前端部份.

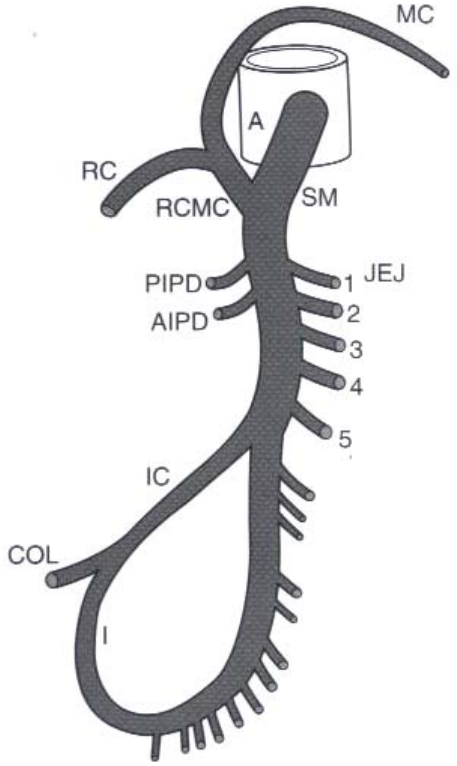


Figure 119–2. Diagram of typical superior mesenteric artery anatomy and branching pattern. A, aorta; MC, middle colic artery; RC, right colic artery; SM, superior mesenteric artery; PIPD, posterior inferior pancreaticoduodenal artery; AIPD, anterior inferior pancreaticoduodenal artery; JEJ, jejunal branches; IC, ileocolic artery; COL, colic branches; I, ileal branches. (From Nebesar RA, Kornblith PL, Pollard JJ, Michels NA: Celiac and Superior Mesenteric Arteries: A Correlation of Angiograms and Dissections. Boston, Little, Brown, 1969.)

腹部之血液供應

- 下腸膜繫動脈 (Inferior mesenteric artery, IMA)
  - 主要分支：左結腸支, 直腸支.
  - 供應器官: 消化道之後腸部份. 包括有橫結腸遠端部份, 降結腸及直腸上端部份.

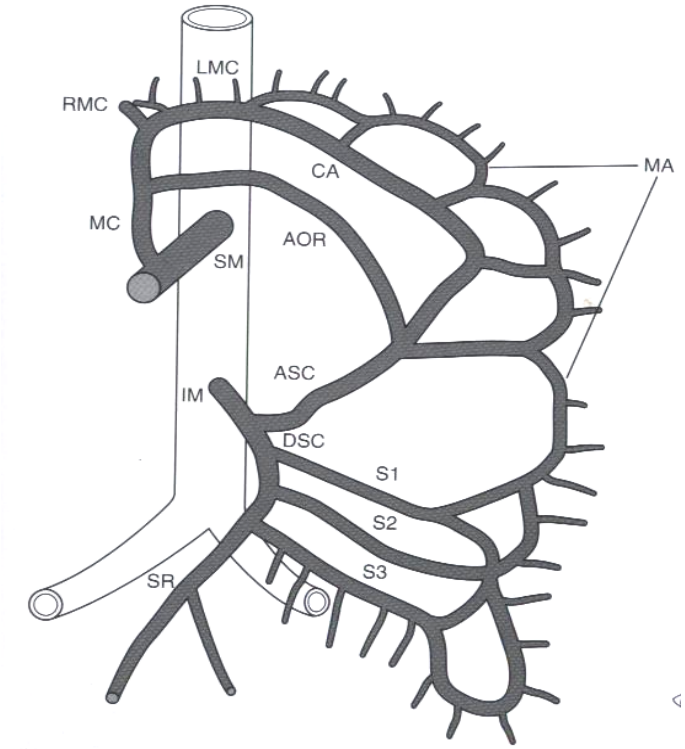


Figure 119–3. Diagram of typical inferior mesenteric artery anatomy and branching pattern. SM, superior mesenteric artery; MC, middle colic artery; RMC, right branch of middle colic artery; LMC, left branch of middle colic artery; AOR, arc of Riolan; CA, central artery; MA, marginal artery; IM, inferior mesenteric artery; ASC, ascending branch; DSC, descending branch; S1, S2, S3, sigmoid branches; SR, superior rectal artery. (From Nebesar RA, Kornblith PL, Pollard JJ, Michels NA: Celiac and Superior Mesenteric Arteries: A Correlation of Angiograms and Dissections. Boston, Little, Brown, 1969.)

定　義

- 腹痛是指由於各種原因引起的腹腔內外臟器的病變，而表現爲腹部的疼痛。

腹痛的分類

- 依發生時間和速度
  - 急性腹痛, 慢性腹痛
- 依發生部位
  - 左上腹痛, 左下腹痛, 右下腹痛, 右上腹痛, 腹中央痛.
- 依腹腔結構和身體系統
  - 腹壁疾病, 腹腔疾病, 腹膜後腫瘤以及腹外系統性疾病

腹痛的病因

- Infection
- Inflammation
- Obstruction
- Ischemia
- Perforation
- Neoplasm
- Functional
- Psychiatric

Acute abdomen

- Synonym: surgical abdomen
- 指嚴重的腹痛情況，在24小時內需積極的處理或緊急外科手術。
- GI causes
  - Acute appendicitis, acute cholecystitis, acute pancreatitis, acute diverticulitis, acute cholangitis
  - PPU, small bowel obstruction, acute mesenteric ischemia
- Non-GI causes
  - Ectopic pregnancy (GYN/OBS), aneurysm rupture, urolithiasis
  - Testicular torsion,

Table 16.2 Common causes of acute abdominal pain requiring admission to hospital in UK adults

Condition	Approximate incidence (%)
Non-specific abdominal pain	35
Acute appendicitis	30
Acute cholecystitis and biliary colic	10
Peptic ulcer disease	5
Small bowel obstruction	5
Gynaecological disorders	5
Acute pancreatitis	2
Renal and ureteric colic	2
Malignant disease	2
Acute diverticulitis	2
Dyspepsia	1
Miscellaneous	5

腹痛的機轉

- 依疼痛的原理，可大約區分爲下列幾類情況。

1. 消化道黏膜的刺激：如胃潰瘍及十二指腸潰瘍。
2. 消化道平滑肌痙攣：如腸胃炎，糞便阻塞。
3. 腹膜受到刺激發炎：如潰瘍穿孔。
4. 內臟神經直接受到刺激：如胰臟癌侵犯或壓迫內臟神經。
5. 血管性問題: 如腸繫膜血管栓塞或栓子，動脈剝離或破裂
6. 腹壁的問題:如腹肌發炎或感染, 血腫, 疝氣
7. 綜合以上的因素：如膽結石合併膽囊發炎刺激到腹膜。

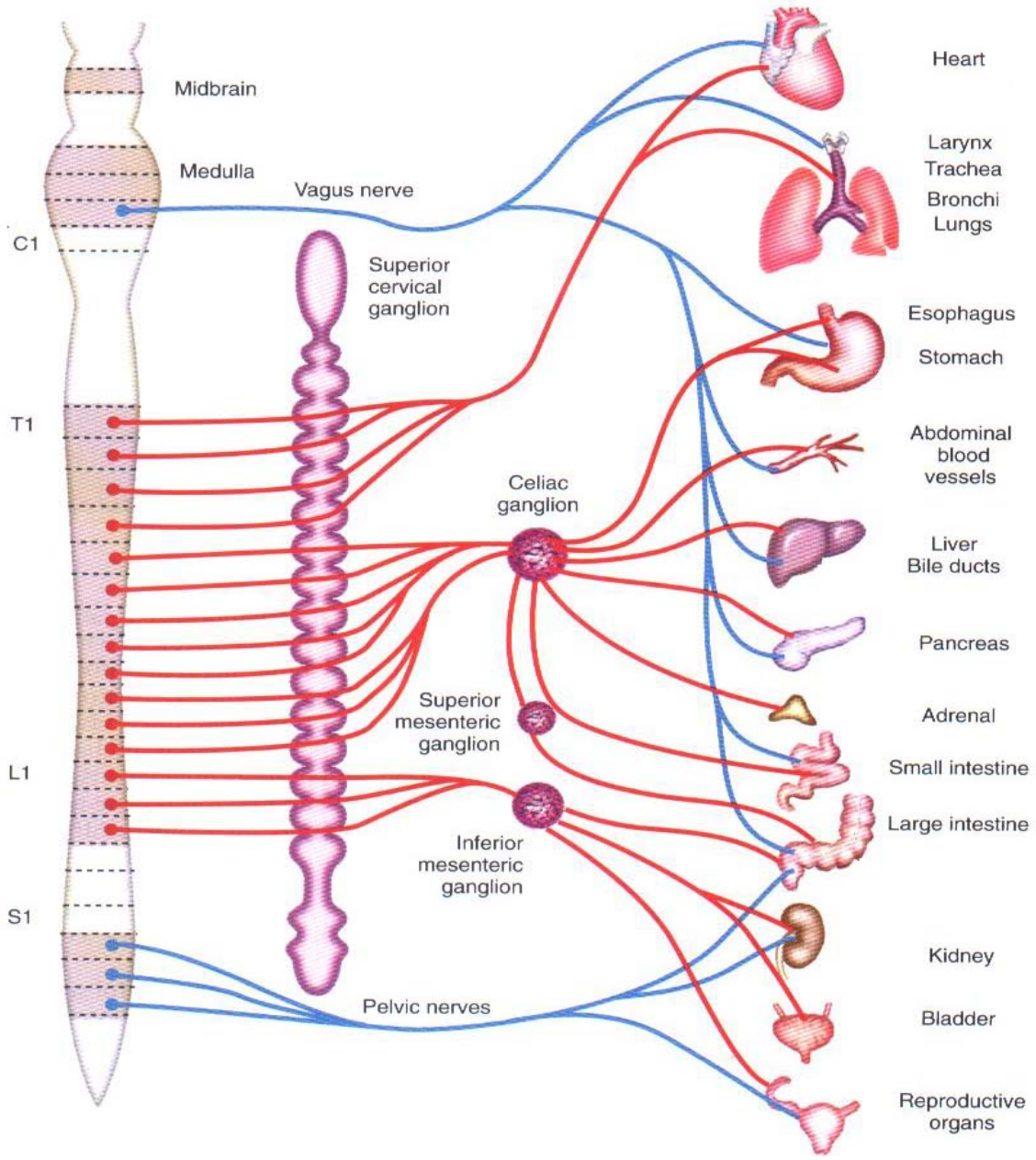


Figure 4–1 Pathways of visceral sensory innervation. The visceral afferent fibers mediating pain travel with autonomic nerves to communicate with the central nervous system. In the abdomen, these include both vagal and pelvic parasympathetic nerves and thoracolumbar sympathetic nerves. Sympathetic fibers (*red lines*); parasympathetics (*blue lines*).

腹痛的型式（Types of pain）

- Abdominal pain may be classified into three categories
  - Visceral pain
  - Somatoparietal pain
  - Referred pain

Visceral pain

- It is usually dull and poor localized in the midline epigastrium, peri-umbilical region, or lower mid-abdomen because abdominal organs transmit sensory afferents to both sides of the spinal cord.
  - Intestinal pain: cramping, above or around the umbilicus
  - Colonic pain: hypogastrium, lower quadrants
  - Biliary or ureteral obstruction: causes patient to writhe in discomfort.

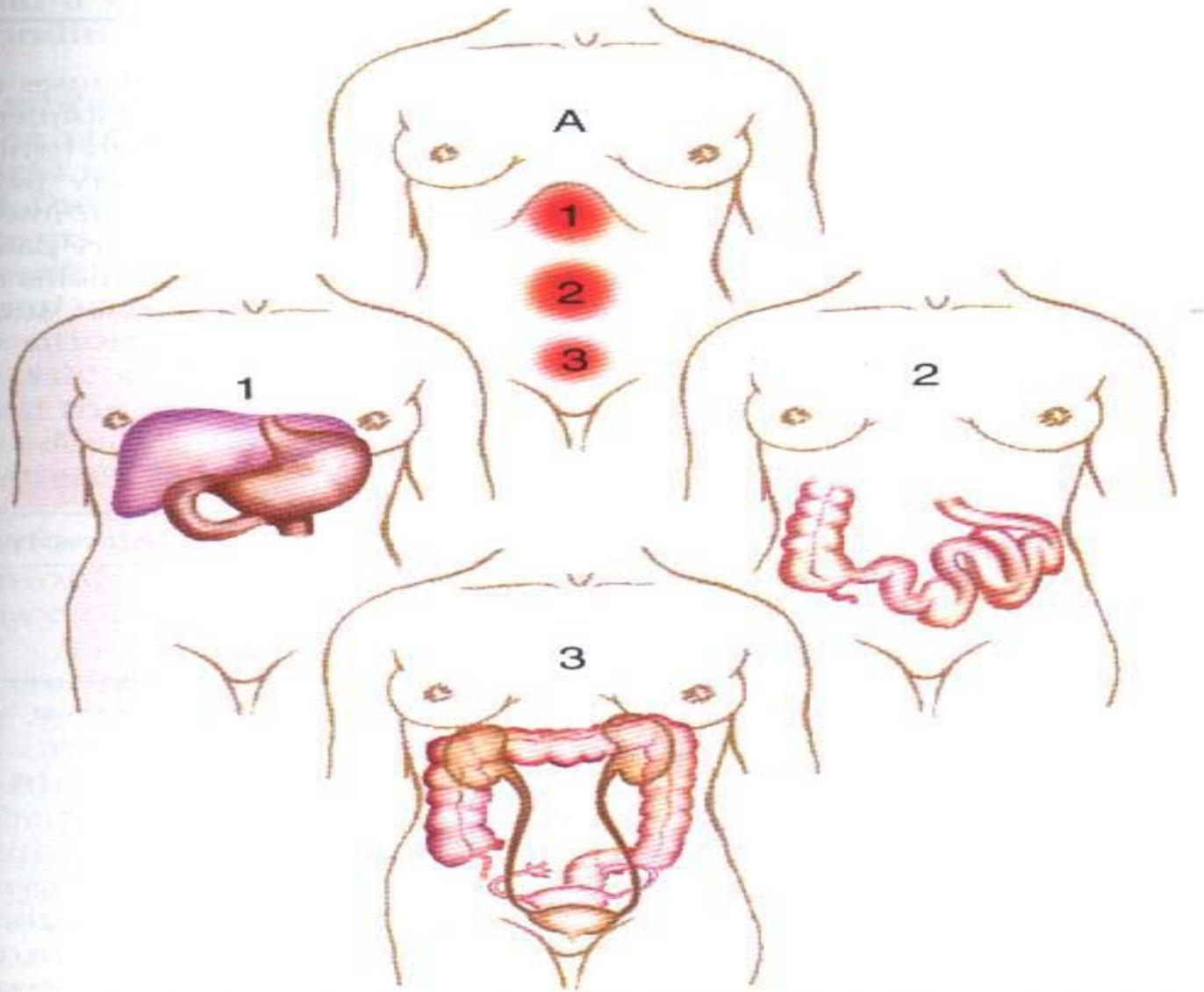


Figure 4–2 Localization of visceral pain. Pain arising from organ areas depicted in *1*, *2*, and *3* is felt in the epigastrium, midabdomen, and hypogastrium, respectively, as shown in *A*.

Somatoparietal pain

- It arises from noxious（有害的） stimulation of the parietal peritoneum
- It is generally more intense and more precisely localized than visceral pain.
- It is usually aggravated by movement or coughing.

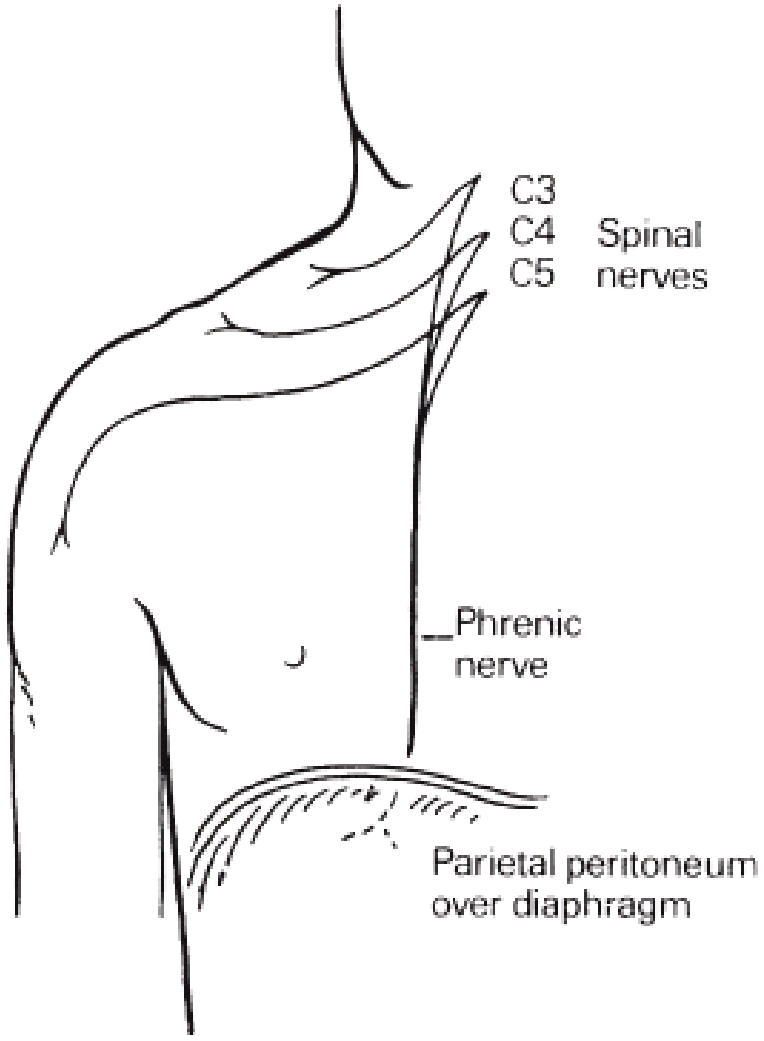


Fig. 16.1 The shared sensory innervation of the shoulder and diaphragm.

Referred pain

- It is felt in areas remote to the diseased organ
- It is a result of convergence of visceral afferent neurons with somatic afferent neurons from different anatomic regions on second-order neurons in the spinal cord at the same spinal segment
- It may be felt in skin or deeper tissues but is usually well localized.
- Generally, it appears as the noxious visceral stimulus becomes more intense.

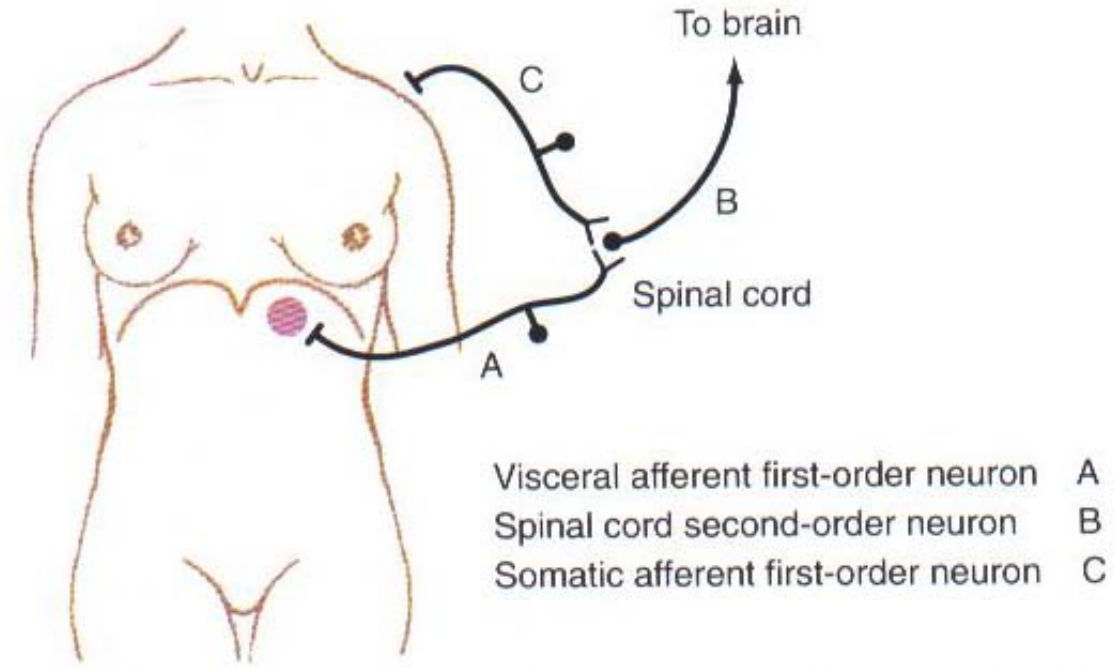


Figure 4–3 Demonstration of the neuroanatomic basis of referred pain. Visceral afferent fibers innervating the diaphragm are stimulated by local irritation (e.g., subdiaphragmatic abscess). These visceral afferent fibers (*A*) synapse with second-order neurons in the spinal cord (*B*) at the same level as somatic afferent fibers (*C*) arising from the shoulder area (cervical roots 3 to 5). The brain interprets the pain to be somatic in origin and localizes it to the shoulder.

腹痛的鑑別診斷---依解剖位置

- Whole abdominal tenderness：

1. PPU, hallow organ perforation
2. Ischemic bowel
3. Pancreatitis
4. Spontaneous bacterial peritonitis
5. Ruptured ectopic pregnancy

- Epigastric region：

1. Gastritis, peptic ulcer
2. AMI, ischemic heart disease
3. Gallstone, cholecystitis
4. Stool impaction
5. Early appendicitis
6. Pancreatitis

腹痛的鑑別診斷---依解剖位置

- RUQ：

1. Acute cholecystitis, gallstone
2. CBD stone
3. Duodenal ulcer stone
4. PPU
5. A-colon diverticulitis
6. Right side urolithiasis

- RLQ：

1. Acute appendicitis
2. Right side urolithiasis
3. Right tubo-ovarian abscess
4. Pelvic inflammatory disease

- Peri-umbilical region：

1. Stool impaction
2. Enterocolitis
3. Incarcerated hernia

腹痛的鑑別診斷---依解剖位置

- LUQ：
  1. Gastric ulcer　　2. Ischemic colitis (Splenic flexure)
  3. Left side urolithiasis　　4. Pancreatitis
- LLQ：
  1. Stool impaction　2. Left side urolithiasis　3. Left tubo-ovarian abscess　4. Pelvic inflammatory disease　5. Ischemic colitis (Sigmoid colon)
- Flank region：
  1. Urolithiasis (Renal/Ureteral stone)　2. Pyelonephritis (PN)
  3. Pancreatitis
- Lower region：
  1. Right side urolithiasis　2. Bilateral tubo-ovarian abscess
  3. Pelvic inflammatory disease (PID)　4. Ovulation
  5. Ectopic pregnancy
- Four Quadrants：
  1. Diverticulitis(視那一段的colon而定)

腹痛的鑑別診斷---依系統分類

- Cardiovascular: AMI, aortic dissection, aortic aneurysm, endocarditis
- Respiratory : pneumonia, empyema, pneumothorax
- Gastrointestinal: acute pancreatitis, acute cholecystitis, acute appendicitis, ischemic bowel, peptic ulcer
- Genitourinary: urolithiasis, renal abscess, renal tumor

腹痛的鑑別診斷---依系統分類

- Endocrine: DKA, HHNK, uremia, porphyria
- Hematological: PNH, lymphoma, sarcoma
- Connective tissue disease: SLE, Henoch-Schonlein purpura
- Neurological: herpes zoster, compression or inflammation of spinal roots
- Toxin: lead poisoning, black widow spider bite

Table 4–1 Comparison of Common Causes of Acute Abdominal Pain

Condition	Onset	Location	Character	Descriptor	Radiation	Intensity
Appendicitis	Gradual	Periumbilical early; RLQ late	Diffuse early; localized late	Ache	RLQ	++
Cholecystitis	Rapid	RUQ	Localized	Constricting	Scapula	++
Pancreatitis	Rapid	Epigastric, back	Localized	Boring	Mid-back	++–+++
Diverticulitis	Gradual	LLQ	Localized	Ache	None	+–++
Perforated peptic ulcer	Sudden	Epigastric	Localized early, diffuse late	Burning	None	+++
Small bowel obstruction	Gradual	Periumbilical	Diffuse	Cramping	None	++
Mesenteric ischemia/infarction	Sudden	Periumbilical	Diffuse	Agonizing	None	+++
Ruptured abdominal aortic aneurysm	Sudden	Abdominal, back, flank	Diffuse	Tearing	Back, flank	+++
Gastroenteritis	Gradual	Periumbilical	Diffuse	Spasmodic	None	+–++
Pelvic inflammatory disease	Gradual	Either LQ, pelvic	Localized	Ache	Upper thigh	++
Ruptured ectopic pregnancy	Sudden	Either LQ, pelvic	Localized	Lightheaded	None	++

+ = mild, ++ = moderate, +++ = severe; LLQ = left lower quadrant; LQ = lower quadrant; RLQ = right lower quadrant; RUQ = right upper quadrant.

腹痛的臨床評估---病史的詢問

- 一般而言，腹痛很少情況需要緊急手術，故應有足夠時間詳問病史，從病史中常會獲得比實驗室檢查或X光檢查更重要的線索。
- 現在病史 (Present history)
- 過去病史（Past history）
- 家族史（Family history）
- 個人史（Social and personal history）
- 過敏史及藥物史 (Allergy and drug history)
- 生育年齡之婦女必須詢問月經週期之狀況。在診斷未明確前勿使用止痛藥，是不恰當的醫療措施。

Characteristics of abdominal pain

- Location:
  - RUQ, LLQ, whole abdomen
- Quality:
  - dull, sharp, crampy
- Quantity:
  - frequency, duration
- Onset:
  - sudden, acute onset, insidious.

Characteristics of abdominal pain

- Precipitating factor: NSAIDs, aspirin, Af, DM
- Exaggerating factors: eating, defecation, urination, position
- Relieving factor: position
- Associated symptoms: fever/chill, weight loss, jaundice, nausea/vomiting, diarrhea/constipation,

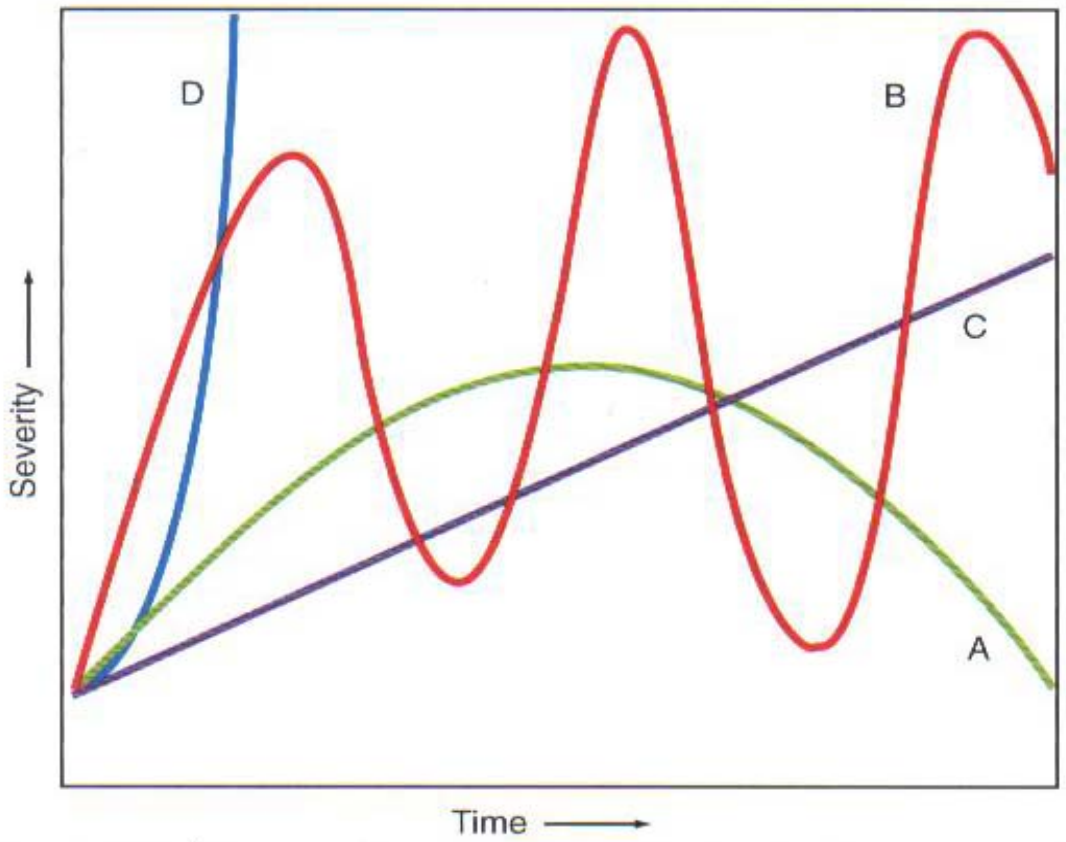
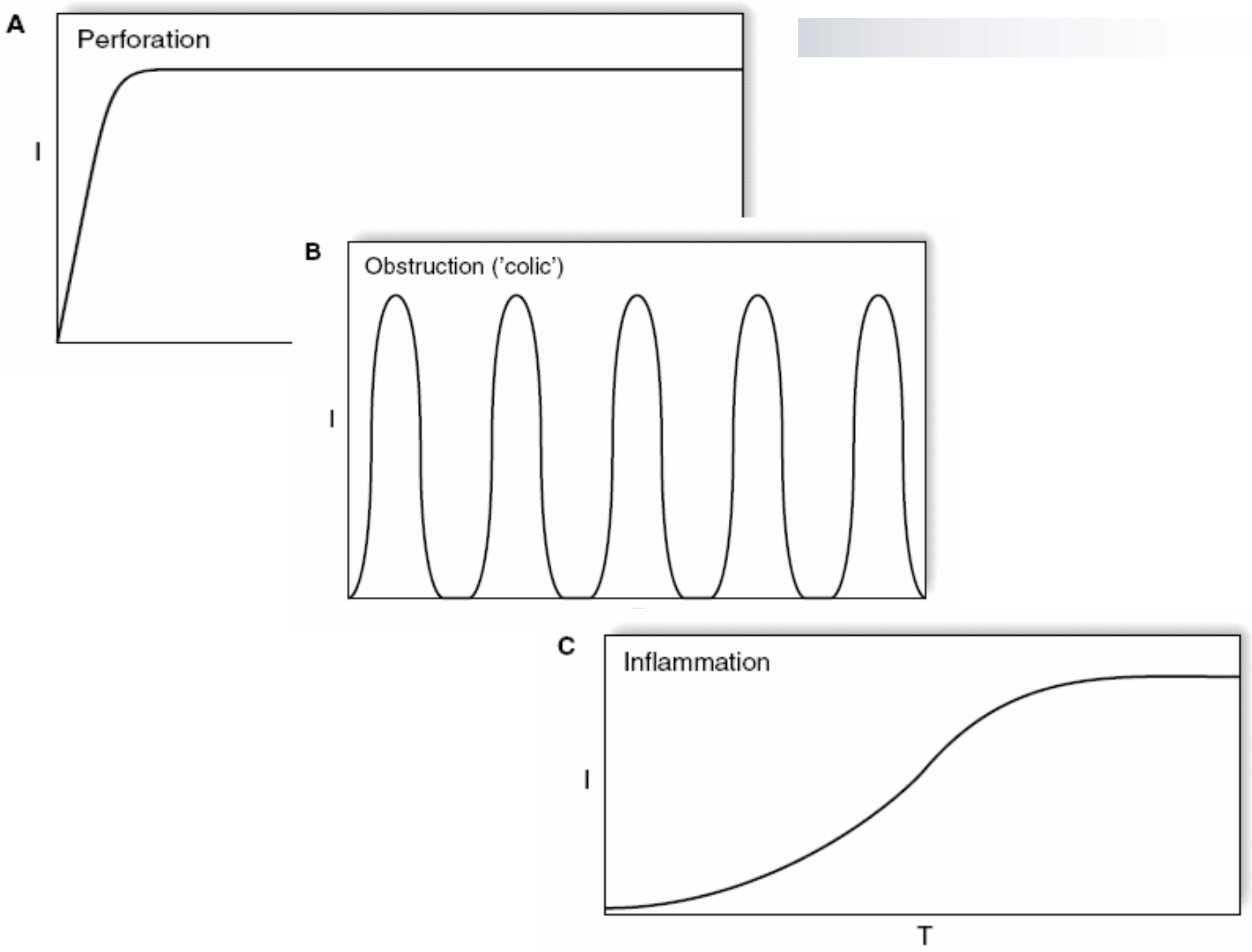


Figure 4–4 Patterns of acute abdominal pain. *A*, Many causes of abdominal pain subside spontaneously with time (e.g., gastroenteritis). *B*, Some pain is colicky (i.e., the pain progresses and remits over time); examples include intestinal, renal, and biliary pain ("colic"). The time course may vary widely from minutes in intestinal and renal pain to days, weeks, or even months in biliary pain. *C*, Commonly, abdominal pain is progressive, as in appendicitis or diverticulitis. *D*, Certain conditions have a catastrophic onset, such as ruptured aortic aneurysm.


A
Perforation
I
B
Obstruction ('colic')
I
C
Inflammation
I
T

腹痛的臨床評估---理學檢查

- 檢查技巧:
  - 檢查患者時，應先觀察其面部的表情狀態及呼吸情況。
  - 病患應著寬鬆衣物與放鬆心情。
  - 病患應仰躺並雙腳膝蓋微屈。
  - 檢查醫師應位於病患右側施行檢查。
  - 對於懷疑有腹膜炎的患者應只做輕輕的觸診，亦可請患者咳嗽以觀察腹痛是否加劇即可。

腹痛的臨床評估---理學檢查

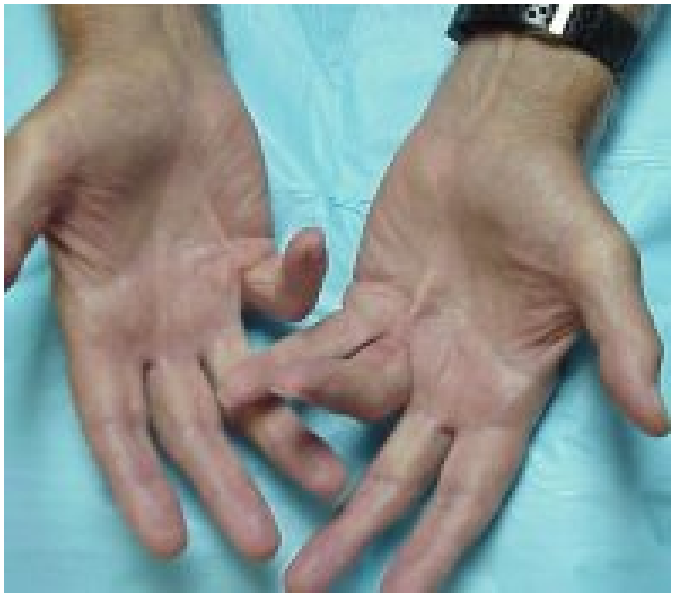
- 視診(Inspection)：要仔細注意看病患的姿勢、表情及外觀。檢查眼睛有無黃疸或貧血徵象，肚子是凹陷或平坦或膨脹，肚臍突出或凹陷，有無手術痕跡，有無腫塊(肚臍或右下腹部)，有靜脈浮起或紫斑，觀察腹股溝有無疝氣，觀察兩腰及背部。
- 聽診(Auscultation)：先扣診或觸診後，再聽診可能會使腸音變快。正常腸蠕動約爲每分鐘5-34次，大於每分鐘34次，稱之爲hyperactive。小於每分鐘5次，稱之爲hypoactive。若腸道連續兩分鐘不動才叫silent。此外，還要聽有無濺水聲(Fluid splash)，有無血流雜音(Bruits)或磨擦音。

腹痛的臨床評估---理學檢查

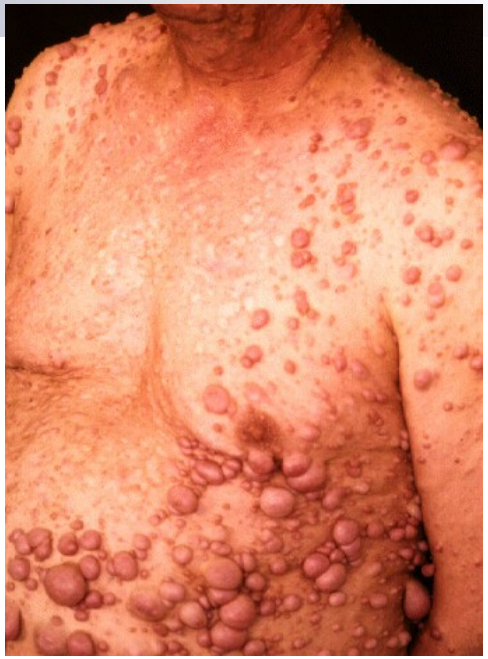
- 扣診(Percussion)：要敲出鈍音的界限，代表氣體與實質或液體的分界。此外，敲出liver and spleen span的大小以及腹部疼痛位置。
- 觸診(Palpation)：觸診動作要輕柔，先從不痛的部位開始。可先請病患自己用食指指出最痛點。先做淺部觸診，再做深部觸診。壓迫時要看著病患的表情疼痛與否，有無局部壓痛或廣泛疼痛，肌肉僵硬，有無硬塊。觸摸肝臟及脾臟是否有腫大，若有回彈痛，一定要先向病人解釋。
- 肛門指診(Digital anal examination)：如懷疑有排便問題及出血問題，一定要做指診。檢查有無硬便存在，有無攝護腺肥大或腫塊，有無可疑黏液或血跡 (tarry stool瀝青黑便或像草莓果醬)。
- 病情有需要時，每隔一段時間便應重覆理學檢查。

理學檢查徵象

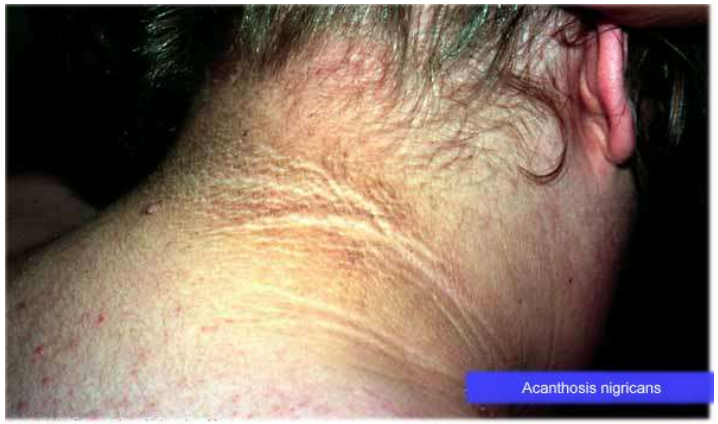
- Rebound tenderness：用手指慢慢而用力地壓腹部，然後手指突然回收。如果在手指回收時會早成疼痛，即稱之。此現象代表有腹膜發炎。
- Muscle guarding：在按壓病患腹部時，腹部肌肉會防衛性地收縮痙攣。
- Murphy's sign：將手指反鉤於右上腹腹直肌外緣與肋骨緣交接處，令病患深吸氣，若病患產生劇烈疼痛或停止呼吸，表示爲陽性。此現象代表急性膽囊炎的可能。
- Succussion splash sign：在病患禁食至少六小時後，用聽診器放置於上腹部，同時用兩手將病患腹部搖晃，若聽到濺水聲，即爲陽性。此現象代表有胃出口阻塞情況。



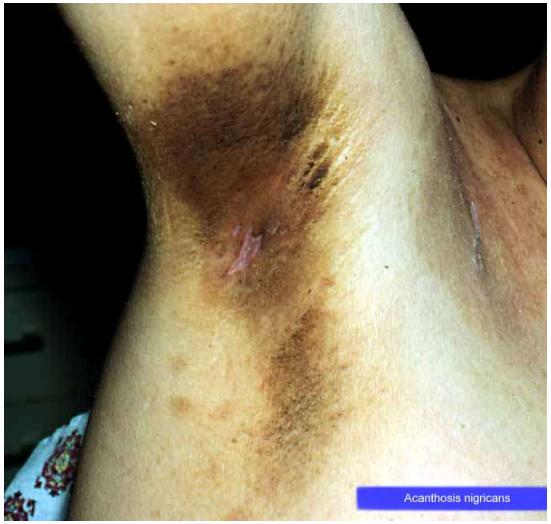
Dupuytren’s contracture



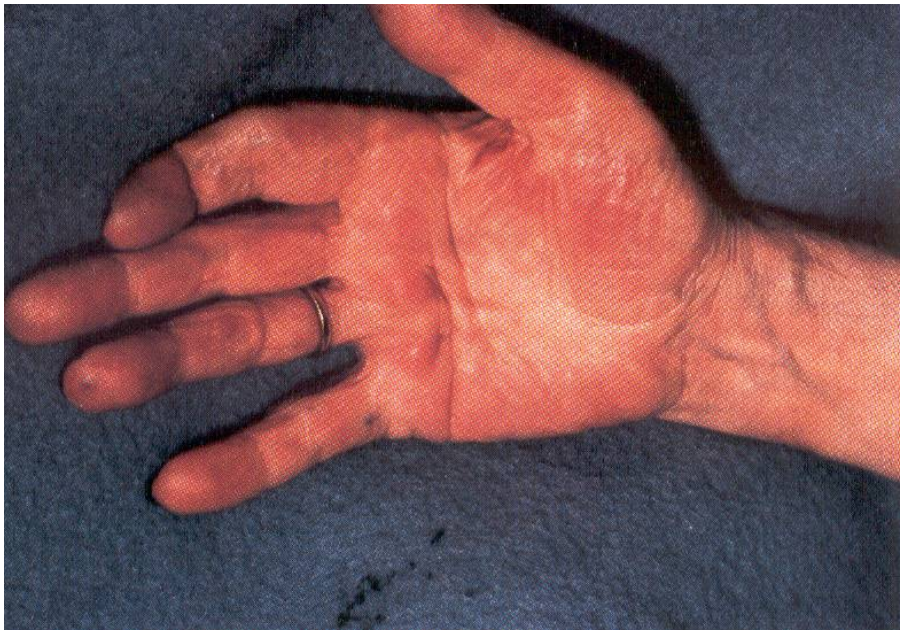
Neurofibromatosis

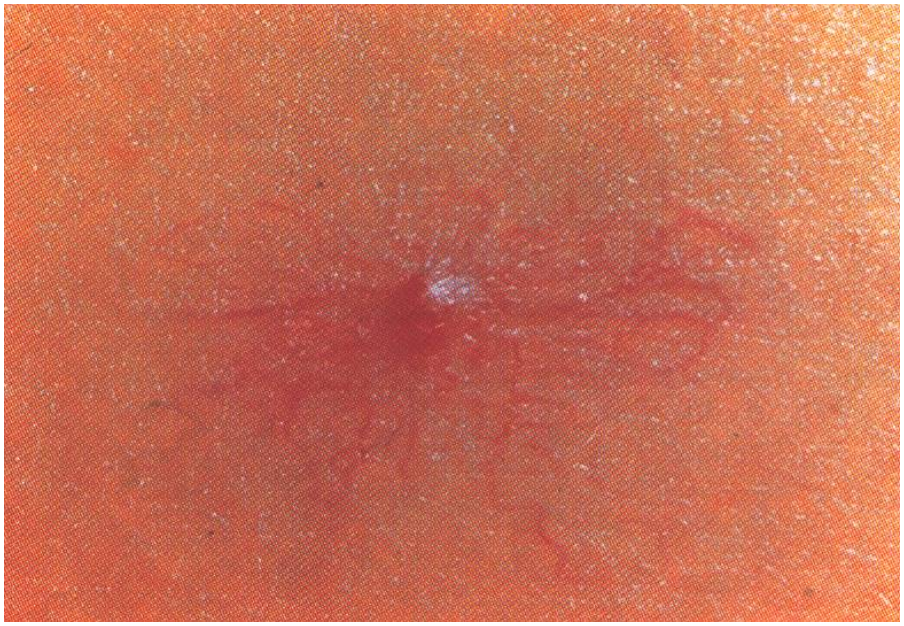


Acanthosis nigrican

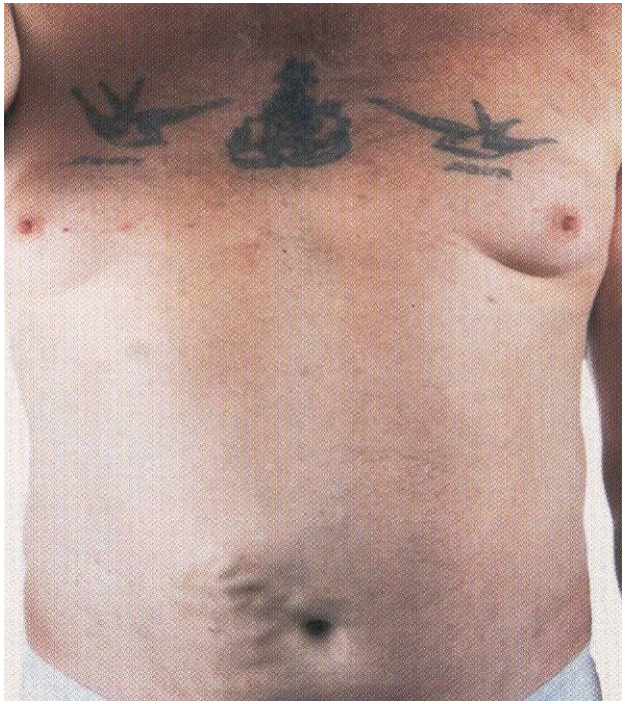


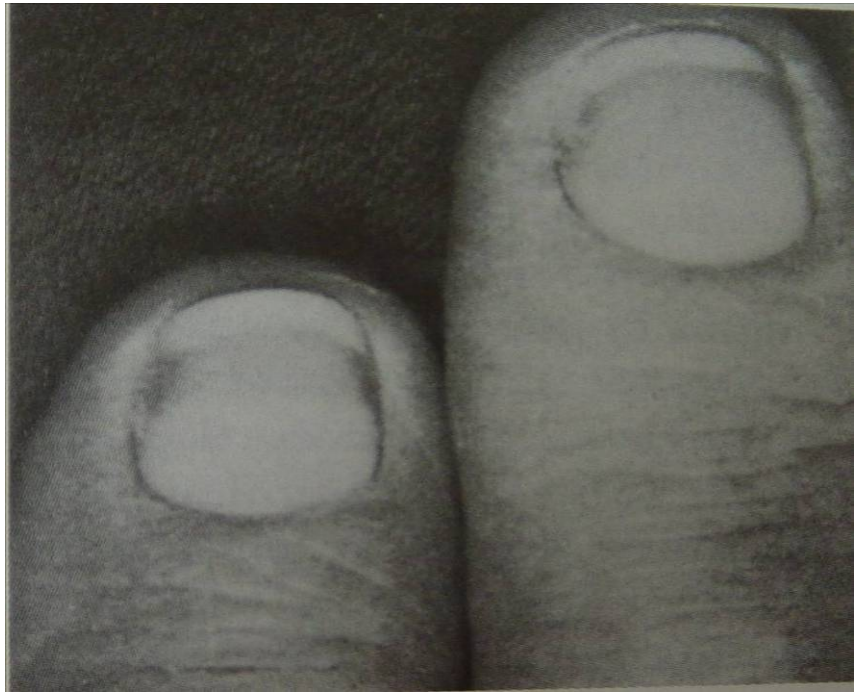
Palmar Erythema and Spider Nevus



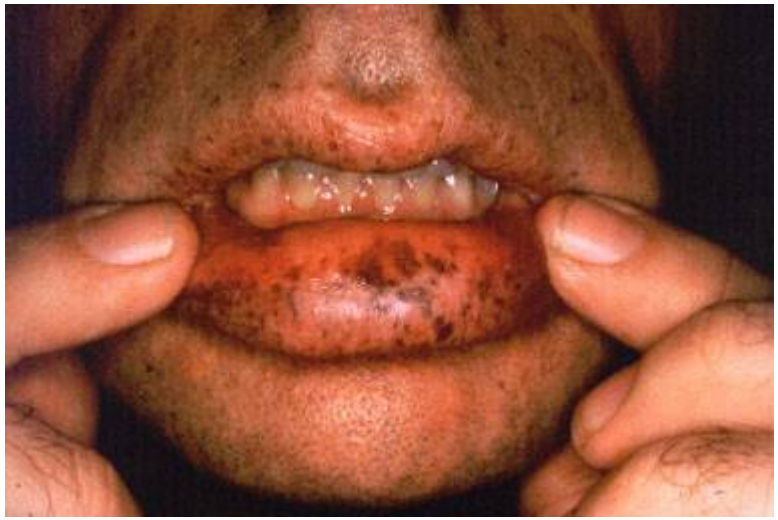


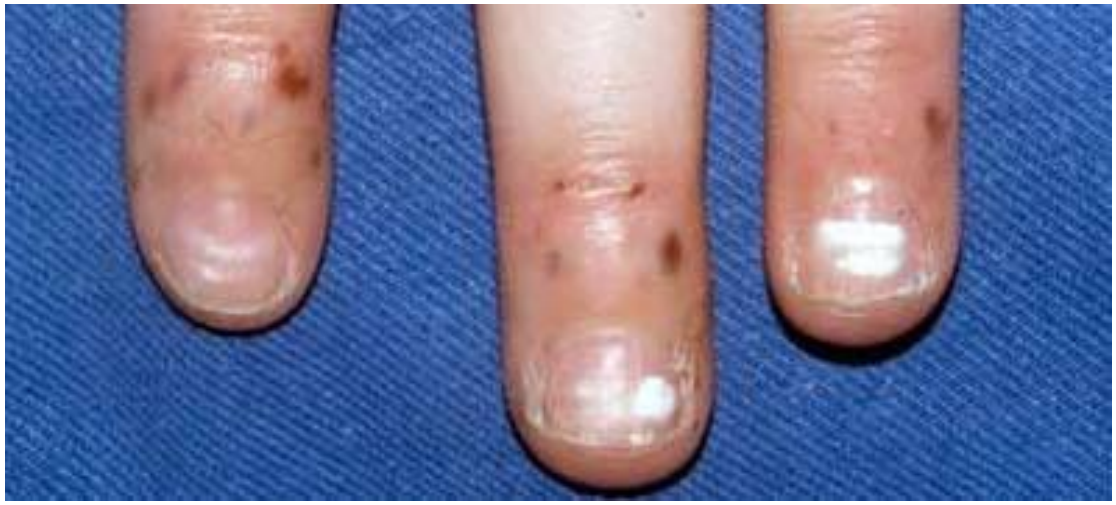
Gynecomastia and white nail





Peutz-Jeghers Syndrome





腹痛的臨床評估---實驗室檢查

- 血液
  - CBC:如白血球上升可見於臟器穿孔、胰臟炎、急性膽囊炎、骨盆腔炎症、腸栓塞等；血紅素下降可能有內臟破裂或出血。
  - Biochemistry：
    - Amylase, lipase上升等可見於胰臟炎、潰瘍穿孔、絞勒性腸阻塞，及急性膽囊炎等。
    - 血糖、肝腎生化學檢查。
  - Electrolytes: Ca, Na, K,
  - Inflammatory markers: CRP, ESR

腹痛的臨床評估---實驗室檢查

- 尿液分析
  - Cell count
  - Bilirubin
  - Sugar
  - Ketone
  - Urobilinogen
  - Protein
  - Pregnancy test

腹痛的臨床評估---實驗室檢查

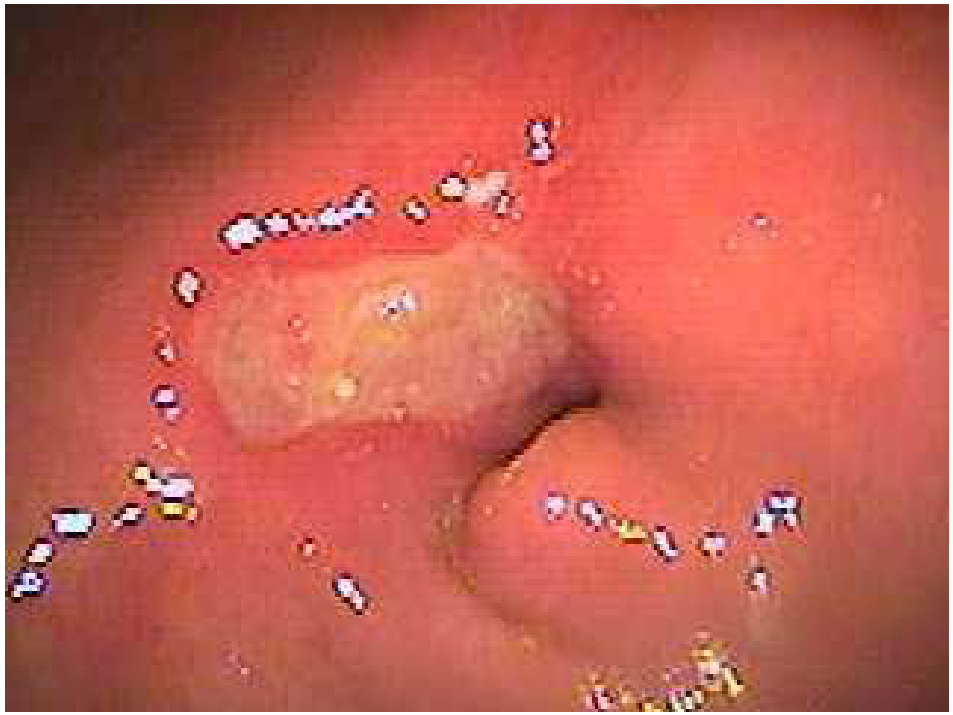
- 糞便分析
  - Cell count
  - Biochemistry
  - Parasite

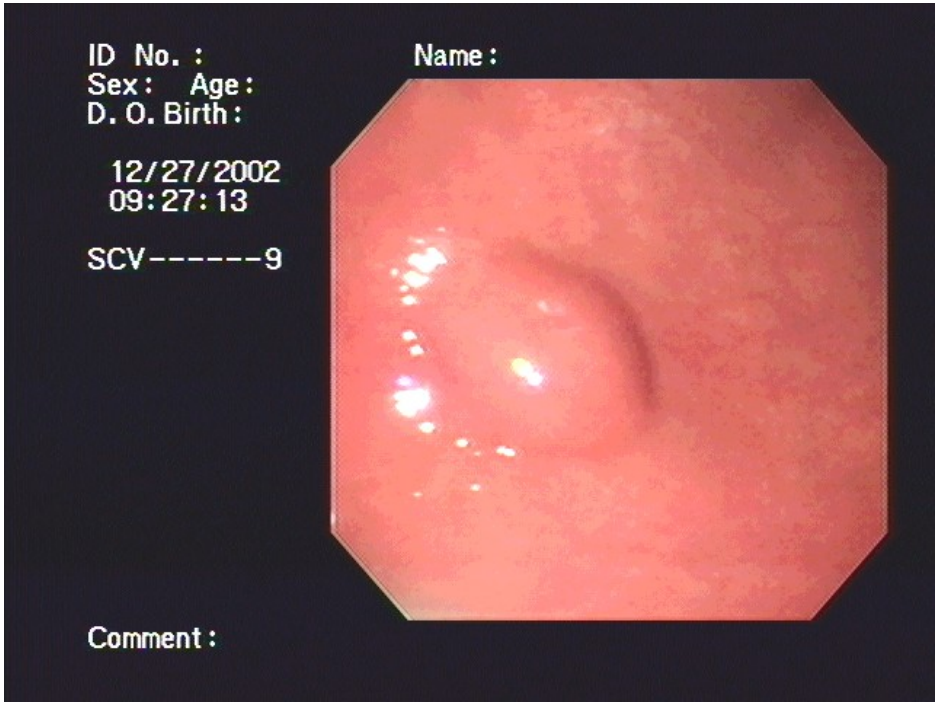
腹痛的臨床評估---影像及特殊檢查

- 胸部X光: 最好能站立
  - pneumonia, pneumothorax
- 腹部X光: 必要時站立或側臥
  - intestinal obstruction,
- 心電圖
  - AMI
- 上下腸胃道鋇劑攝影
  - tumor, ulcer,
- 腹部超音波、都卜勒超音波:
  - gallstone, tumor, abscess

腹痛的臨床評估---影像及特殊檢查

- 腹部電腦斷層掃描: abscess, mass,
- 腹部核磁共振掃瞄:
- 血管攝影術: ischemic bowel disease
- PTCD, ERCP, MRCP: biliary duct stones, tumors
- Radionuclide scanning

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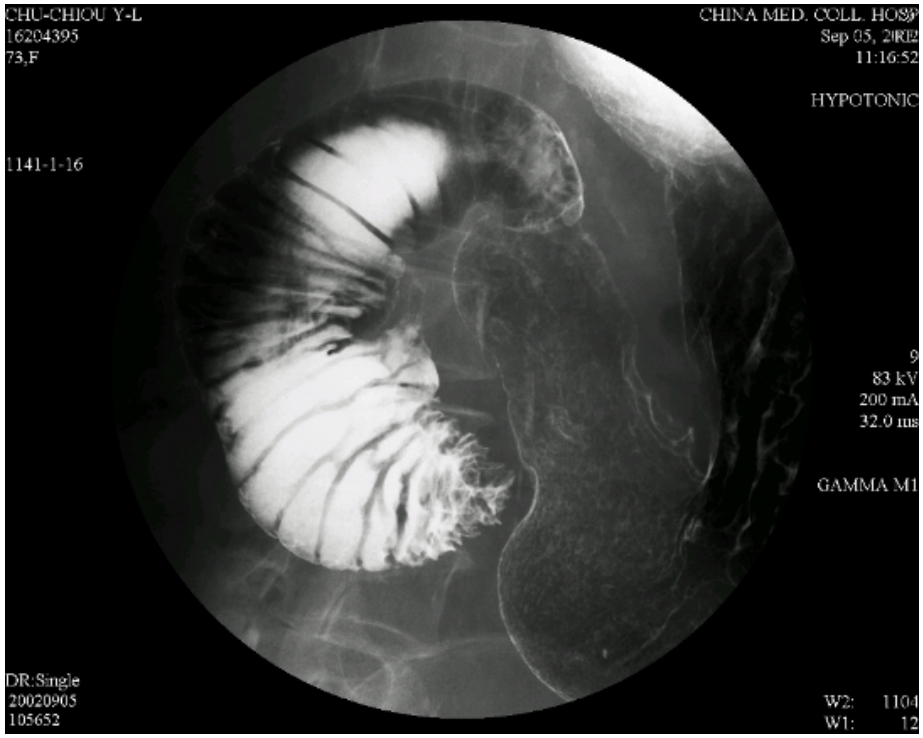
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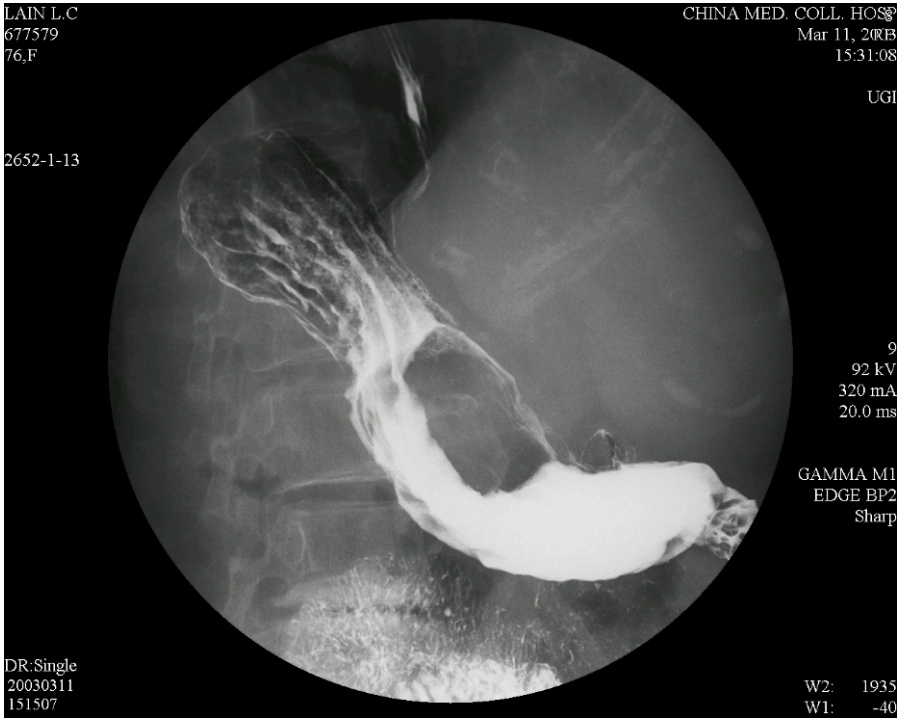
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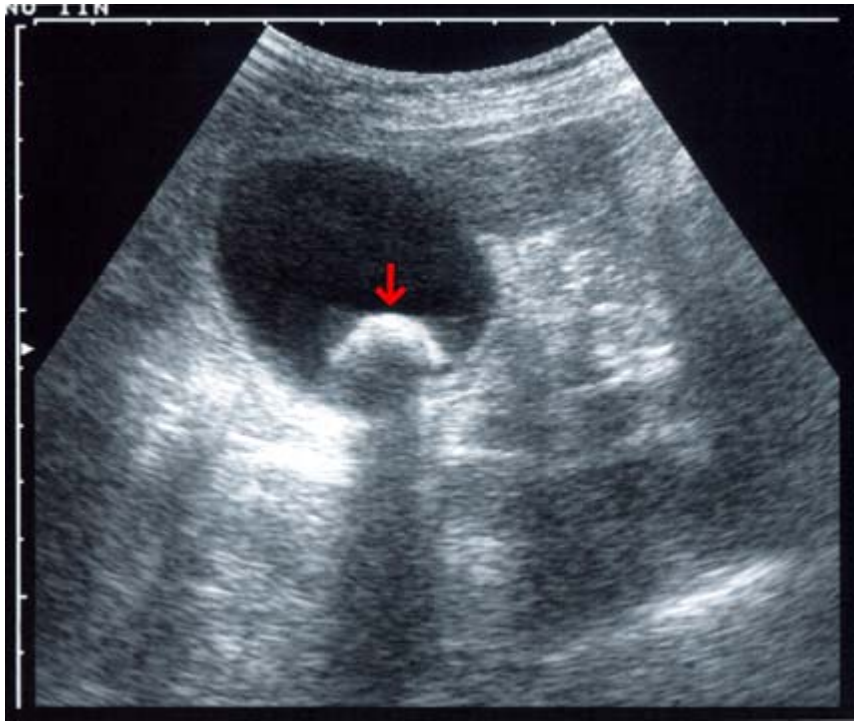
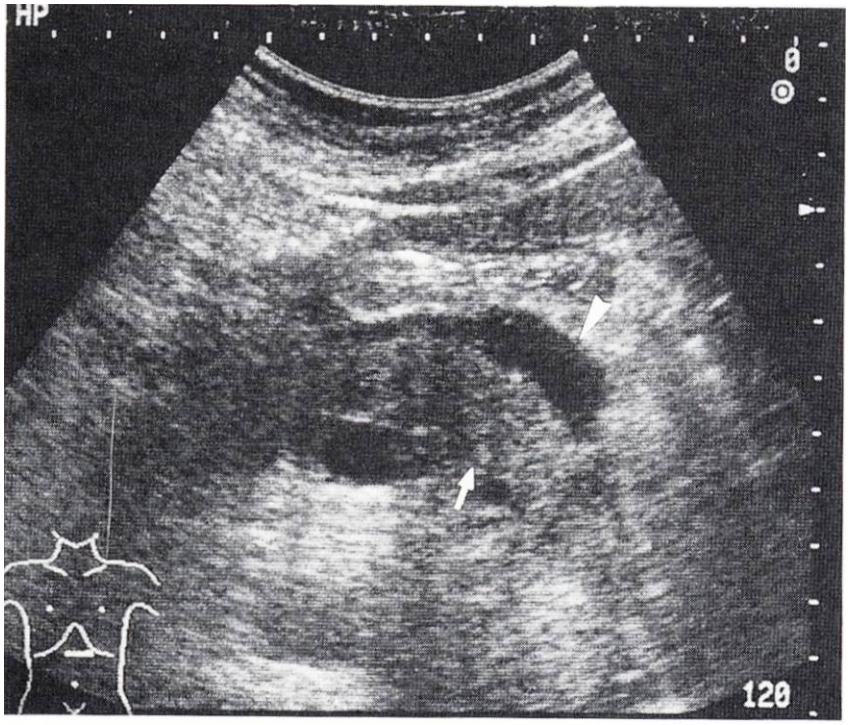
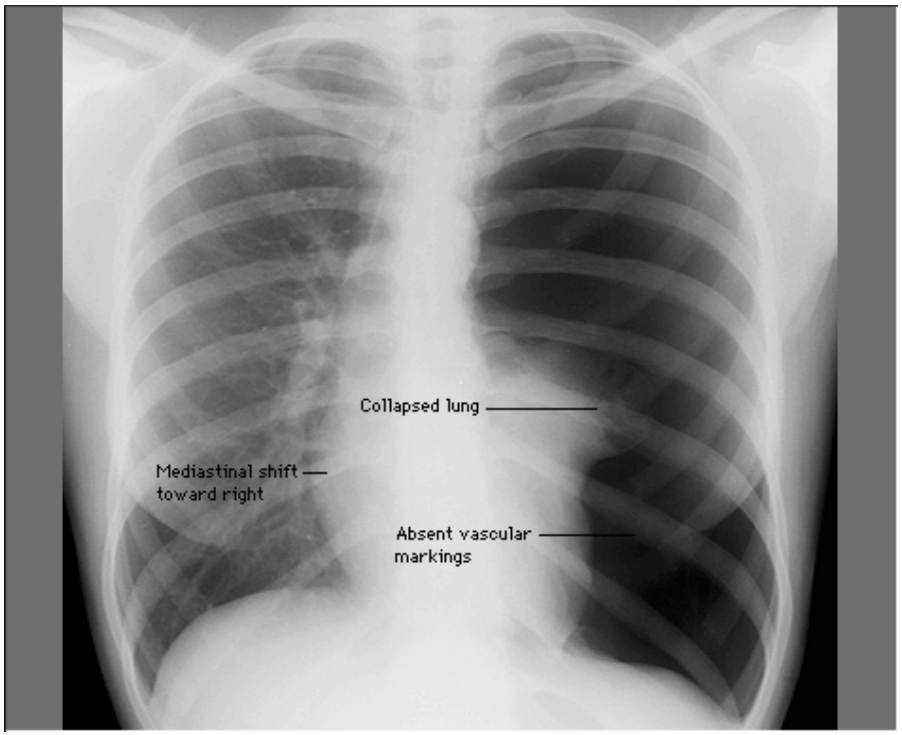
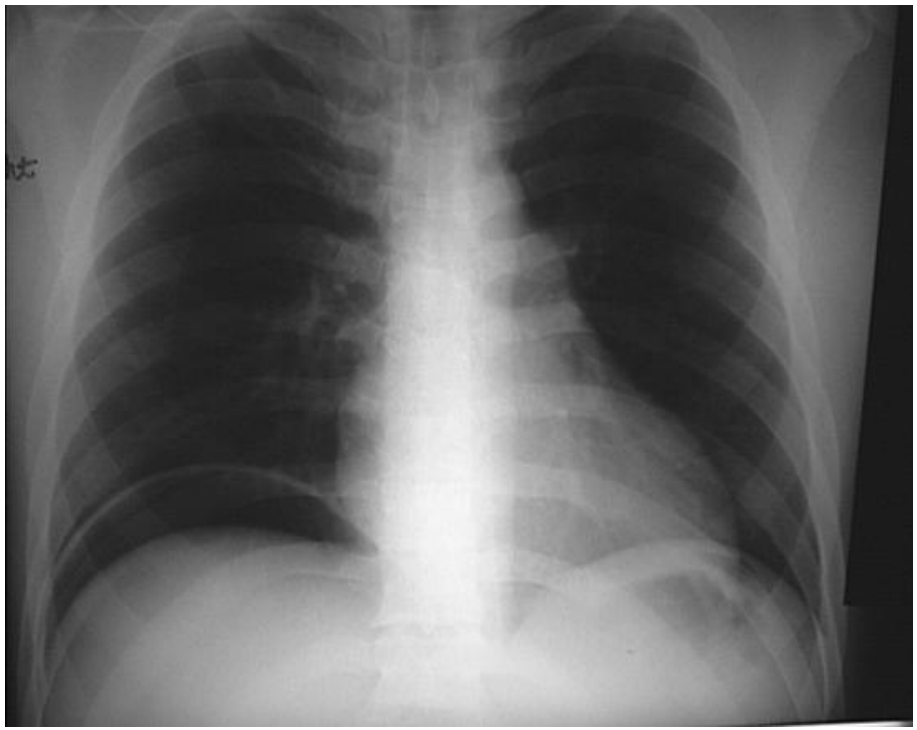
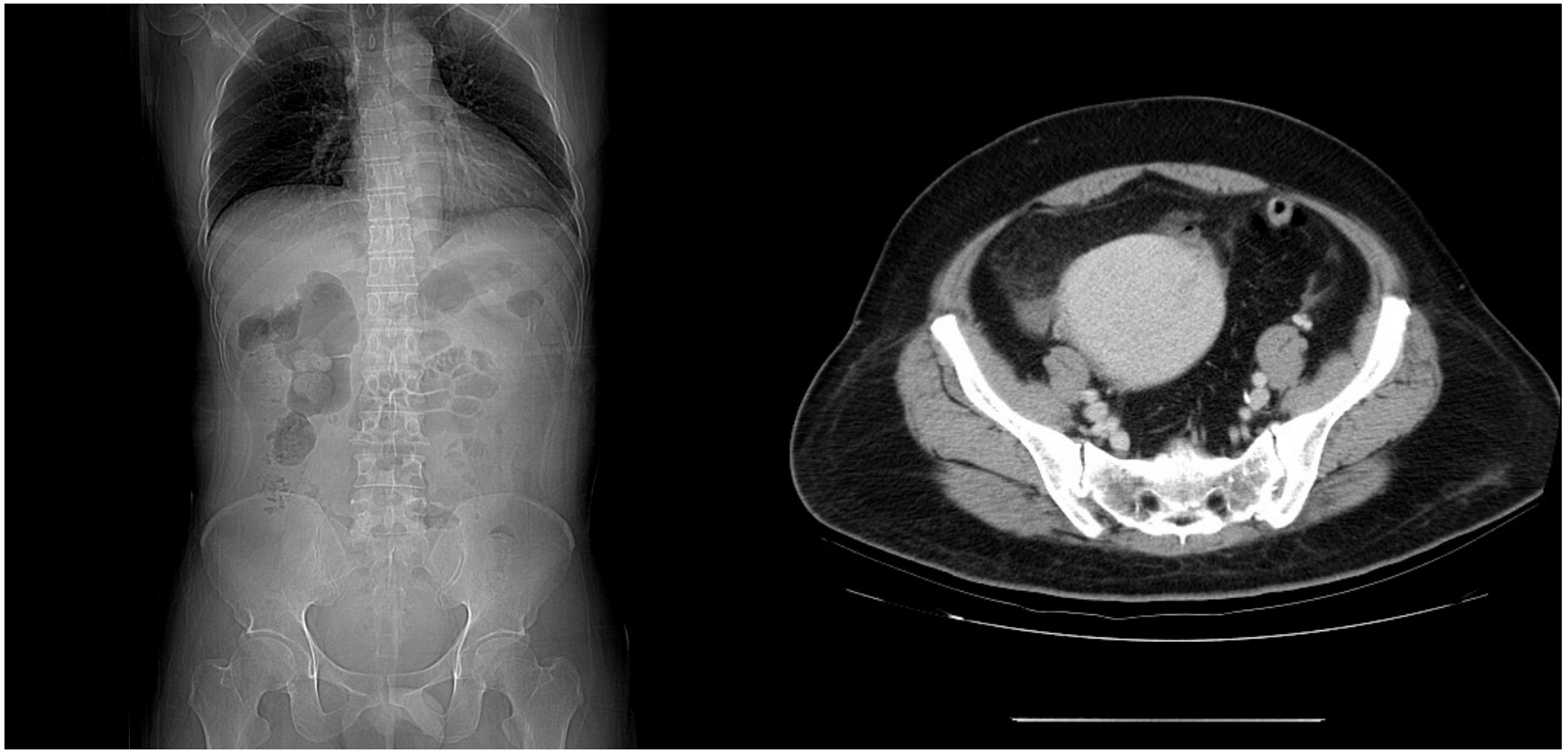


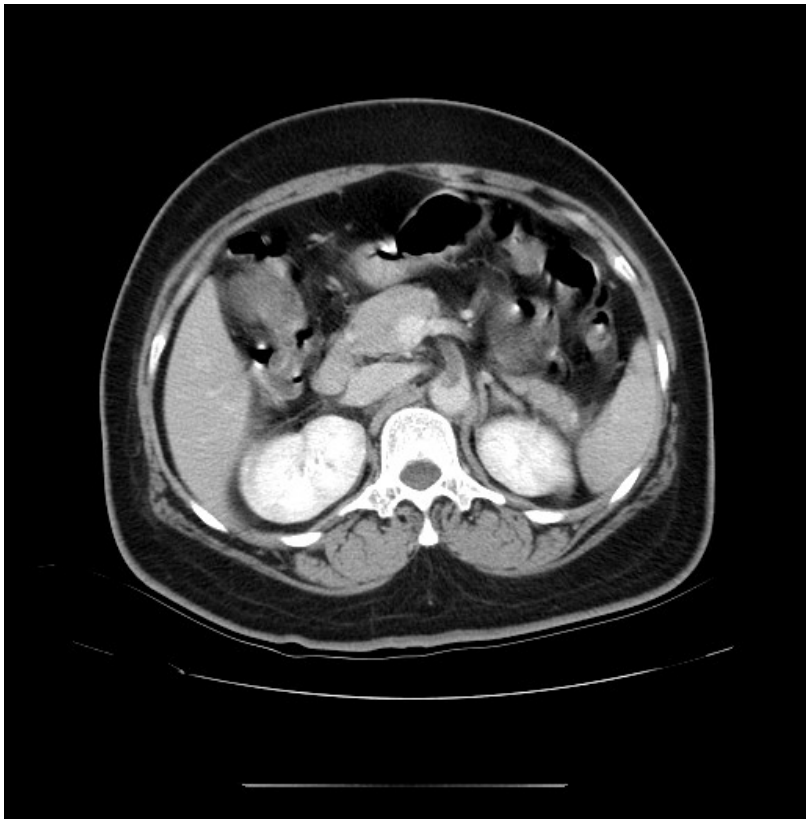


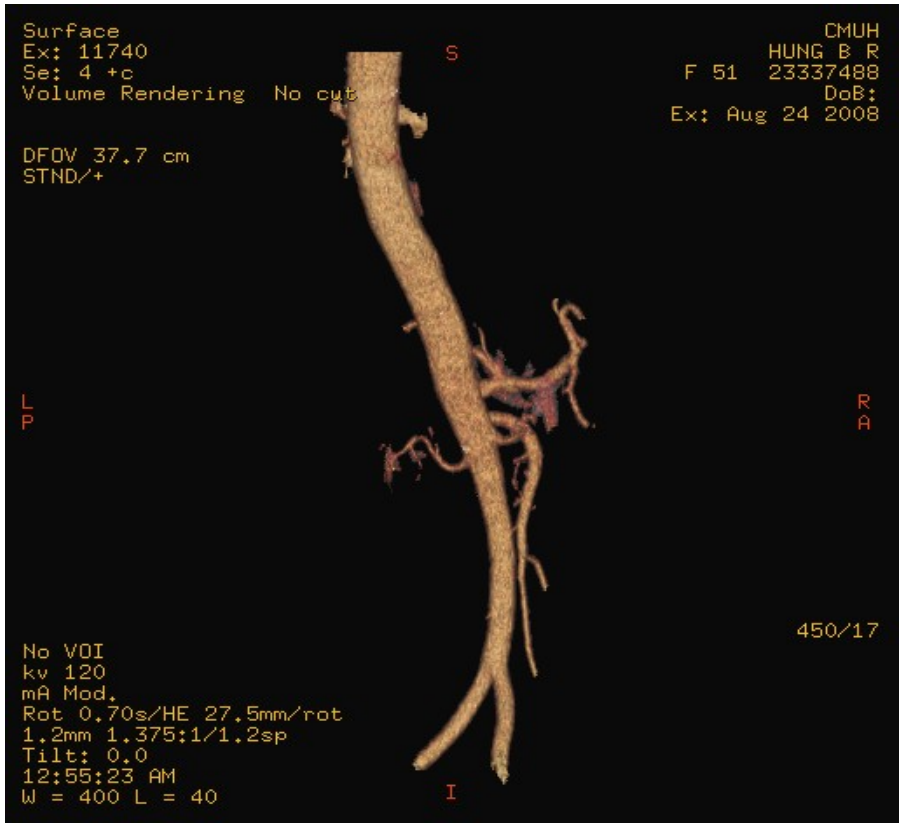
胰臟的回音（⇧）有明顯下降的情形，胰臟周圍有滲出液的貯留（△）。


Collapsed lung
Mediastinal shift
toward right
Absent vascular
markings





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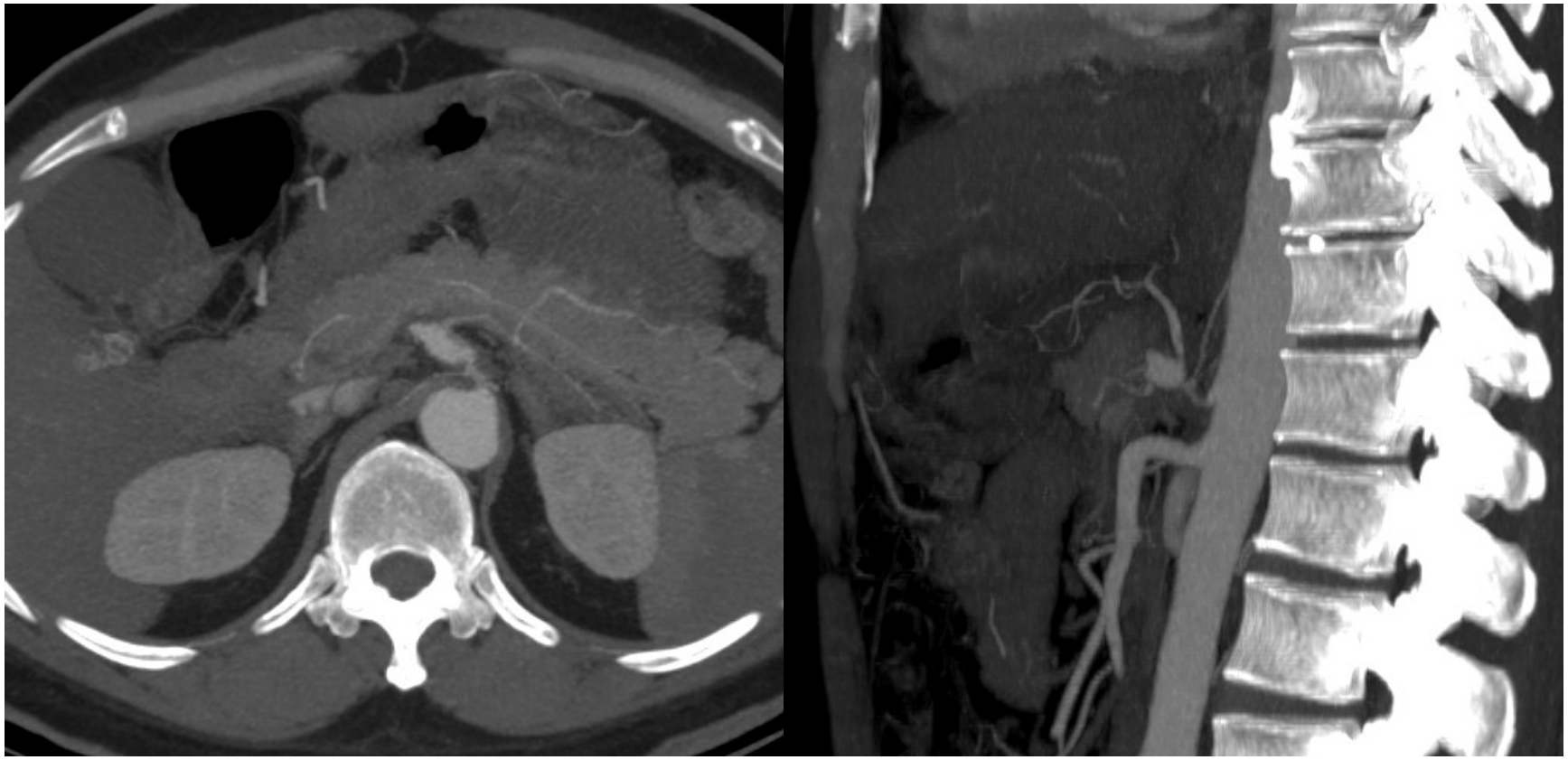

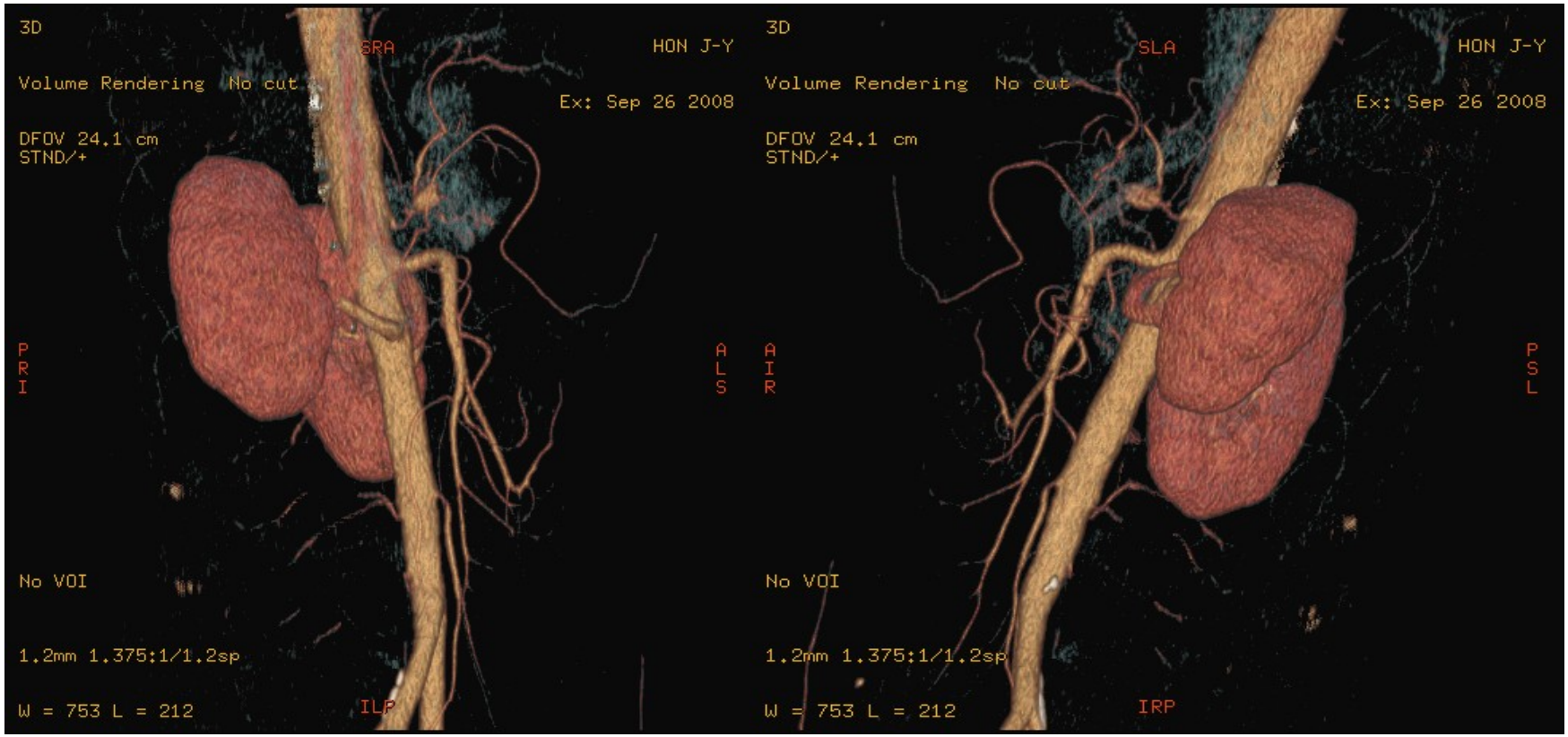
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Thanks for your attention