

Slide 1

Acute Upper
Quadrant Pain
(Case-based approach)

Anthony E. Hanbidge




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Slide 2

Abdominal/Pelvic Pain

- Most common presenting symptom
- Approximately 7% all ED visits
- Acute RUQ >>>> Acute LUQ
- Hepatobiliary disease – common & important
- Determining cause - clinical challenge




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Slide 3

RUQ Pain

- Diagnosis based on clinical & labs:
inaccurate
- Imaging critical to management
- Ultrasound should always be initial
imaging test
- Accurate, safe, inexpensive, available,
portable




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Learning Objectives

- 1) Discuss the value of US in assessing the patient with acute RUQ pain
- 2) Identify the imaging features of acute cholecystitis and its complications
- 3) Describe other conditions that can cause acute pain in RUQ when GB normal

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“Rule out Acute Cholecystitis”

- Acute cholecystitis and complications
- Choledocholithiasis and ascending cholangitis
- Recurrent pyogenic cholangiohepatitis
- Liver abscess
- Rupture/hemorrhage of liver masses

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Acute Cholecystitis - Ultrasound

- Accuracy 88%
- Similar to scintigraphy
- BUT
- Will show complications, alternate diagnoses
- Scintigraphy more time consuming


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Acute Cholecystitis


- 90% to 95% have cholelithiasis
- Calculus obstruction neck or cystic duct
- Variable degrees infection and necrosis
- RUQ pain, tenderness and guarding
- Spectrum: Mild to dramatic



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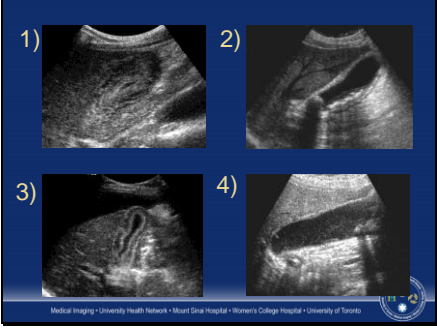
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Each of the following four patients presented with pain and tenderness in the right upper quadrant. Which of the following ultrasound appearances is most typical of acute cholecystitis?






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Slide 9



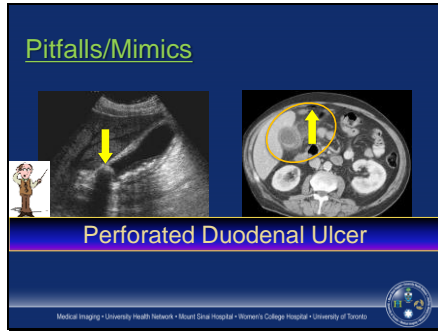
1)  2) 

3)  4) 

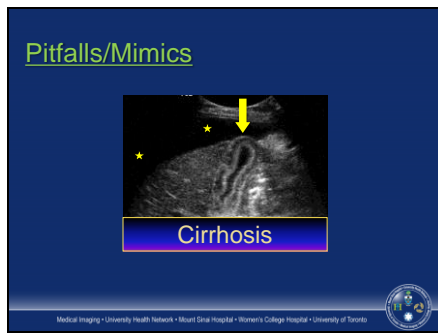


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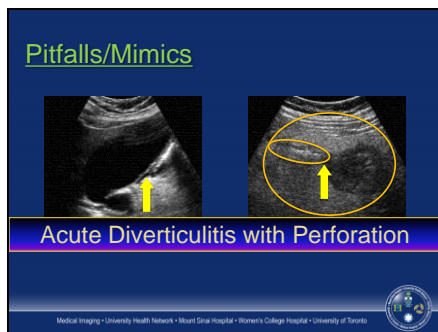
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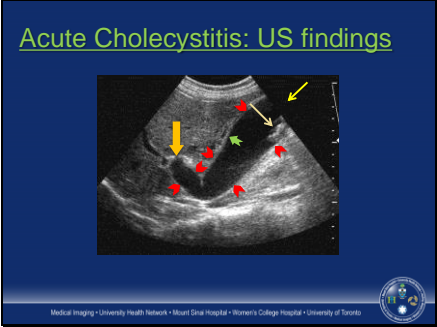
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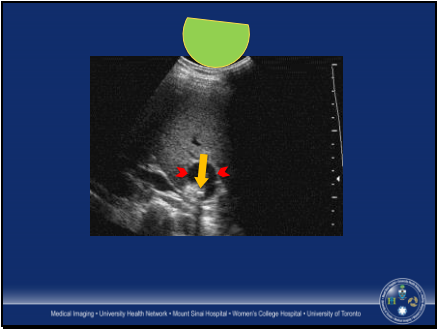
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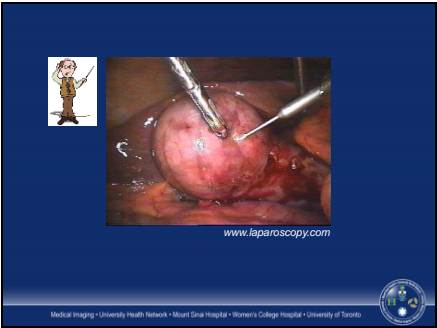
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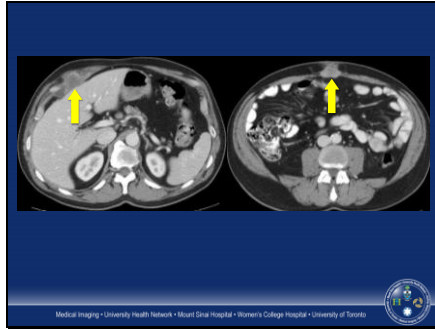
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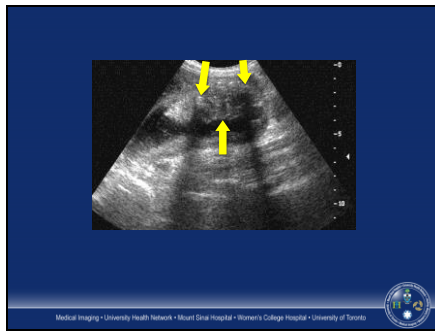
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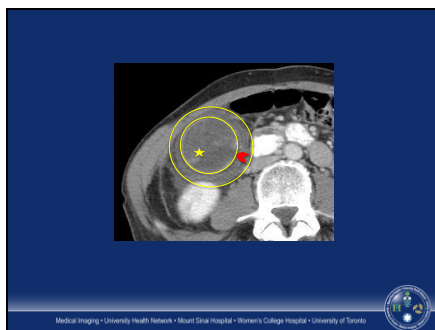
Slide 22



Slide 23



Slide 24




Slide 25


Gangrenous Cholecystitis

- 2% to 38% of acute cholecystitis
- Asymmetric thickening GB wall
- Intraluminal membranes
- -ve sonographic Murphy's sign: 66%
- Symptoms and signs may shift from RUQ


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Slide 26




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Slide 27



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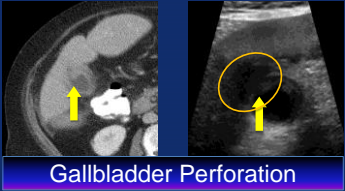
Slide 28



Acute cholecystitis; 1) Yes
2) No

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Gallbladder Perforation

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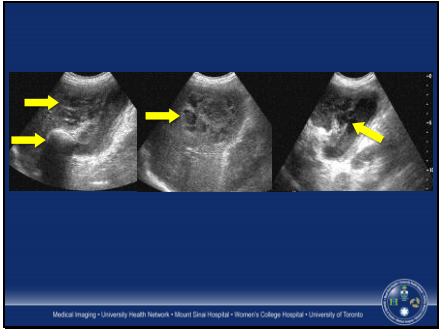
Slide 30

Gallbladder Perforation

- 5% to 10% of acute cholecystitis
- 19% to 24% mortality
- Acute - generalized peritonitis
- Subacute - pericholecystic abscess
- Chronic - internal biliary fistula

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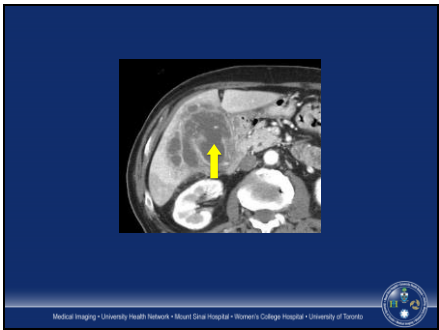
Slide 31



Slide 32



Slide 33



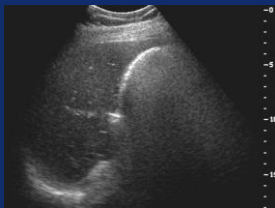
Slide 34

An 84-year-old man presents to the emergency department in septic shock. An abdominal ultrasound is performed. What is the most likely diagnosis?

- 1) Perforated duodenal ulcer
- 2) Gallstone ileus
- 3) Emphysematous cholecystitis
- 4) Porcelain gallbladder

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Slide 35



- 1) Perforated duodenal ulcer
- 2) Gallstone ileus
- 3) Emphysematous cholecystitis
- 4) Porcelain gallbladder

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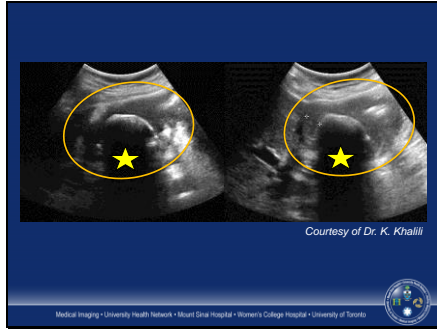
Slide 36

Emphysematous Cholecystitis

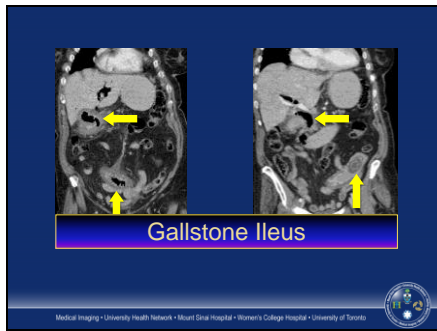
- Rare
- Gas forming bacteria
- Cholelithiasis often absent
- 38% patients diabetic - M:F 7:3
- Gangrene/perforation x 5

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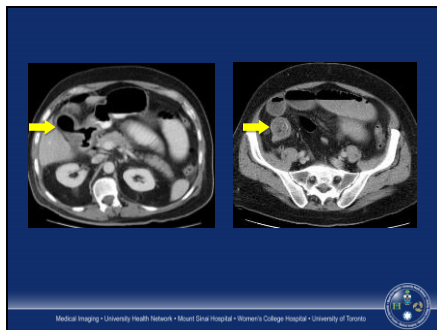
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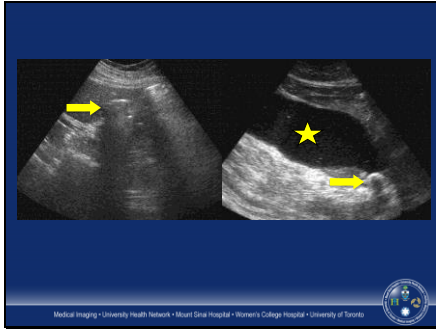
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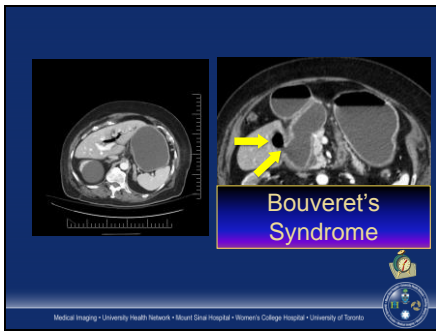
Slide 42



Slide 43



Slide 44



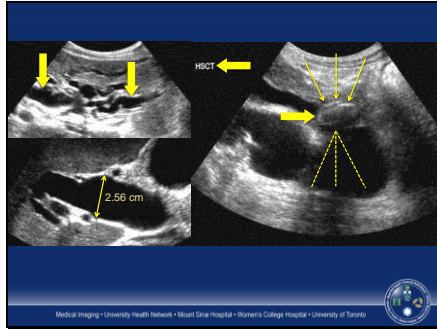
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Choledocholithiasis

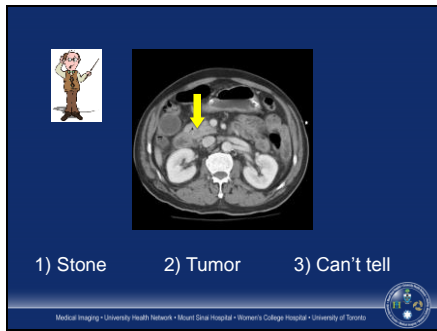
- Ultrasound 70% sensitivity
(Laing et al, AJR 1984;143:949-952)
- Dilated ducts improves detection
- Advances: Harmonic imaging
- Distal CBD: erect RPO
- Proximal/mid: supine/LPO

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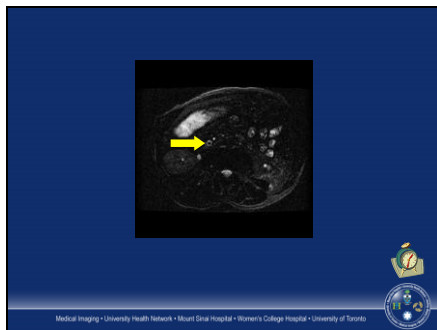
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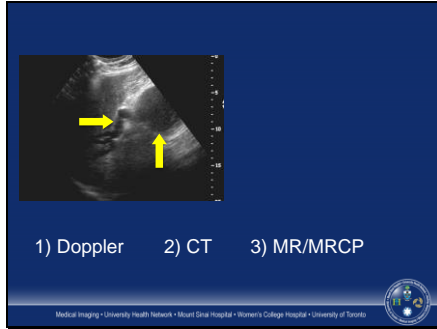
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Slide 48



Slide 49



Slide 50

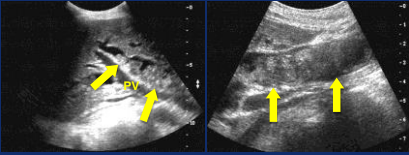
Ascending Cholangitis

- Pain, fever, leucocytosis, elevated LFTs
- Ultrasound hallmark: bile duct wall thickening
- CBD obstruction (stones)
- Intervention

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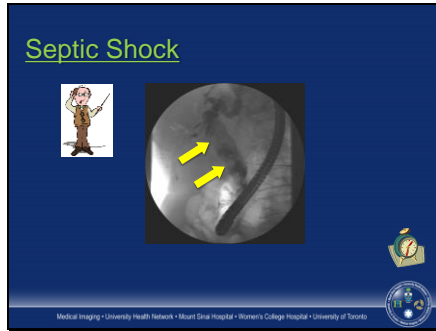
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Septic Shock

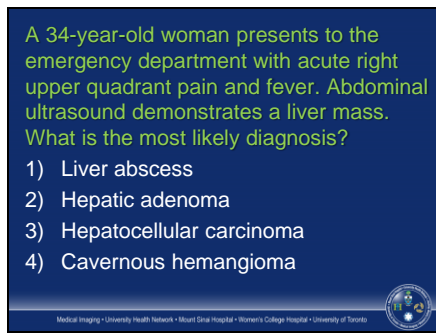


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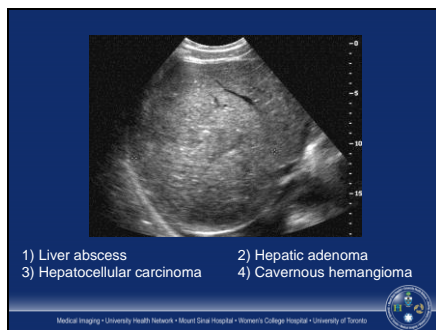
Slide 52



Slide 53



Slide 54



Slide 55

Liver Abscess

- Pyogenic or Amebic: Pain, fever, malaise
- No underlying cause in 50%, anaerobes
- Biliary tract, gut, bone, heart
- Percutaneous image guided drainage

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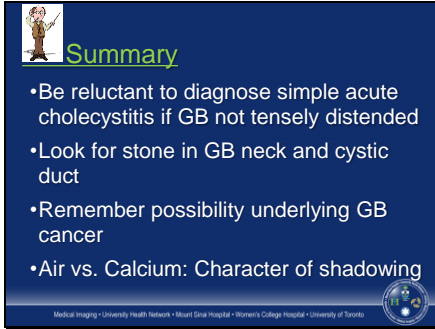
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Slide 64

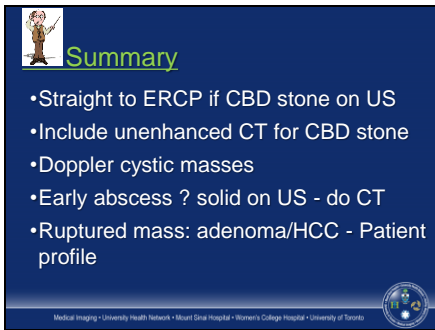


Summary

- Be reluctant to diagnose simple acute cholecystitis if GB not tensely distended
- Look for stone in GB neck and cystic duct
- Remember possibility underlying GB cancer
- Air vs. Calcium: Character of shadowing

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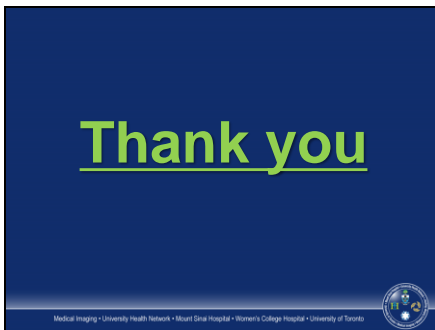


Summary

- Straight to ERCP if CBD stone on US
- Include unenhanced CT for CBD stone
- Doppler cystic masses
- Early abscess ? solid on US - do CT
- Ruptured mass: adenoma/HCC - Patient profile

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Thank you

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