Radiological Case report

性別:男性

年齢:64 y/o

General History

Present Illness: fever on and off for 1 week

88/03/07 visited our ER: fever up to 37.5 degree

r/o UTI and MBD the same day

88/03/09 visited our ER again: fever up to 39.0 degree

bil. flank pain and dyspnea noted too

PE: Abdomen: soft, flat,

no tenderness, no palpable mass

bowel sound: normoactive

Lab data: GOT 258 WBC 17540

GPT 217 Neut 94.1%

Na 127

Glu 416

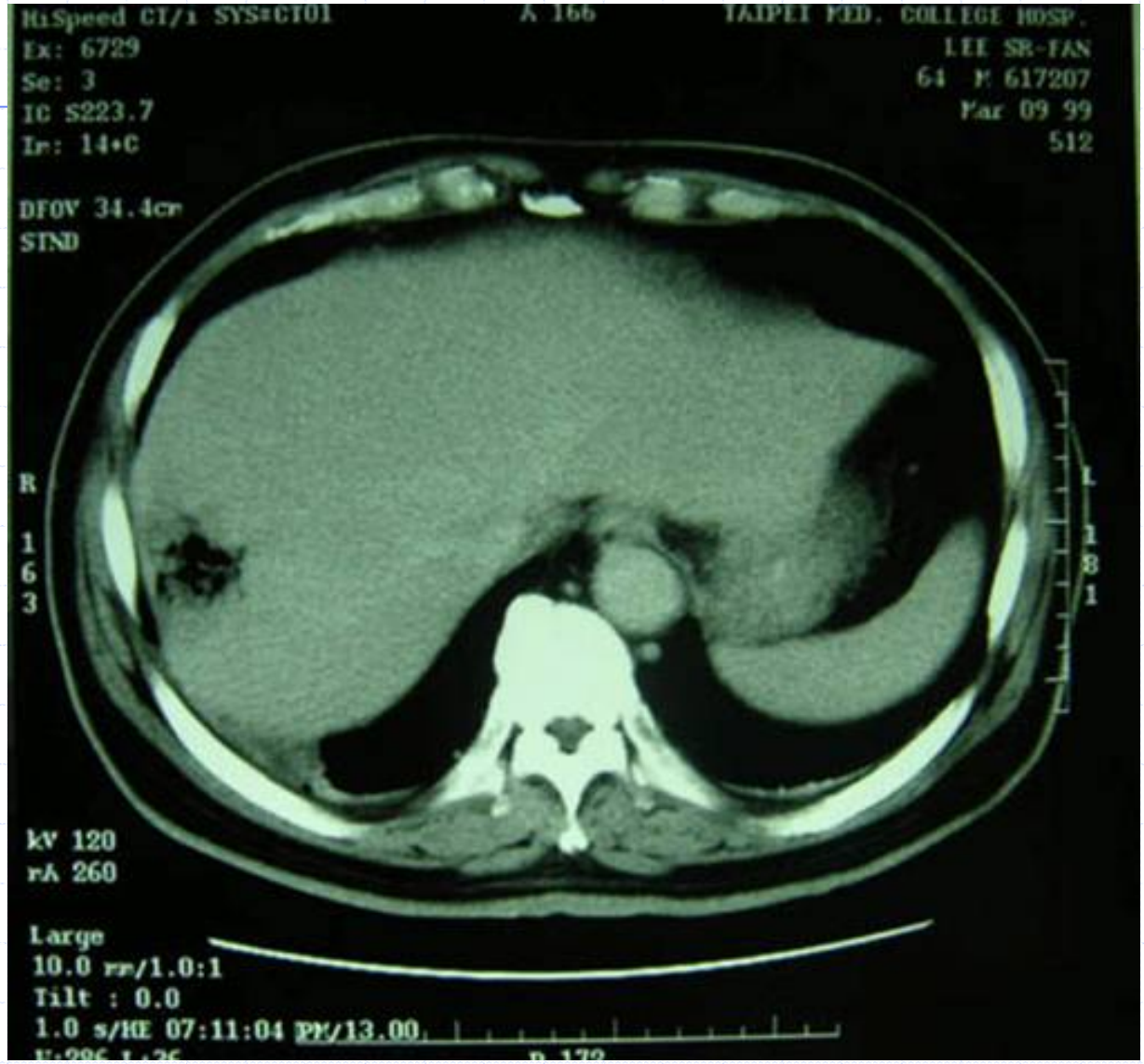
At our ER,

Under the impression of DM and hepatic abscess

➔Abdominal CT was arranged

Admission on 88/03/09

Imaging Finding:

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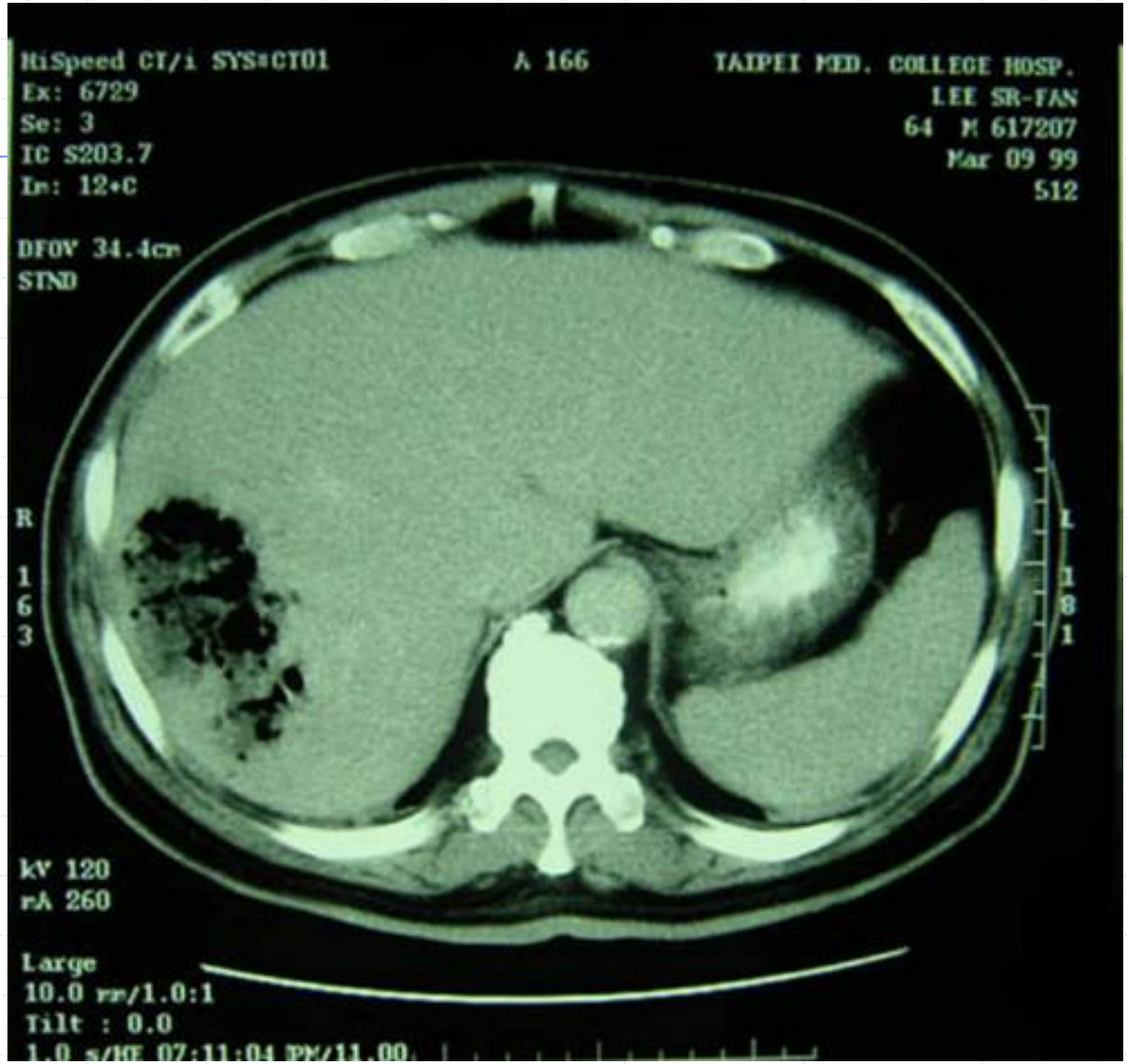
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In: 12+C
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64 M 617207
Mar 09 99
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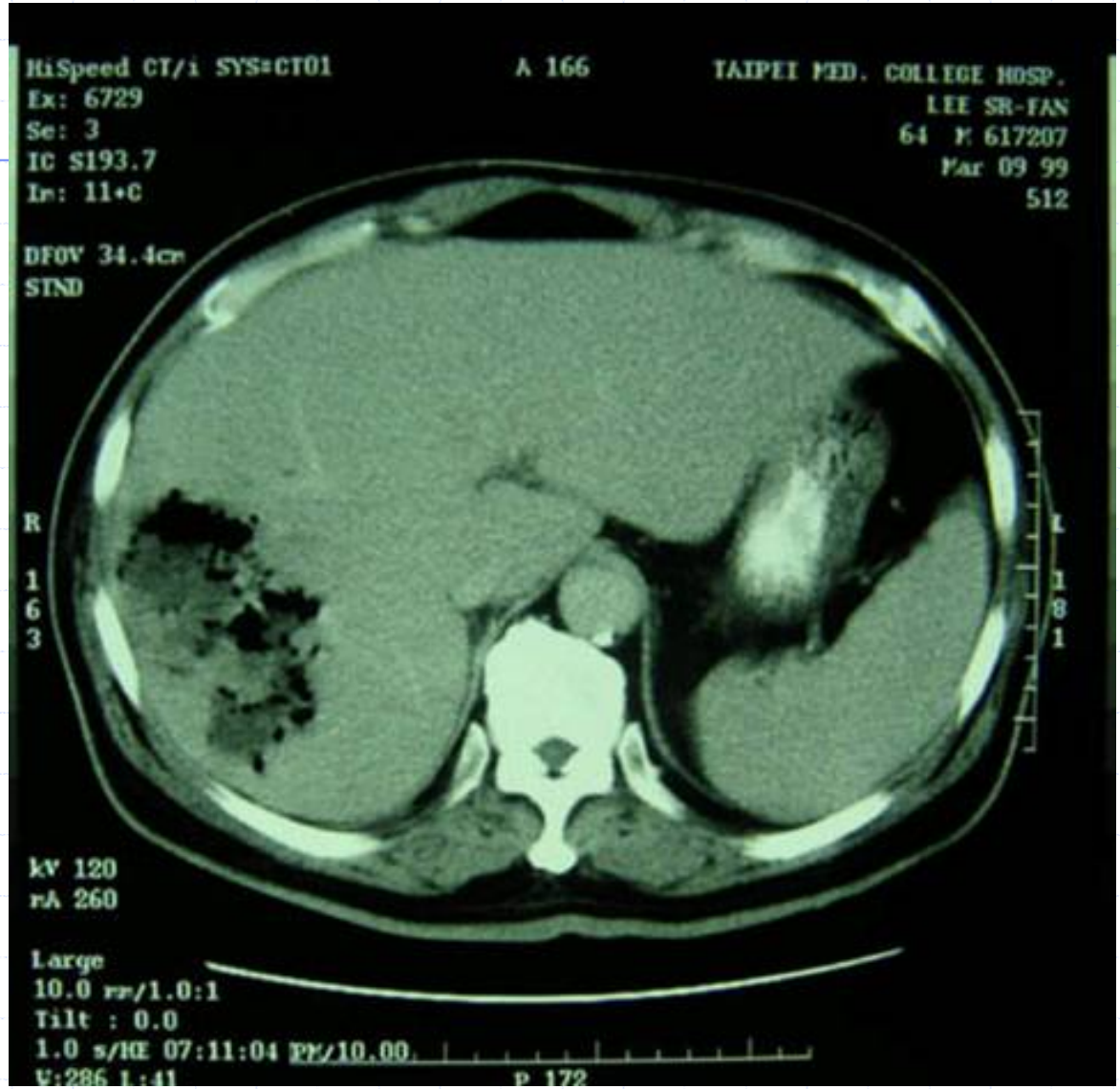
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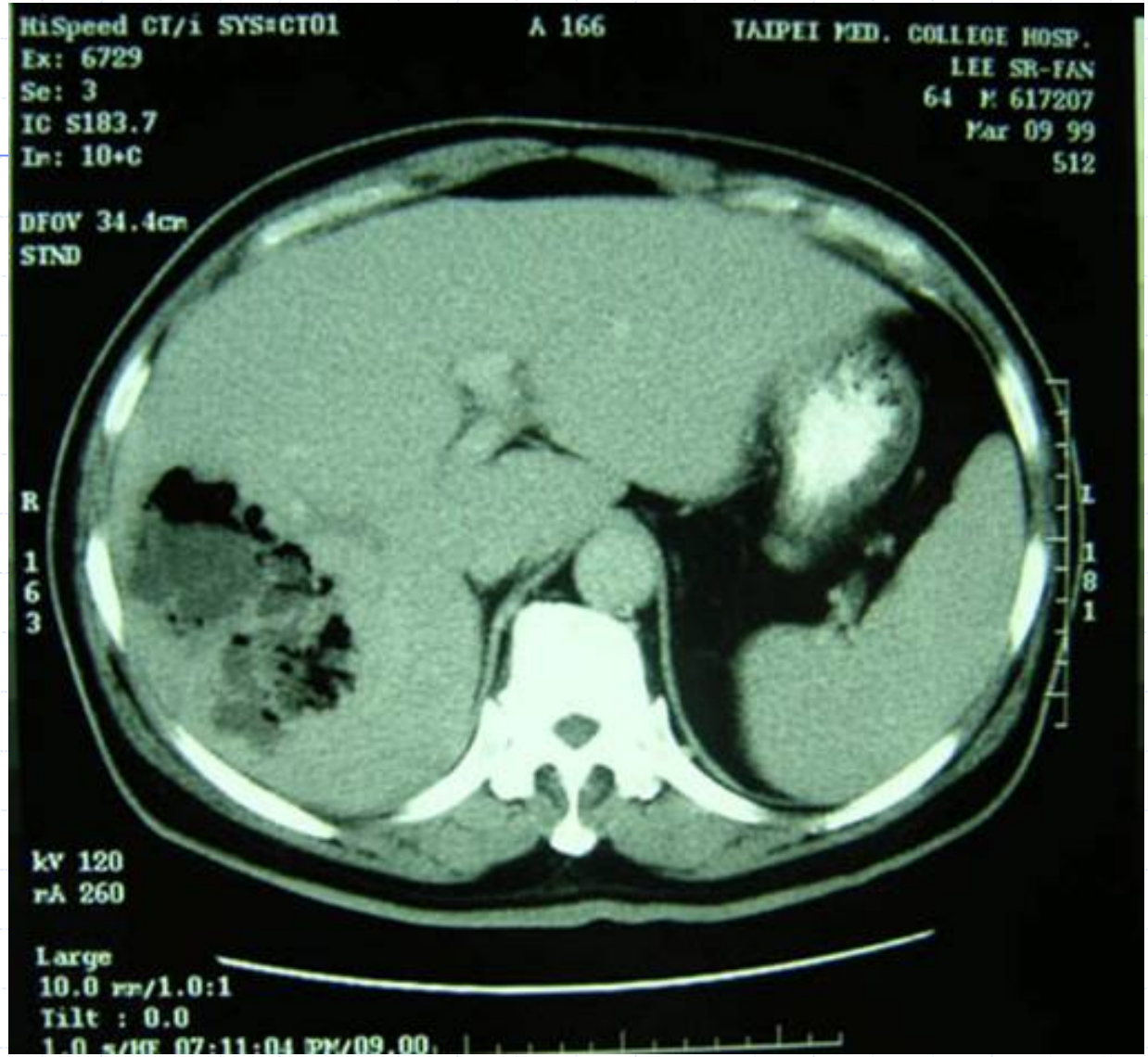
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kV 120
mA 260
Large
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Tilt : 0.0


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STND
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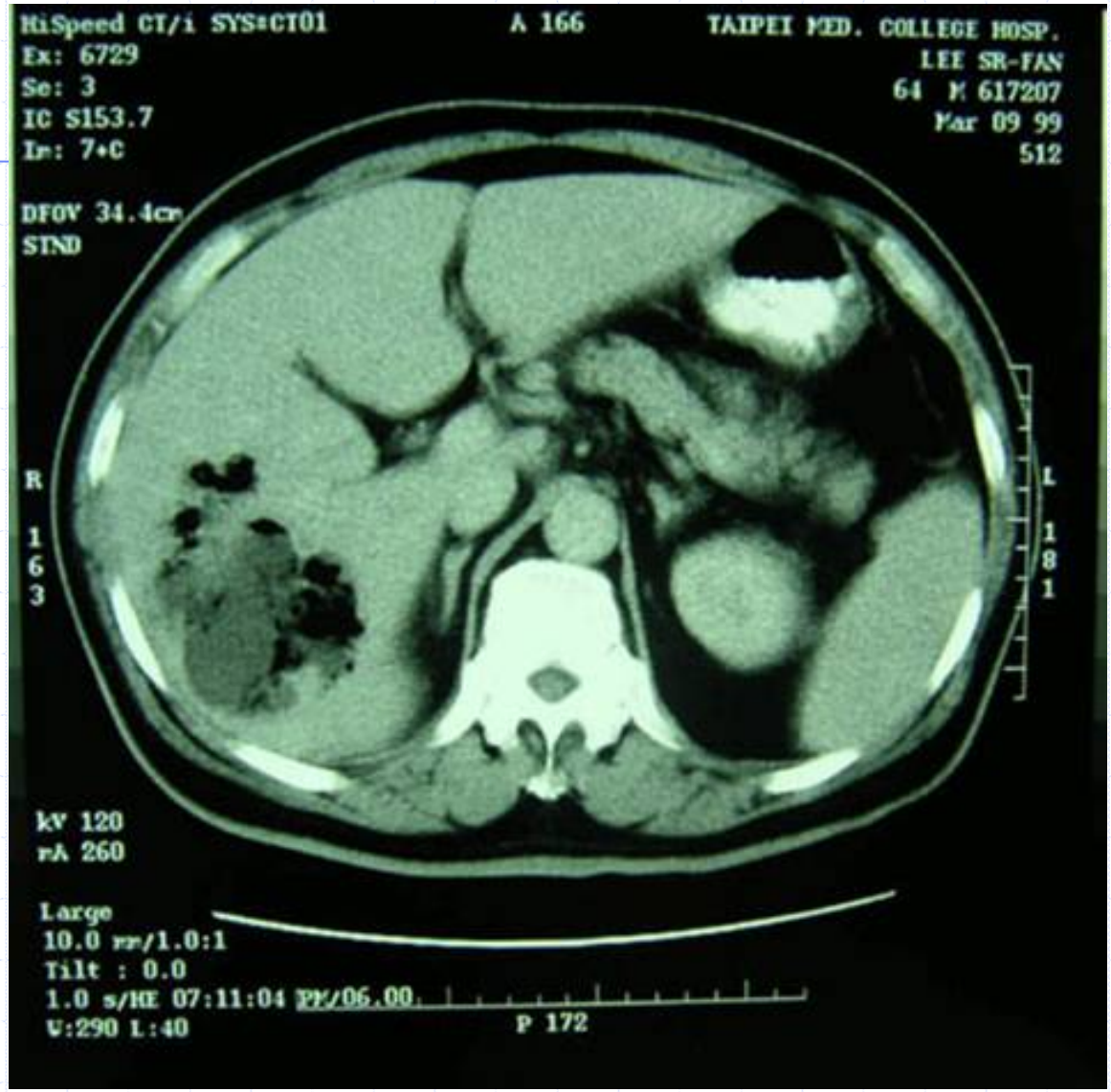
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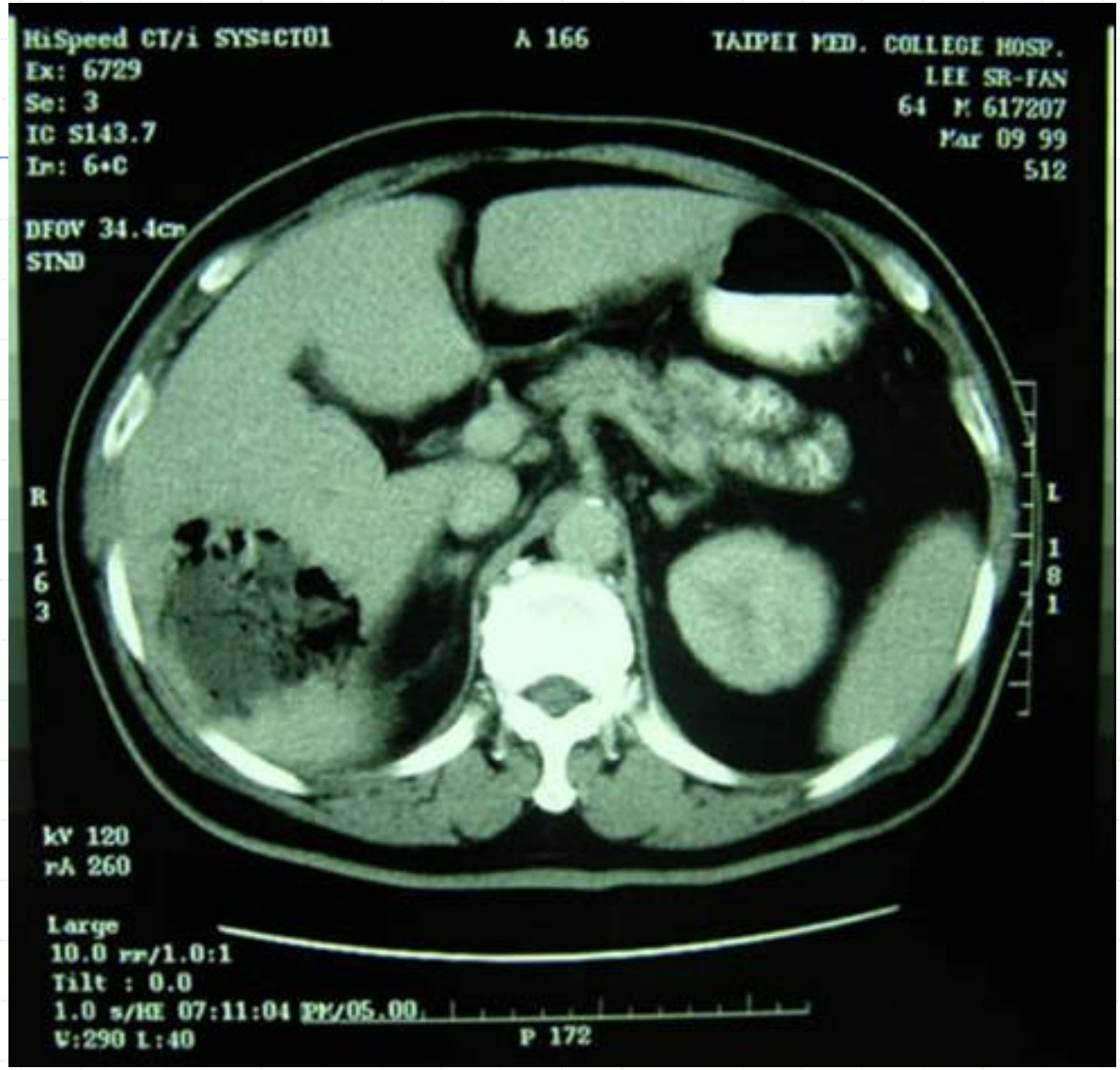
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TAIPEI MED. COLLEGE HOSP.
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64 M 617207
Mar 09 99
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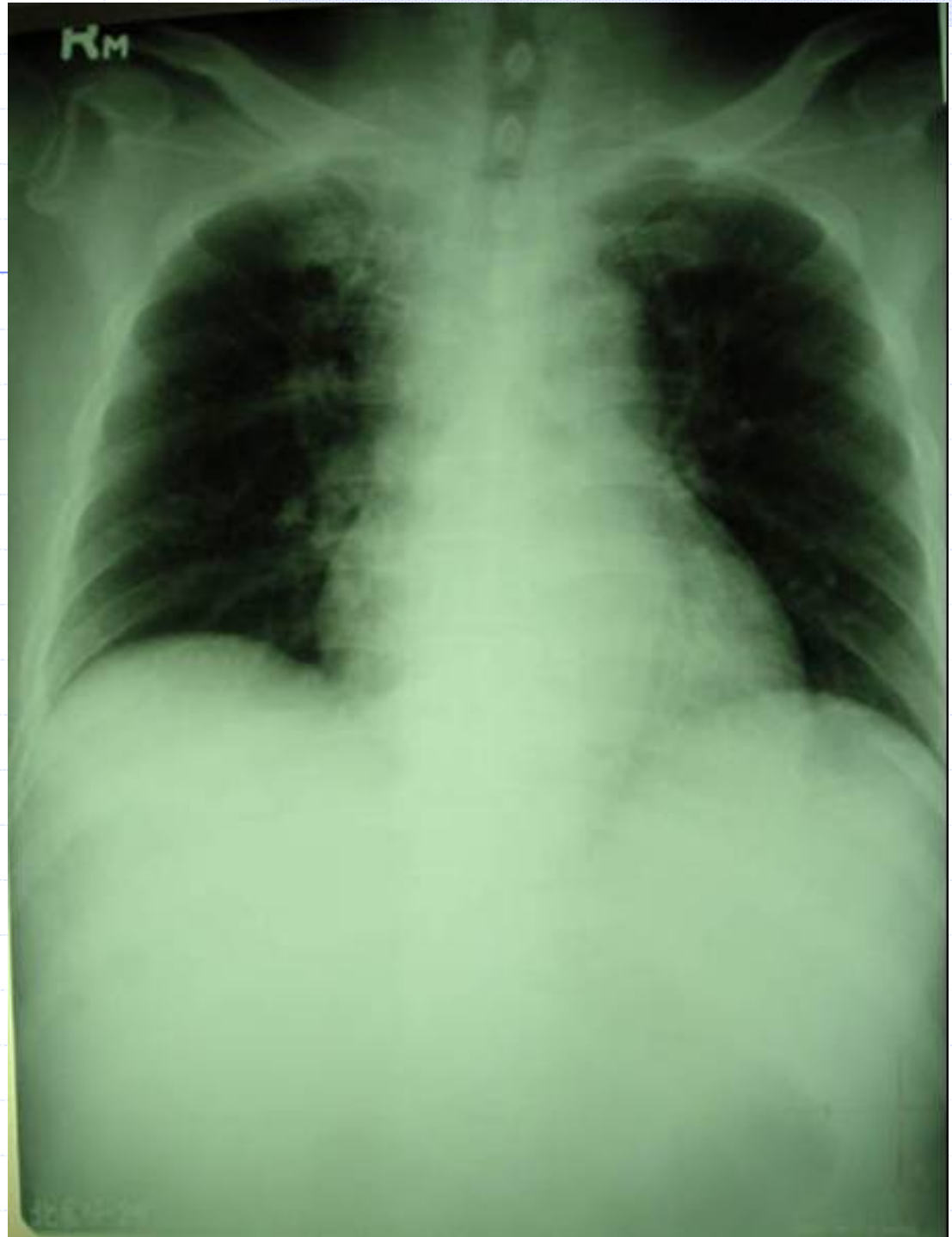
KM

CT:

a fluid collection space measuring about 5cm with air trapping at the right lobe liver.

CXR: no obvious abnormal finding

Differential diagnosis:

Liver abscesses include consideration of bacterial, protozoal, and fungal organisms.

The clinical presentation may suggest acute cholecystitis, cholangitis, portal pylephlebitis secondary to intra-abdominal infection (*eg*, appendicitis or diverticulitis), pyelonephritis, or a hepatic neoplasm. Imaging of the abscess followed by drainage and culture are crucial to establishing a correct diagnosis.

Table infections and inflammatory processes that may mimic hepatic abscesses

Organism or Lesion	Comments
Listeria monocytogenes	Frank abscess formation
Campylobacter colitis	Nonspecific hepatitis
Actinomyces israelii	Results in "sinus" formation
Candida albicans	Granulomas with microabscesses
Aspergillosis	Immunocompromised host
Cryptococcosis	Immunocompromised and elderly hosts
Candida glabrata	Diabetics
Hepatic pseudotumors	Can also mimic a neoplasm

OP findings:

1. open drainage of liver abscess
2. liver needle biopsy
3. a large abscess in segment 7 about 15 x 10 x 10 cm
4. central necrosis (++), air(++)
5. rubber tube was inserted
6. blood loss: 1000c.c.

Pathological findings:

Liver abscess

No liver cirrhosis

Acute inflammation

Necrosis of hepatocytes

•Sono guided 18#PTCD needle biopsy:

Clear reddish fluid

Culture: Klebsiella pneumonia

Discussion: Hepatic Abscesses

- Localized collection of pus in the liver resulting from any infection with destruction of hepatic parenchyma and stroma
- Type: pyogenic: 88%

  amebic: 10%

  fungal: 2%
- Location: multiple 50%.

CT: hepatomegaly

elevation of right diaphragm

pleural effusion

right lung lower lobe atelectasis

abscess with gas especially in K.P

MRI:hypointense on T1W1+ hyperintense on T2W1 (72%)

perilesional edema(35%)

double target sign:

hyperintense center(fluid)+hypointense sharply marginated inner ring (abscess wall)+hyperintense poorly marginated rim(perilesional edema), rim enhanced

Chest x-ray findings:

Basilar atelectasis, right hemidiaphragm elevation, and right pleural effusion are present in approximately 50% of cases; before advancements in radiologic technique, these served as diagnostic clues.

Pneumonias or pleural diseases often are initially considered because of the radiographic findings.

Pyogenic Abscesses

In the past, most cases of pyogenic liver abscess were a consequence of appendicitis in a young patient

The biliary tract (cholangitis, cholecystitis) is the most common source of infection, and abscesses are often multiple. Direct infection of the liver may occur along a penetrating vessel or from an adjacent septic focus Occasionally, hepatocellular carcinoma may present as a pyogenic liver abscess

Up to 40% of all cases of liver abscesses have no obvious identifiable cause and are considered cryptogenic

Organism	Gram-negative	Gram-positive	Miscellaneous
Aerobes	*Escherichia coli*	Enterococci	*Candida albicans*
	Klebsiella pneumoniae	*Streptococcus pyogenes*	*Candida glabrata* (rare)
	Pseudomonas spp	*Streptococcus sanguis* (rare)	*Aspergillus* spp (rare)
	Citrobacter spp	*Brucella melitensis*	*Cryptococcus* spp (rare)
	Morganella spp		Tuberculosis
	Proteus spp		
	Enterobacter spp		

Organism	Gram-negative	Gram-positive	Miscellaneous
	Salmonella spp		
	Yersinia spp (rare)		
Anaerobes		*Bacteroides* spp *Fusobacterium* spp *Streptococcus milleriPeptostreptococcus* spp *Peptococcus* spp	*Clostridium* spp (uncommon)
		Actinomyces spp (uncommon)	

Pathogenesis

1.In the past, most cases of pyogenic liver abscess were a consequence of appendicitis in a young patient

2.The biliary tract (cholangitis, cholecystitis) is the most common source of infection, and abscesses are often multiple.

3. Direct infection of the liver may occur along a penetrating vessel or from an adjacent septic focus

Pathogenesis

4. Less commonly, bacteremia may result from underlying abdominal disease (*eg*, diverticulitis, cholecystitis, perforated or penetrating peptic ulcer, gastrointestinal malignancy, inflammatory bowel disease, peritonitis), or an abscess may develop after chemoembolization of a hepatic neoplasm

5.Occasionally, hepatocellular carcinoma may present as a pyogenic liver abscess

Up to 40% of all cases of liver abscesses have no obvious identifiable cause and are considered cryptogenic

- Sex: no sexual predilection currently exists.
- Age: In the past, persons of 4^{th}~5^{th} decades of life were most commonly afflicted, primarily due to complications of appendicitis.

the demographic has shifted toward the 6^{th}~7^{th} decades of life.

Symptoms:

In the past, the patient with a pyogenic liver abscess typically presented with acutely spiking fevers, right-upper-quadrant abdominal pain, and often, shock.

In this era of antibiotic therapy, the presentation is less acute, often insidious, and characterized by malaise, low-grade fever, and dull abdominal pain that is increased by movement. Symptoms are often present for 1 month or more before a diagnosis is made.

Ultrasound:

- Ultrasound evaluation reveals hypoechoic masses with irregularly shaped borders.
- Hypoechoic round lesion with wall defined mildly echoic rim
- Distal acoustic enhancement
- Coarse clumpy debris or low-level echoes or fluid-debris level
- Intensely echoigenic reflection with reverberation (from gas) in 40~50%

CT scan (sensitivity 95-100%)

- Well-demarcated areas heterogeneous hypodense to the surrounding hepatic parenchyma.
- Peripheral enhancement is seen when IV contrast is administered.
- Gas can be seen in as many as 50% of lesions.
- Double target sign:wall enhancement+surrounding hypodense zone
- Cluster sign:several abnormal foci within the same anatomic area; suggestion of biliary origin

Treatment:

requires antibiotic therapy directed at the specific etiologic organism(s) and adequate drainage of the abscess.

In cases of multiple hepatic abscesses, only the largest lesion needs to be aspirated; the smaller lesions will usually resolve with antibiotic therapy alone

The initial antibiotic therapy should consist of the use of broad-spectrum antibiotics, generally including a penicillin or cephalosporin, an aminoglycoside, and either metronidazole or clindamycin to cover anaerobic infections.

Amebic Abscesses :

- An amebic abscess is most commonly located in the right lobe of the liver, close to the diaphragm, and is usually single.
- The diagnosis is based on clinical suspicion, hepatic imaging, and serologic testing.
- Aspiration of an amebic liver abscess should be performed only if the diagnosis remains uncertain. The presence of a reddish-brown pasty aspirate ("anchovy or chocolate sauce") is typical of an amebic liver abscess.

Pathogenesis:

Entamoeba histolytica exists in trophozoite or cyst form. Cysts pass through the gastrointestinal tract and transform into trophozoites in the colon where they invade the mucosa and result in typical "flask-shaped" ulcers. The organism is then carried by the portal circulation to the liver, where an abscess may develop. Occasionally, organisms pass through the liver and result in brain or lung abscesses.

- Stool microscopy for the detection of trophozoites or cysts is usually negative.
- serologic tests using purified antigens are now available for the diagnosis of amebic abscess.
- Hepatic imaging studies cannot reliably distinguish a pyogenic from an amebic liver abscess.

•CT:

Nodularity of abscess wall (60%)

Internal septations (30%)

Non-gas content (unless hepatobronchial or hepatoenteric fistula present)

•Treatment:

Standard therapy consists of metronidazole, 750 mg, given three times daily orally or, if necessary, intravenously, for 5 to 10 days.