

28th **ECCMID** Madrid, Spain
21 – 24 April 2018

 **ESCMID** EUROPEAN SOCIETY OF CLINICAL
MICROBIOLOGY AND INFECTIOUS DISEASES

CLINICAL GRAND ROUNDS



Fatima Adhi

Case 8

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FELLOW, INFECTIOUS DISEASES
NEW YORK UNIVERSITY SCHOOL OF MEDICINE

原讲者：

Fatima Adhi

工作单位：Infectious
Diseases New York
University School Of
Medical

翻译者：王青青、王萌冉
工作单位：复旦大学附属
中山医院感染病科



Chief complaint

71 year old male

Worsening abdominal pain x 1 day

+

Altered mental status x few hours

渐进性腹痛1天，神志改变数小时。



Case Description



3 MONTHS PRIOR

Diagnosed with
Adenocarcinoma of
the appendix and
cecum

阑尾及回盲部腺癌

Metastatic to
liver and lungs

肝脏及肺部转移

Case Description



3 MONTHS PRIOR

Diagnosed with
Adenocarcinoma of
the appendix and
cecum

Metastatic to
liver and lungs

*Pain control
with Fentanyl*

*Mediport
placed*

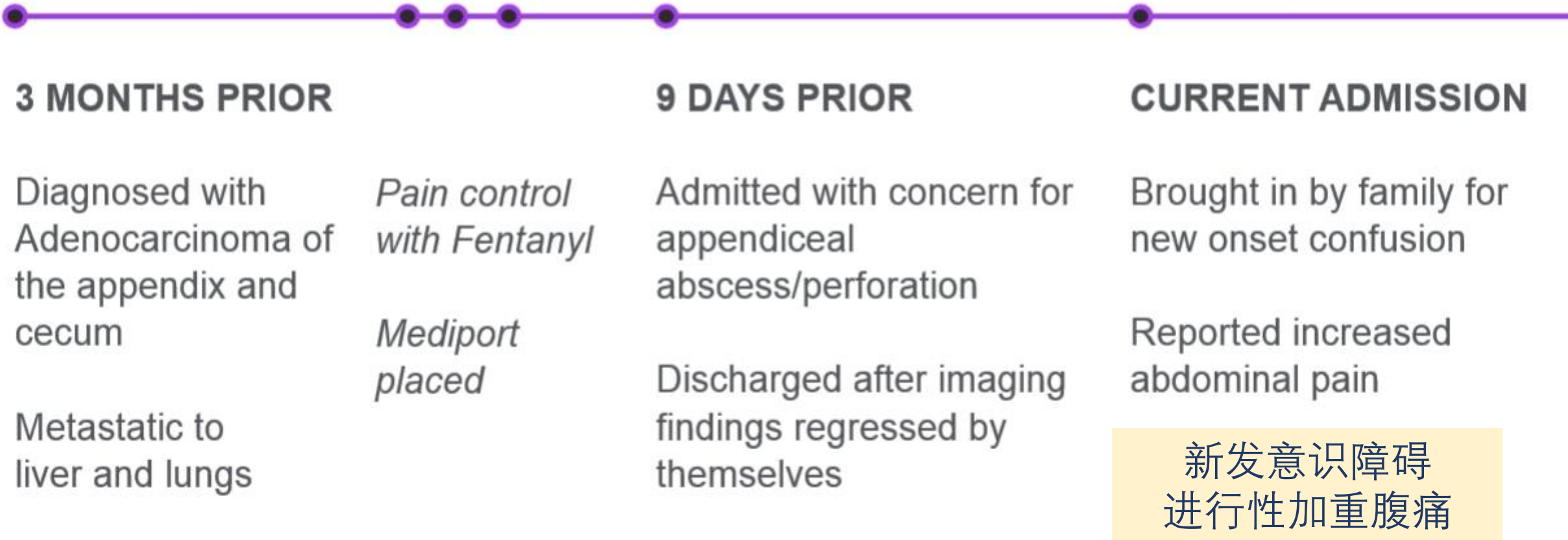
芬太尼镇痛治疗

静脉输液港植入

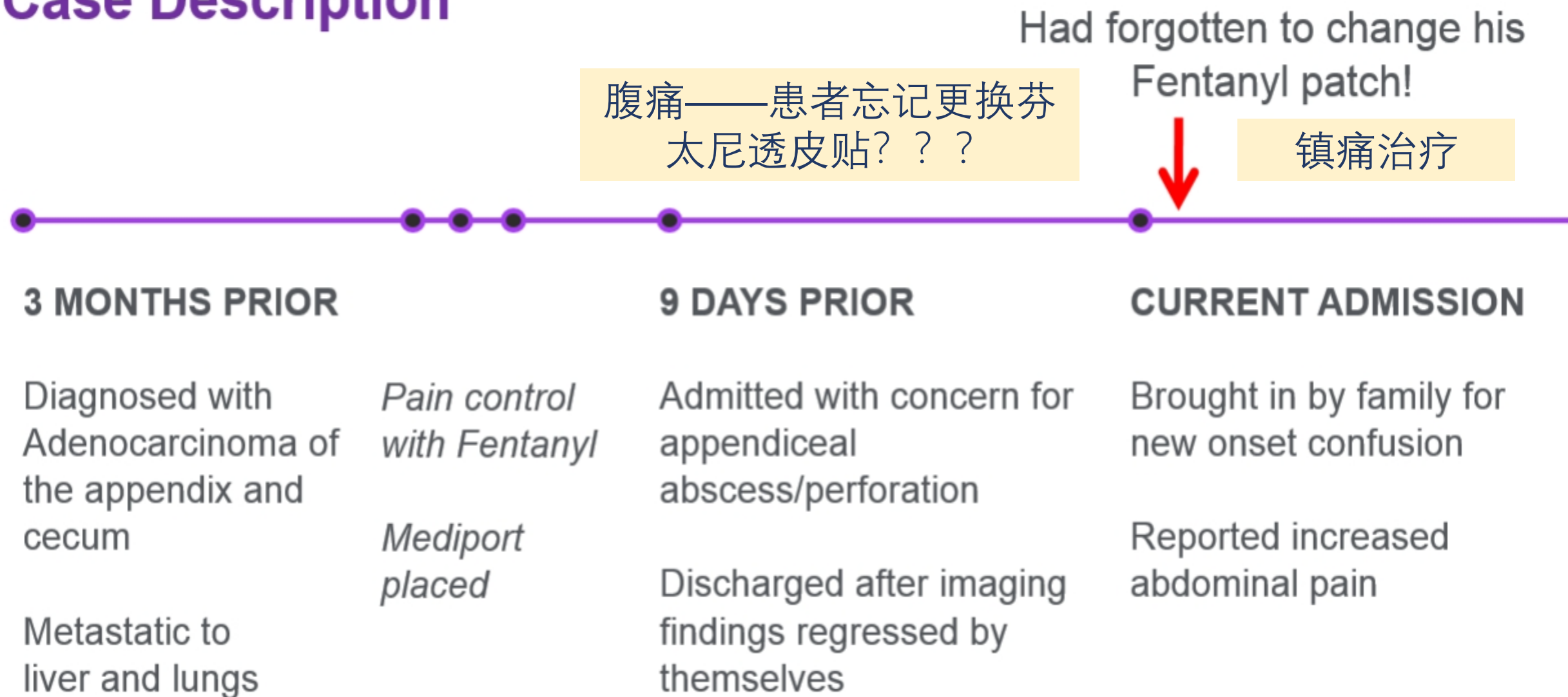
Case Description



Case Description



Case Description



Review of systems

Reported mild Left knee discomfort

No other complaints 轻度左膝关节疼痛

Past Medical and Surgical History

Diabetes mellitus

既往糖尿病史
血糖控制尚可

Social and Exposure History

Former smoker, rare alcohol use

Remote inhalational cocaine use, no other recreational drug use 可卡因吸食史

Lives by himself in the Bronx (Northern borough of New York City)

Sexually active, **4-5 new female partners/month**, no barrier protection used

无保护措施性生活活跃

Travel history

Former veteran, stationed in various regions within the United States

退伍军人，曾于美国国内多地驻扎

Vital signs

入院生命体征平稳

Pulse 135

Blood pressure 168/79

Temperature 37.6°C

Respiratory rate 26

Saturation of O₂ 98% on RA

Physical Examination

输液港在位，无炎症表现

Mediport in place, no surrounding signs of inflammation or discharge

Right lower quadrant tenderness to palpation (present previously) 右下腹肌紧张

Swollen, red L knee with palpable effusion

左膝关节可及红肿，触之有波动感

General and systemic exam otherwise unremarkable

DAY # 1

Aspiration of fluid from Left knee
Started on Vancomycin + Cefepime

入院第一天:

左膝关节脓液引流

万古霉素+头孢吡肟经验性抗感染治疗

DAY # 1

Aspiration of fluid from Left knee
Started on Vancomycin + Cefepime

TEST	RESULT
Fluid Description	Cloudy, yellow
Viscosity	Viscous
RBC /uL	45,000
WBC /uL	1,208,000
Neutrophils %	92
Lymphocytes %	0
Macrophages %	7
Malignant cells	None
Crystals	None

左膝关节穿刺液常规:

- 1) 积液为黄色浑浊样粘液;
- 2) 白细胞总数及中性粒细胞百分比明显升高;
- 3) 未见恶性细胞;

DAY # 1

Aspiration of fluid from Left knee
Started on Vancomycin + Cefepime

TEST	RESULT
Fluid Description	Cloudy, yellow
Viscosity	Viscous
RBC /uL	45,000
WBC /uL	1,208,000
Neutrophils %	92
Lymphocytes %	0
Macrophages %	7
Malignant cells	None
Crystals	None

DAY # 2

Arthroscopic I&D and synovectomy
Vancomycin + Cefepime continued

入院第二天：
关节镜下滑膜切除术
继续万古霉素+头孢吡肟抗感染治疗

DAY # 1

Aspiration of fluid from Left knee
Started on Vancomycin + Cefepime

TEST	RESULT
Fluid Description	Cloudy, yellow
Viscosity	Viscous
RBC /uL	45,000
WBC /uL	1,208,000
Neutrophils %	92
Lymphocytes %	0
Macrophages %	7
Malignant cells	None
Crystals	None

DAY # 2

Arthroscopic I&D and synovectomy
Vancomycin + Cefepime continued

Frank purulence

明显的化脓性表现

DAY # 3

No further fevers

Hemodynamically stable

Worsening abdominal pain

Developed **hiccups + jaundice**

入院第三天：

患者未再出现发热

腹痛仍然持续加重

频繁的呃逆以及轻度黄疸

DAY # 3

No further fevers

Hemodynamically stable

Worsening abdominal pain

Developed **hiccups + jaundice**

生化检查：
肝酶明显升高

TEST	10 DAYS PRIOR	DAY 3
AST U/L (10-30)	108	<u>307</u>
ALT U/L (10-40)	24	<u>82</u>
T. bilirubin $\mu\text{mol/L}$ (5-21)	0.8	<u>5.0</u>
Alk Phos U/L (30-120)	444	245

ECCMID PANEL DIFFERENTIAL DIAGNOSIS

讨论问题：
该患者考虑的诊断？
下一步需要进行那些检查？

DAY # 3

Blood cultures from admission

1 of 6 bottles positive – anaerobic

ID consultation requested

Cefepime changed to Piperacillin/Tazobactam

入院第三天：

入院当天留取血培养标本报阳（六瓶中一瓶报阳—厌氧）

革兰染色结果未知

感染病科会诊调整为哌拉西林他唑巴坦治疗

DAY # 4

Blood cultures from admission

3 of 6 bottles positive – all anaerobic

入院第四天：

六瓶血培养标本中三瓶报阳—均为厌氧

DAY # 4

Blood cultures from admission

3 of 6 bottles positive – all anaerobic

病史特点:

发热伴白细胞升高

腹痛

单关节化脓性关节炎

厌氧菌血症

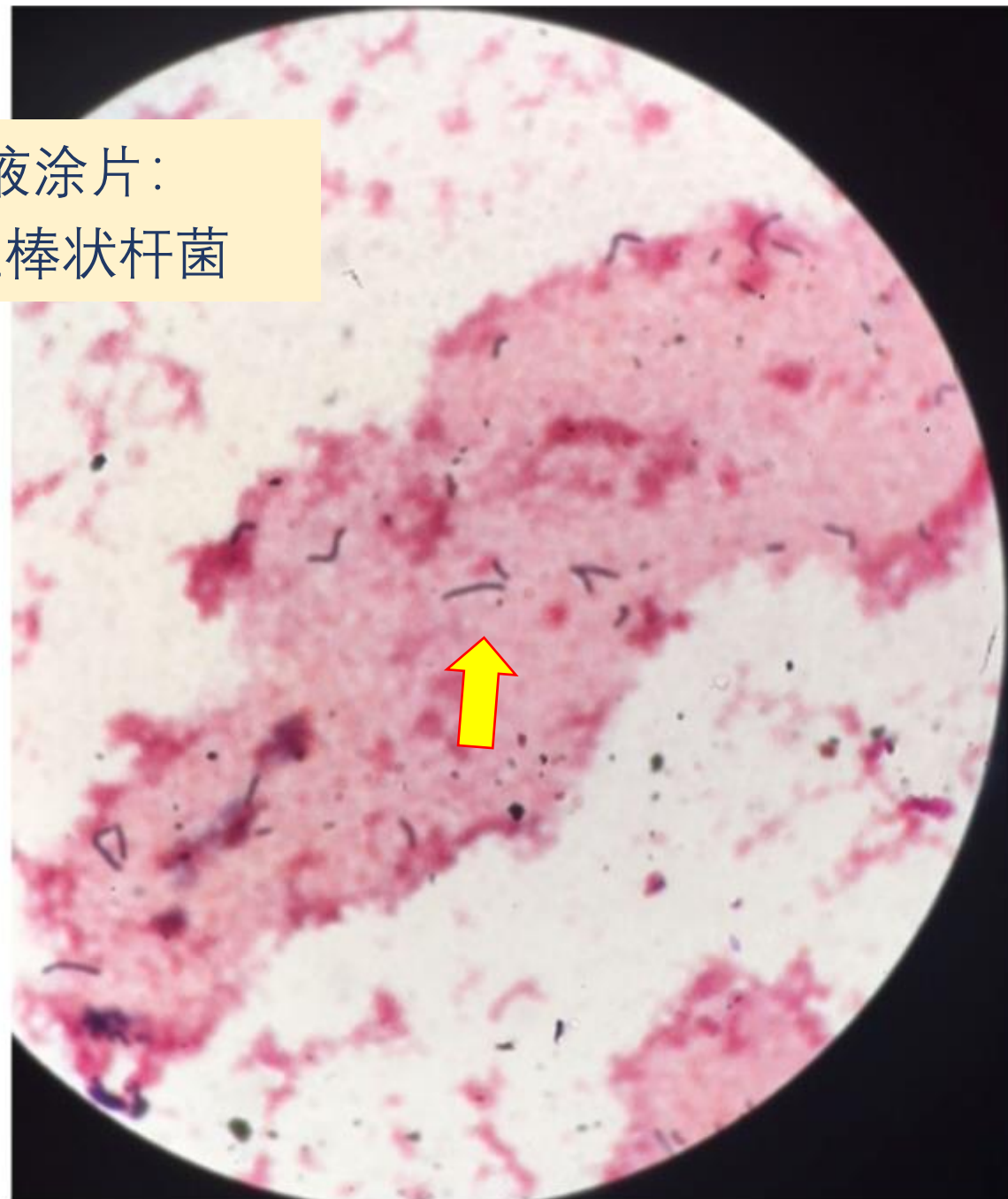
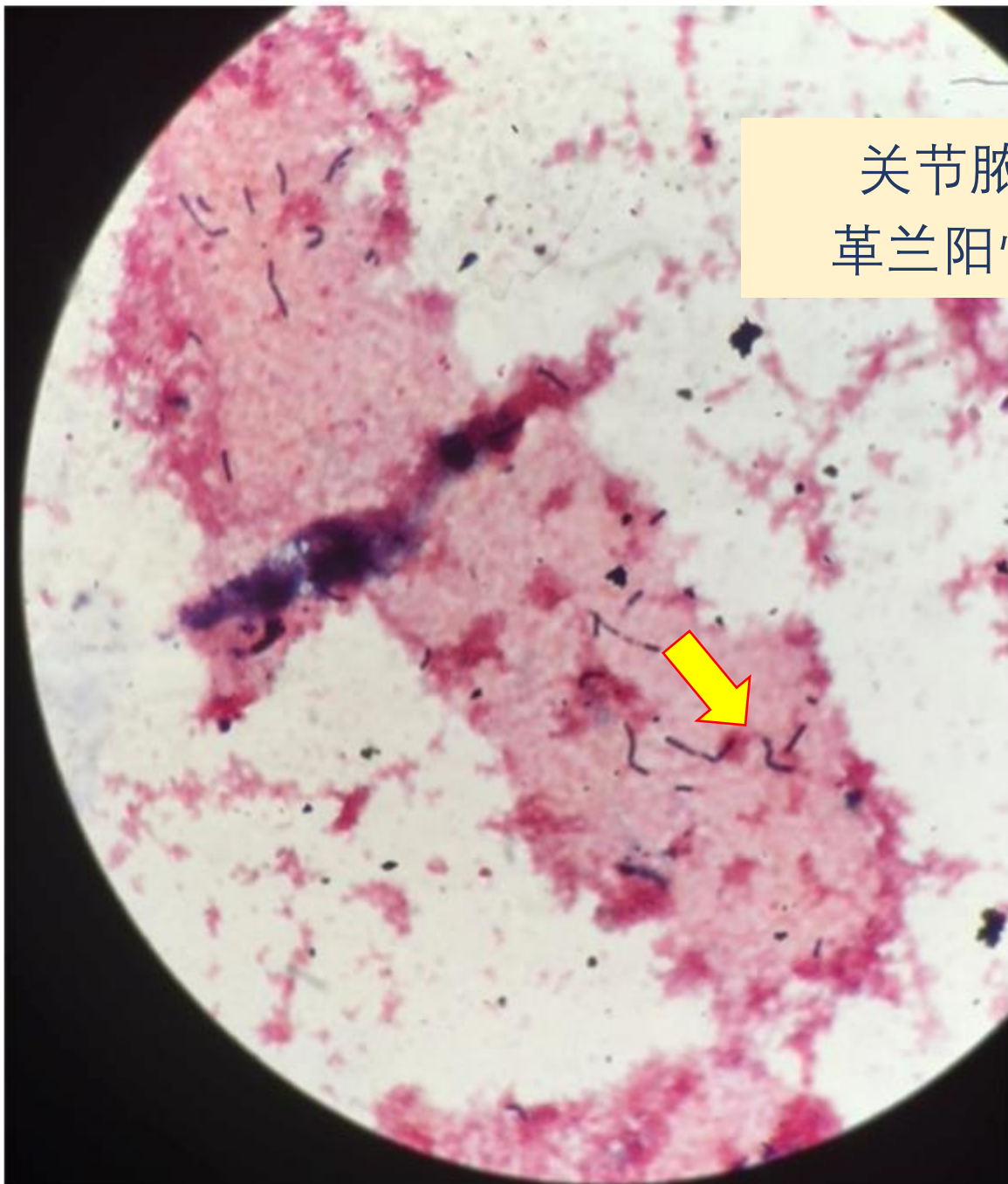
Fever + leukocytosis

Abdominal pain

Monoarticular septic arthritis

Anaerobic bacteremia

关节脓液涂片：
革兰阳性棒状杆菌

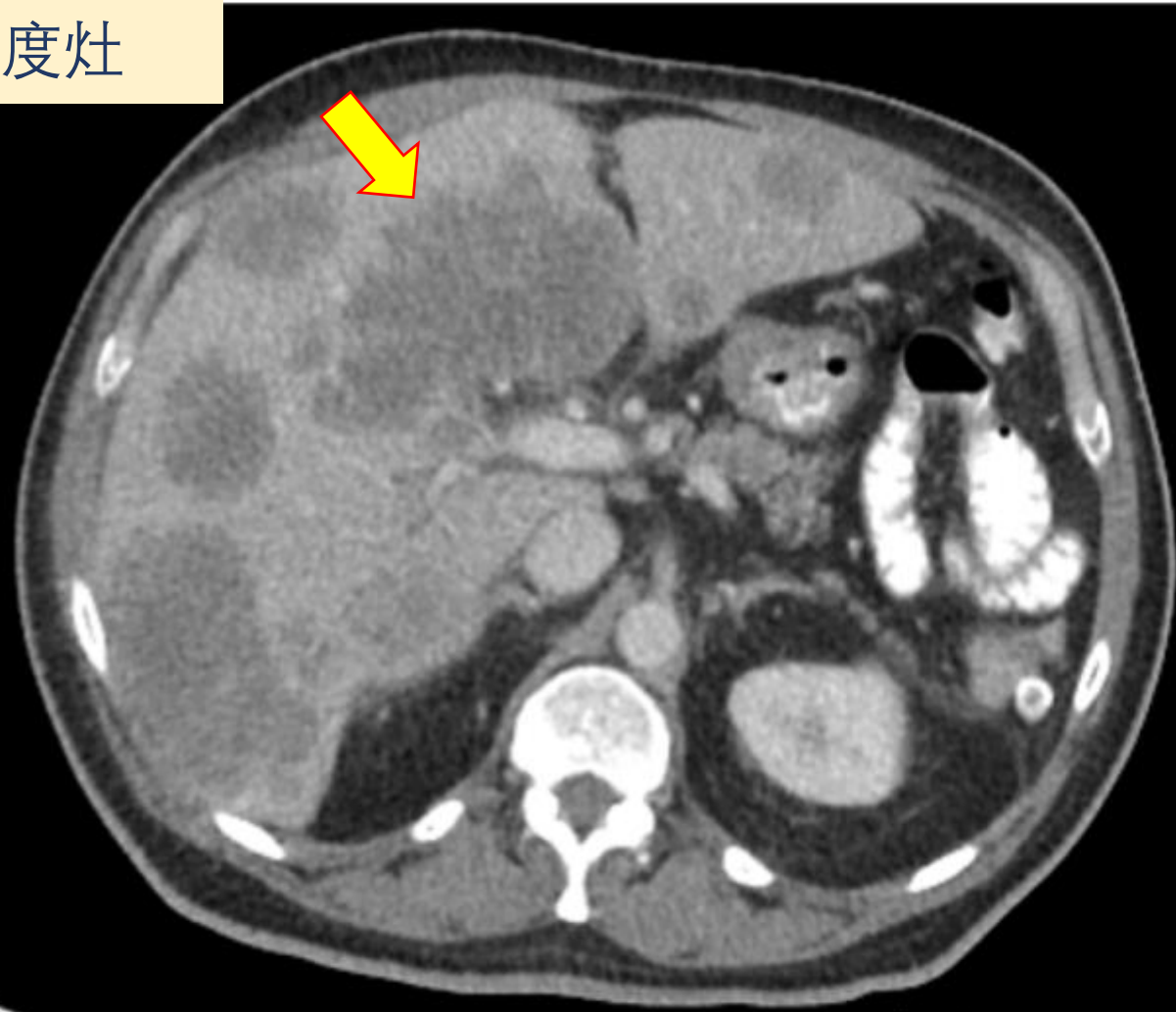
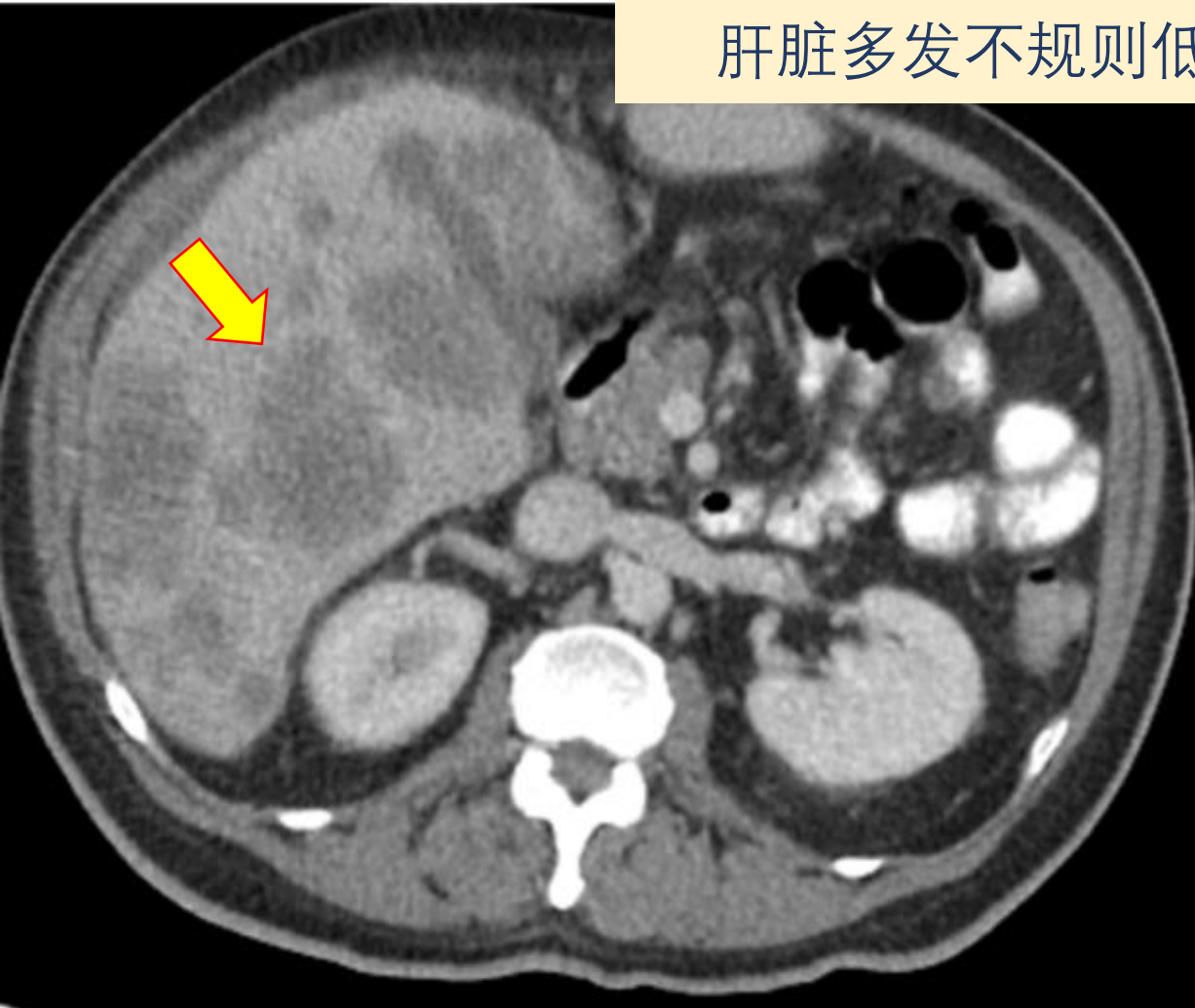


ECCMID PANEL DISCUSSION

讨论问题：
该患者考虑的诊断？
还需要完善那些检查？
应该如何治疗？

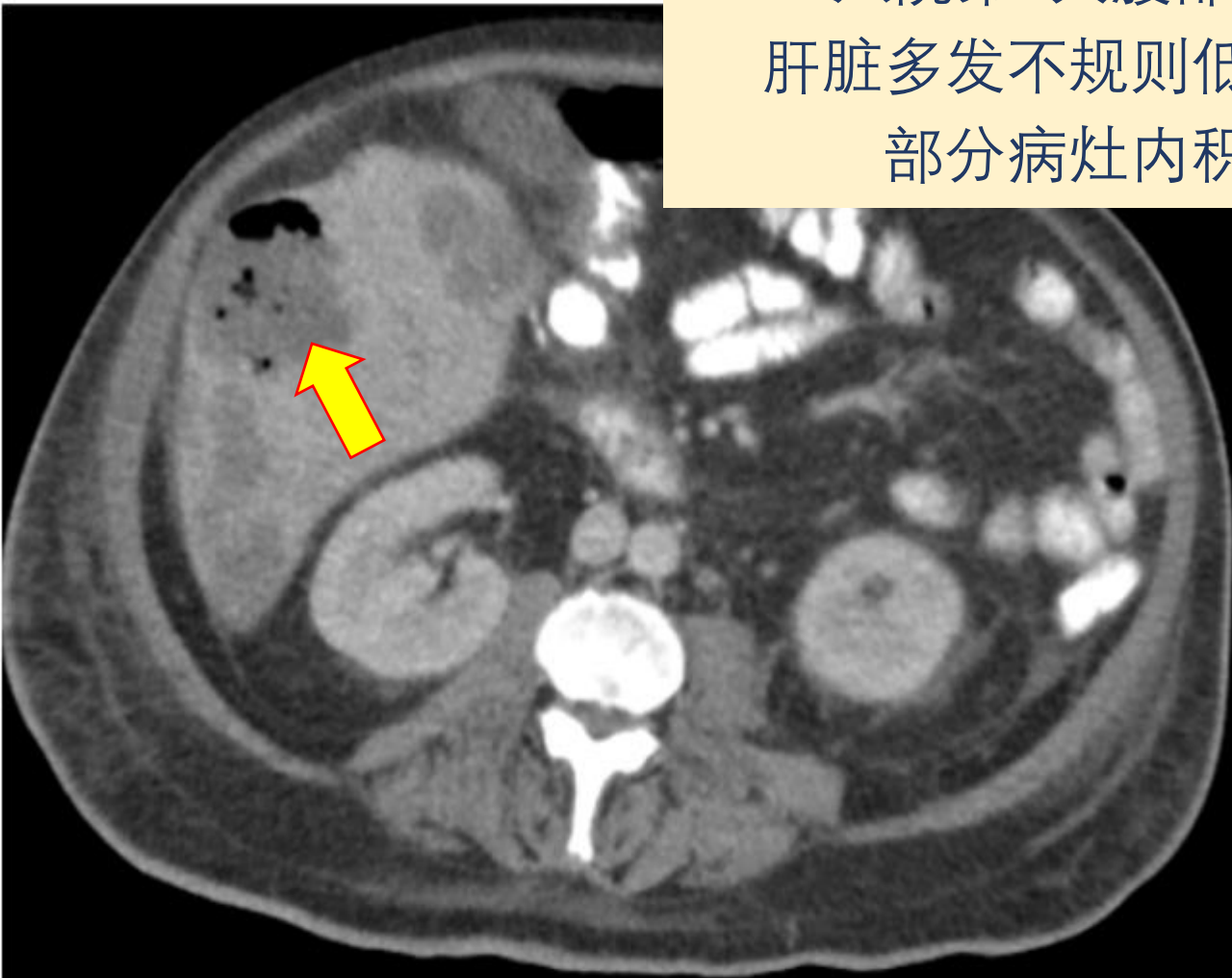
10 DAYS PRIOR

入院前10天腹部CT：
肝脏多发不规则低密度灶



DAY # 4

入院第4天腹部CT：
肝脏多发不规则低密度灶
部分病灶内积气



DAY # 6

Aspiration of hepatic lesions – **Frank purulence**

Drains placed in 2 of 3 superinfected metastatic lesions

入院第6天：

肝脏内病灶穿刺活检——明显化脓性表现

Clostridium septicum

Positive growth in cultures of blood, synovial fluid and hepatic lesion aspirate

最终诊断：
腐败梭菌感染
(血流、关节腔、肝内病灶)

Clostridium septicum

Positive growth in cultures of blood, synovial fluid and hepatic lesion aspirate

Other unusual presentations

Endocarditis

Osteomyelitis

Brain abscess

Mycotic aneurysm

其他罕见表现：

心内膜炎、骨髓炎、脑脓肿及感染性动脉瘤

Septic arthritis caused by *Clostridium septicum*

8 CASES

6 eventually diagnosed with colorectal carcinoma

7 involved knee joints (2 prosthetic), 1 native shoulder (Diabetes)

All 8 had positive synovial cultures, **1 had bacteremia**

2 progressed to death from secondary complications

目前为止已经报道的由腐败梭菌感染引起的化脓性关节炎一共有8例，其中6例最终诊断为结直肠癌；7例为膝关节感染（2例为关节假体感染），1例为肩关节感染（合并糖尿病）；所有8例患者滑膜液培养均为阳性，其中1例合并菌血症；2例由于并发症最终死亡。

J Bone Joint Surg Am. 1986 Mar;68(3):465-6
J Arthroplasty. 2011 Jun;26(4):666.e9-11
J Bone Joint Surg Am. 2005 Apr;87(4):874-7
CMAJ. 2010 Sep 21;182(13):1446-7

J Rheumatol. 1986 Jun;13(3):662-3
Br J Rheumatol. 1992 Aug;31(8):571-2
South Med J. 1983 Mar;76(3):415
QJM. 2016 Jul;109(7):481-2

Superinfection of hepatic metastases by *Clostridium septicum*

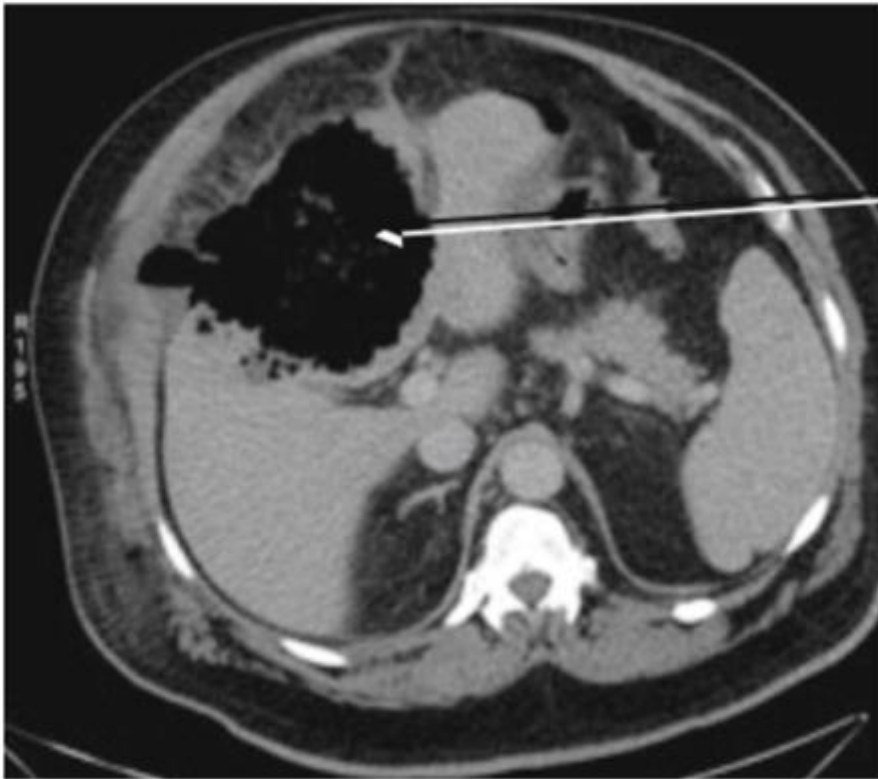
13 CASES

10 with known underlying colorectal carcinoma

3 presented with pneumoperitoneum

目前报道的由肝脏转移瘤合并腐败梭菌感染的患者共13例：其中10例肿瘤原发灶为结直肠；3例患者有气腹表现。

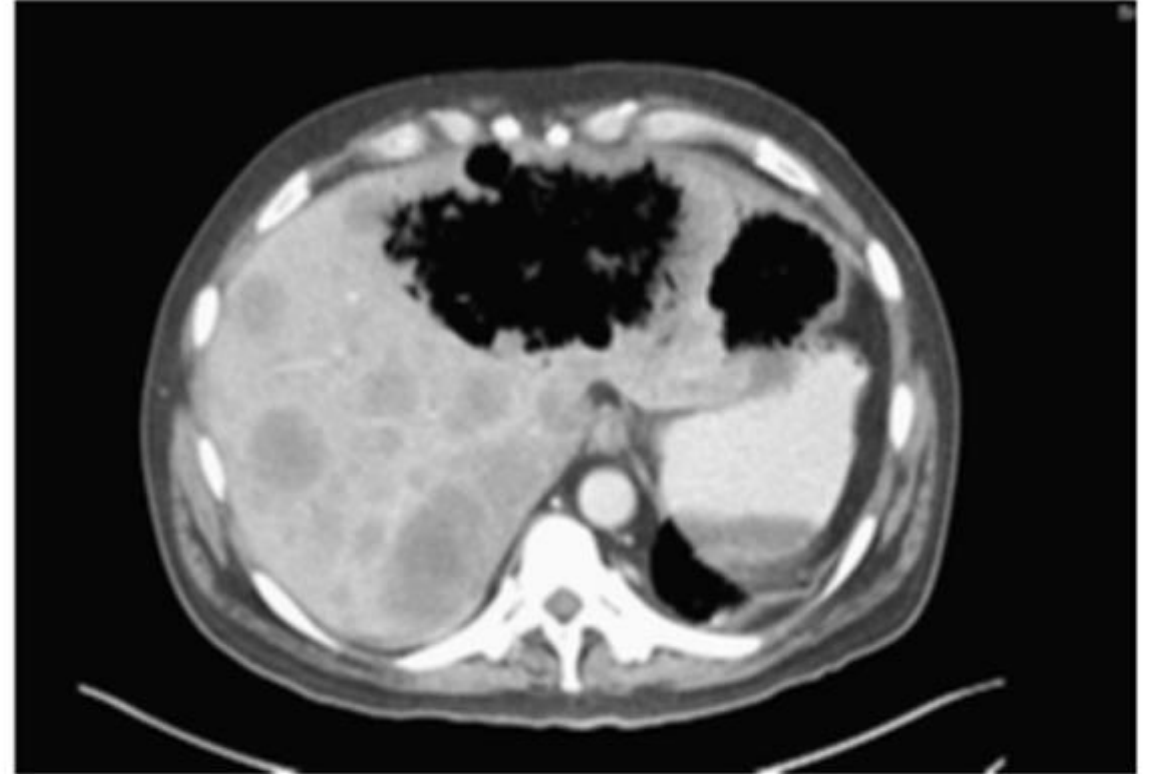
Superinfection of hepatic metastases by *Clostridium septicum*



Liver metastasis containing gas and communicating with sub diaphragmatic space

本例患者为肝转移灶合并感染，腹部CT可见明显的肝脏内积气，并且与膈下相通。

Superinfection of hepatic metastases by *Clostridium septicum*

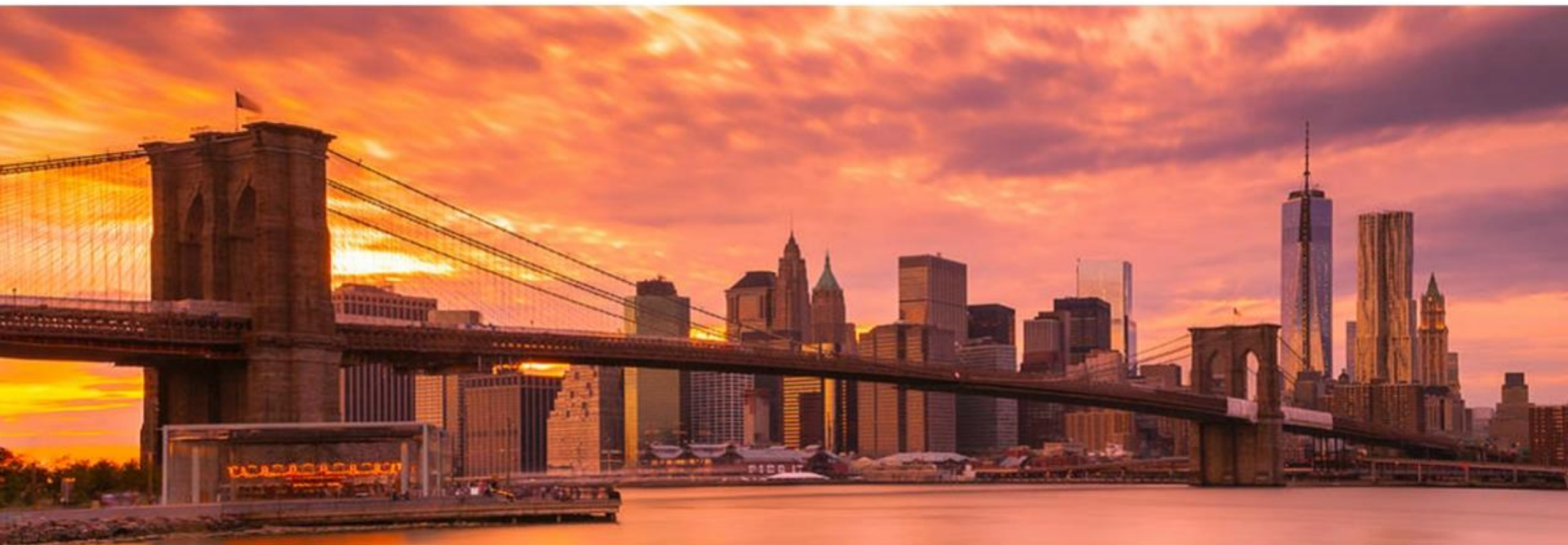


Indian J Surg. 2013 Jun;75(Suppl 1):266-8
Am Surg. 2012 Jul;78(7):E338-9

Take home points

- ① Consider *C. septicum* in the differential for unusual presentations in patients with active malignancies
肿瘤活跃期患者警惕腐败梭菌感染
- ② Look for underlying malignancy in patients presenting with *C. septicum* infection
腐败梭菌感染患者积极寻找合并恶性肿瘤依据
- ③ *C. septicum* infection has high mortality rates, may be marker of poor overall outcome
腐败梭菌感染患者死亡率高，预后不佳

THANK YOU



ACKNOWLEDGEMENTS

Howard Leaf, MD

Ellie Carmody, MD

Clostridium septicum

From Wikipedia, the free encyclopedia

革兰阳性，棒状，专性厌氧菌

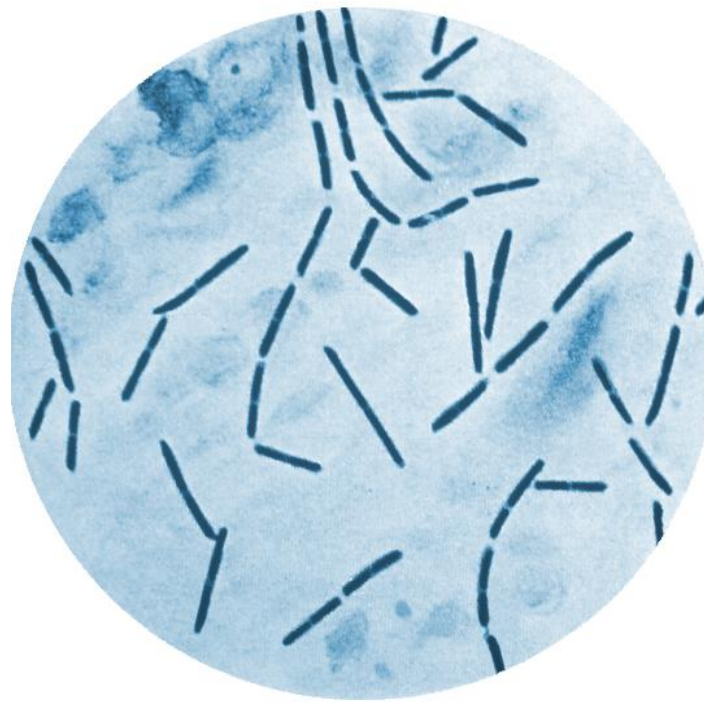
Clostridium septicum^[1] is a [gram positive](#), [spore forming](#), [obligate anaerobic](#) bacterium.

Clostridium septicum can cause [gas gangrene](#), but unlike other [Clostridium](#) species like *Clostridium perfringens*, no trauma is necessary at the site of the infection. It is thought that the infection is established by hematogenous spread from the gastrointestinal tract. Gas gangrene caused by *Clostridium septicum* is associated with [colorectal cancer](#) and other defects of the bowel.^[2]

可引起气性坏疽（非创伤性）/胃肠道经血源播散/结直肠癌相关

Clostridium septicum causes [myonecrosis](#) through the release of [exotoxins](#) such as the alpha toxin, lethal toxin, and hemolytic toxin^[3]

释放外毒素导致组织坏死



Clostridium septicum



Scientific classification

Domain:	Bacteria
Division:	Firmicutes
Class:	Clostridia
Order:	Clostridiales
Family:	Clostridiaceae
Genus:	<i>Clostridium</i>
Species:	<i>C. septicum</i>

Binomial name

Clostridium septicum

Clostridium septicum sepsis and colorectal cancer - a reminder

Nazzia N Mirza, Jonathon M McCloud, and Mark J Cheetham

Spontaneous clostridium septicum infections are rare and are associated with a high mortality. Association of clostridium infection with colorectal malignancies have been previously reported and most cases are described in tumours of the ascending colon. We report our experience of clostridium septicum infection in the presence of tumour perforation in a series of two patients as a reminder of its association with sepsis in the presence of colorectal malignancy.

Clostridium septicum and malignancy

Simon S. B. Chew, David Z. Lubowski

First published: 20 December 2001 | <https://doi.org/10.1046/j.1445-1433.2001.02231.x> | Cited by: 34

Conclusions: *Clostridium septicum* infections have a strong association with malignancy. When this infection occurs without an obvious underlying aetiology there should be a high index of suspicion about associated malignancy. In the absence of haematological malignancy a colonoscopy is warranted. Early diagnosis and aggressive treatment is essential in order to improve prognosis.



● 988. Successful Treatment of Serious *Clostridium septicum* Infections

• **Session:** Poster Abstract Session: Clinical Studies of Bacterial Infection

Saturday, October 22, 2011

Room: Poster Hall B1

Background: The Gram-positive spore-forming anaerobe *Clostridium septicum* is a rare cause of fulminant infections including sepsis, myonecrosis, and aortitis. Reported risk factors include bowel and hematologic malignancies, diabetes mellitus, and penetrating wounds. Most reports describe one to 3 new cases and mortality rates approaching 70%. We present 6 patients with *C. septicum* infection, including 5 diagnosed antemortem and successfully treated.

Methods: Retrospective chart review for patients from whom *C. septicum* was isolated from blood or sterile body sites between 1/2006 – 12/2010.

Results: All *C. septicum* infections occurred in elderly (mean age = 78 y, range 68 to 91 y), debilitated patients. Underlying diseases included hypertension (5 cases) with overt coronary artery disease (2 cases) or peripheral vascular disease (1 case); malignancy, including lymphoma and past renal cancer (1 case) and colon cancer (1 diagnosed and 1 presumptive case); nephrolithiasis (1 case); and Alzheimer's dementia (1 case). No patients had diabetes mellitus. *C. septicum* was isolated from the blood in 5 cases, including one post-mortem, and from aortic tissue from 1 patient with clinical periaortitis complicated by a pseudoaneurysm. Localized infection was present in one patient with soft tissue infection and later osteomyelitis complicating a lower extremity ulcer, and as pneumonia in the patient diagnosed at autopsy. Common symptoms were fever (5/6), gastrointestinal complaints (4/6) and fatigue (3/6). Except for one patient who expired before diagnosis and treatment, all patients with bacteremia received at least 10 d of antibiotics including combinations of B-lactam/B-lactamase inhibitor, clindamycin, and metronidazole. The patient with periaortitis was treated with 8 wks of antibiotics and underwent axillary bi-femoral bypass graft. All treated patients were alive at last follow-up (range 14 d to 177 d after diagnosis).