

Courtesy of American College of Surgeons Division of Education
Clinical Congress 2015

Cases and Discussion

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SCHOOL OF MEDICINE

Disclosure:

Douglas Schuerer, M.D.

No relevant financial interests to disclose.

These cases are meant to assist in discussion, please feel free to interject your thoughts or cases.

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Case 1

- 54 y/o M post-op from total knee replacement, h/o diabetes
- Prophylactic abx for knee surgery: Cefazolin
- Was this an adequate choice?
- Does it depend on the hospital antibiogram?

- Now Post-op day #5
- Severe pain entire RLE, HR 120, SBP 90/50
- WBC 20K, Na 130, Cr 2.5

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Joint infection



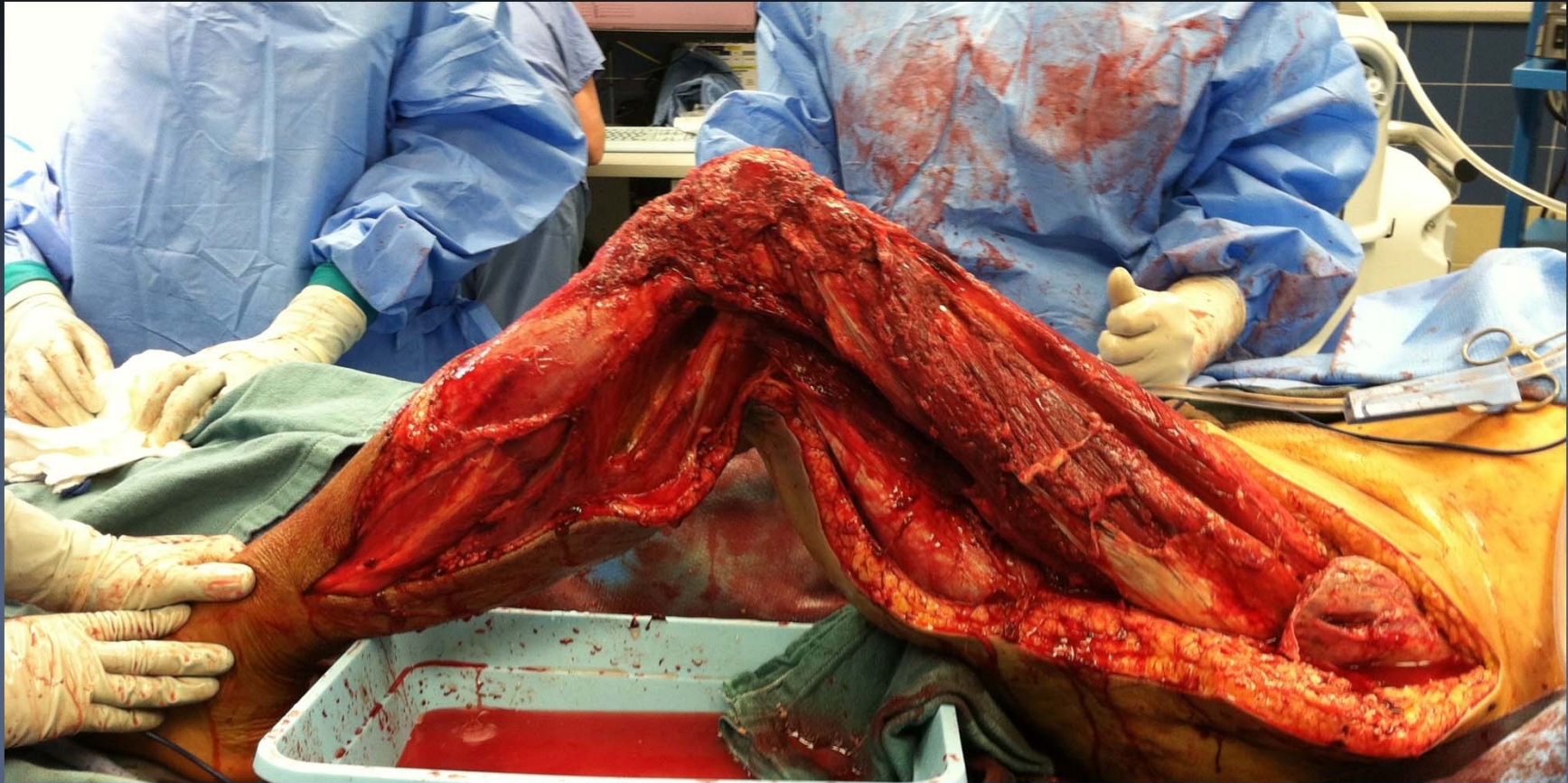
What now?

- What antibiotics should be started at this time?
- Should blood cultures be obtained before starting antibiotics?
- Surgical timing and approach?

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After Debridement



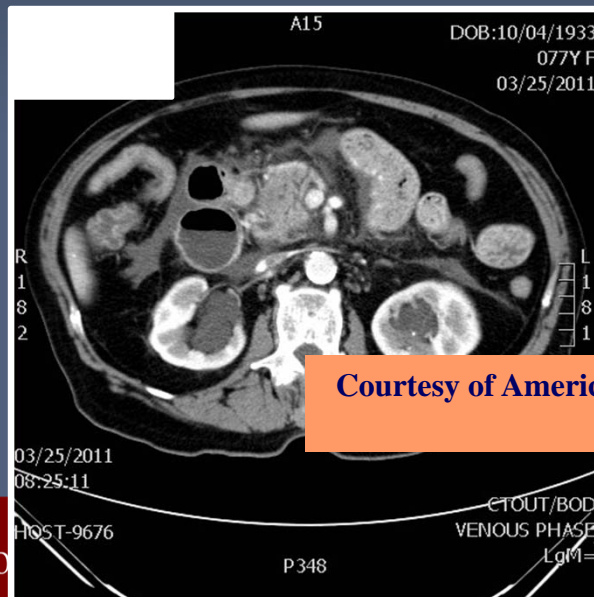
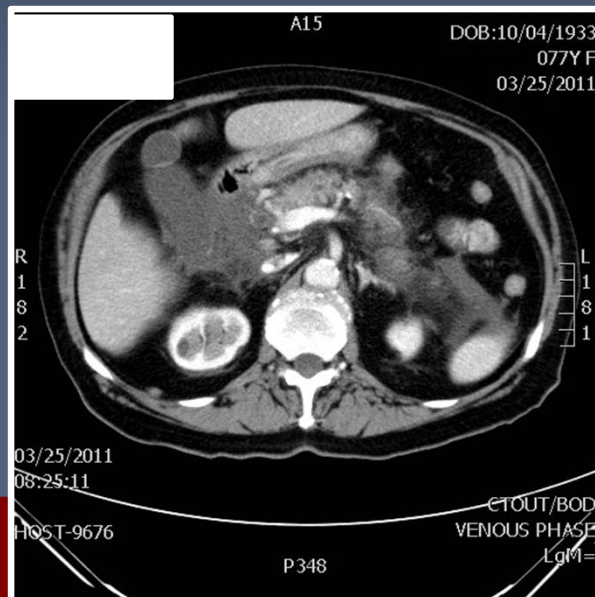
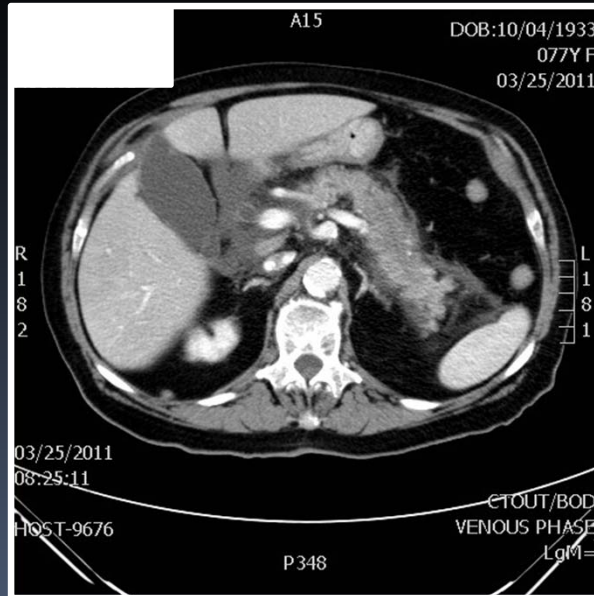
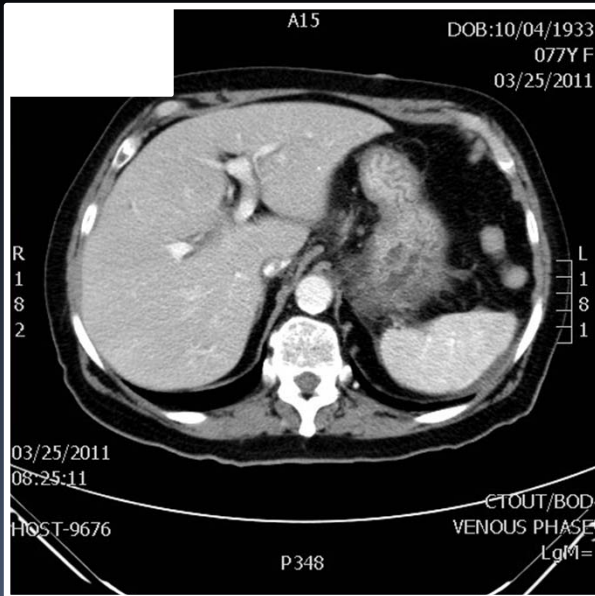
Cultures MRSA

Next Direction

- Change or tailor antibiotics?
- IGG, HBOT?
- What type of dressing?
- New Vacs with irrigation?

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77 yo female with necrotizing pancreatitis:



- Admitted to referring hospital
- SIRS criteria, stable hemodynamics
- Initiated Doripenem prior to transfer
- Transferred to tertiary hospital - day 5

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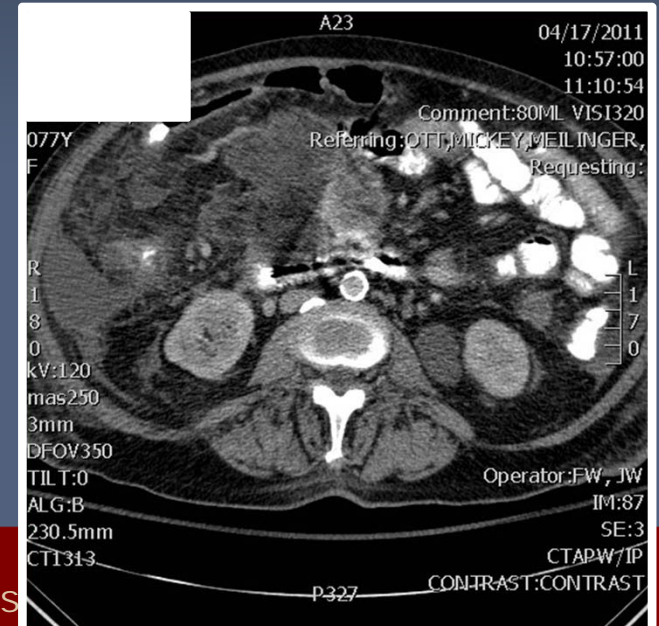
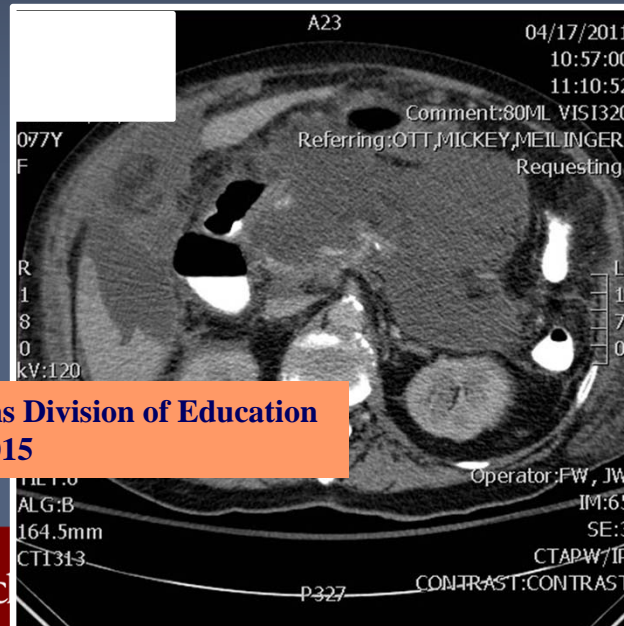
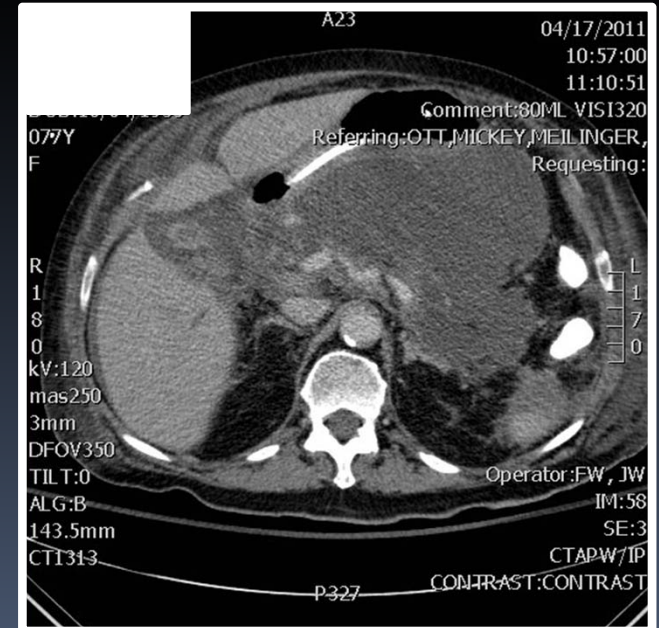
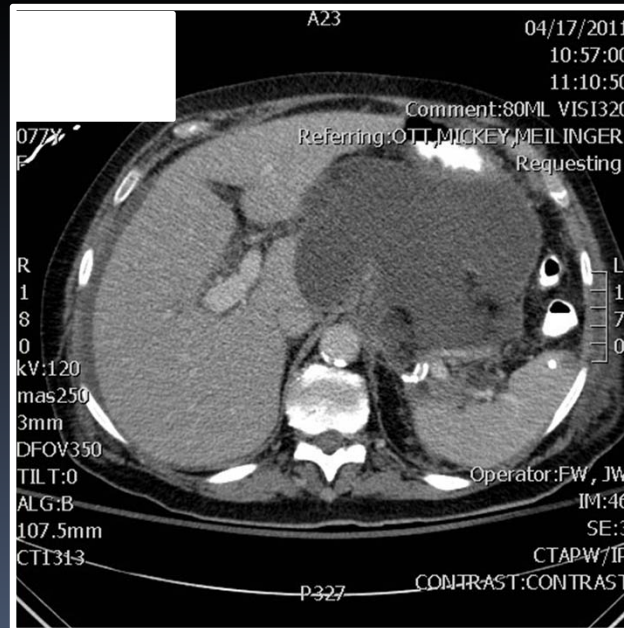
Would you do different?

- Is antibiotic correct or needed?
- How long?
- Anything else to do at this time?

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77 yo female with necrotizing pancreatitis:

- Doripenem continued for ~1 week
- persistent SIRS
- normal organ function and hemodynamics
- tolerating enteral feeding
- repeat CT scan on day 22



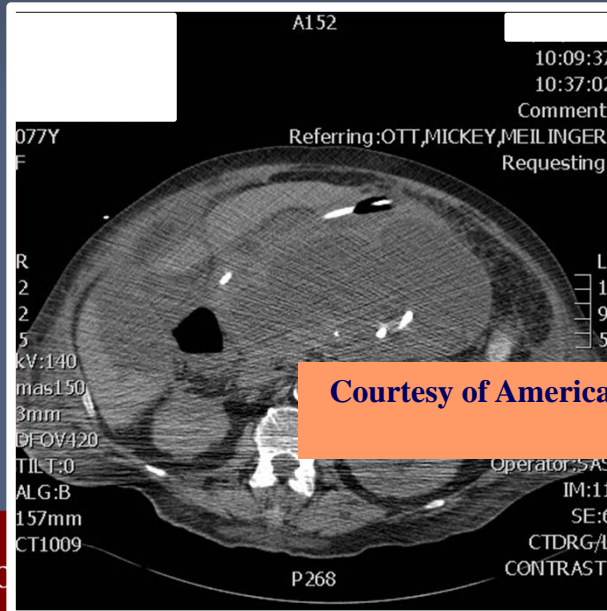
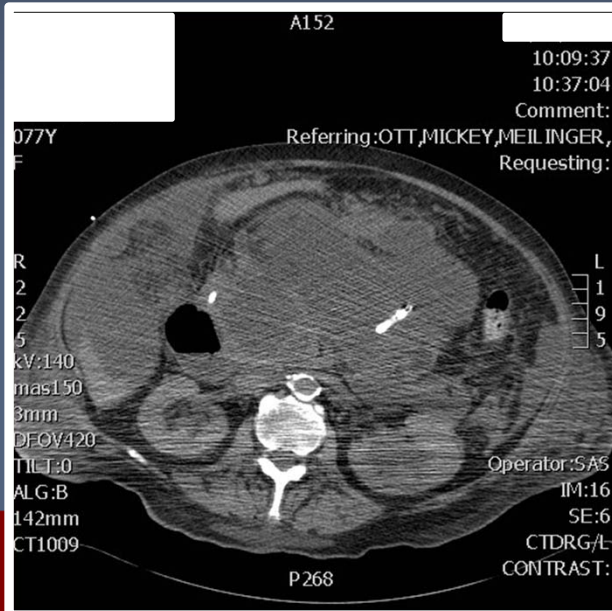
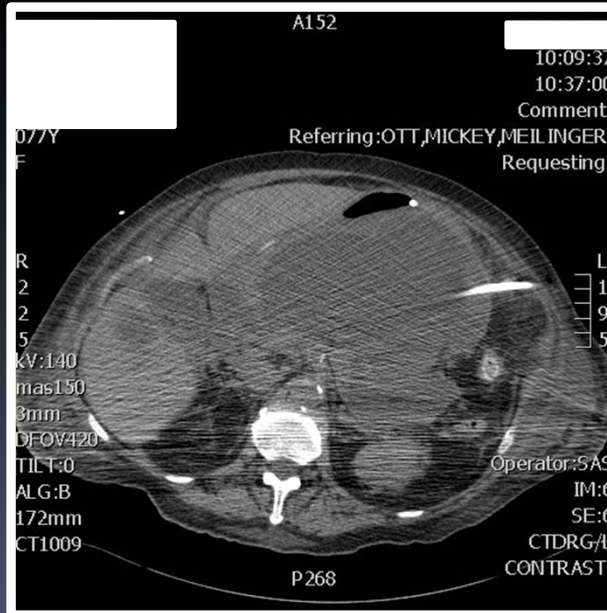
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What would you do now?

- Cystgastrectomy?
- Perc drain?
- Operation?

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77 yo female with necrotizing pancreatitis:



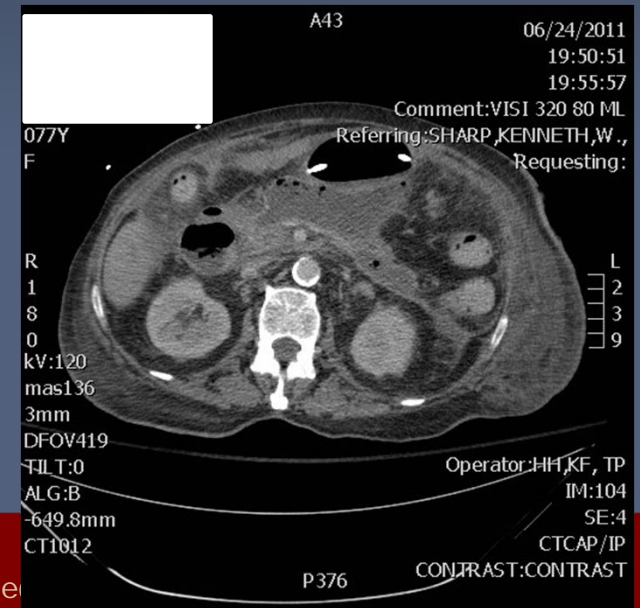
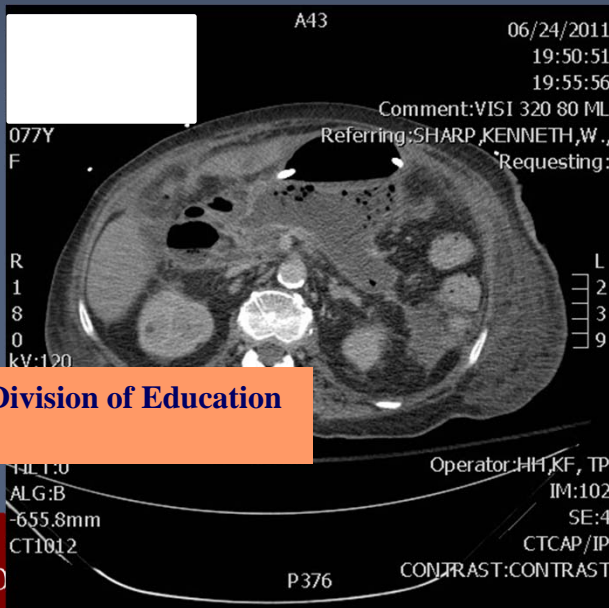
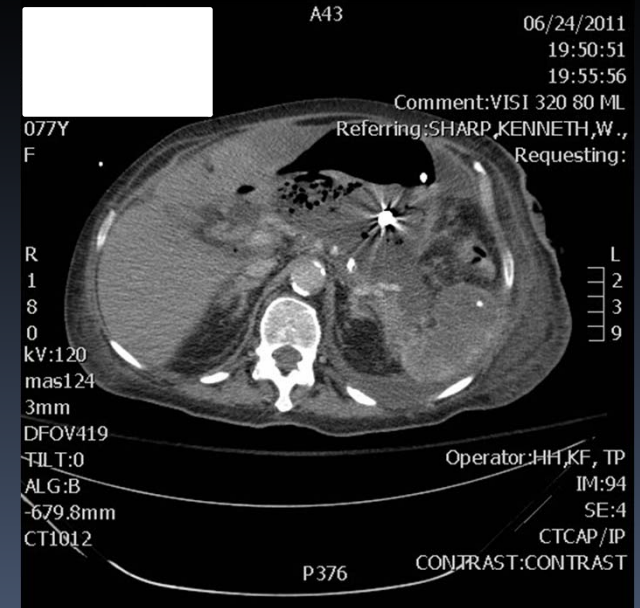
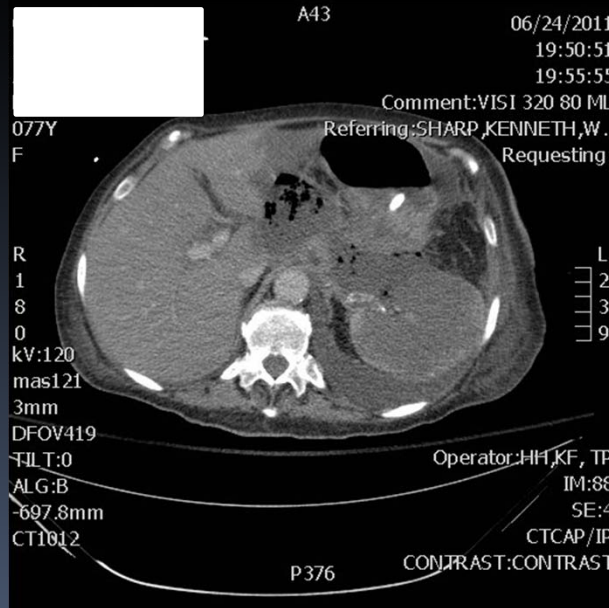
- Doripenem restarted
- increased fever and WBC
- CT guided aspirate
 - E. faecalis
 - Staph simulans
- Percutaneous drainage
- Continued Doripenem + Vancomycin

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77 yo female with necrotizing pancreatitis:

Over the next ~ 2 months

- Embolization of splenic artery pseudo-aneurysm
- Repeated tube exchanges
- 46 days of antibiotic therapy
 - Doripenem
 - Ertapenem
 - Zosyn
 - Levoquin
 - Vancomycin
 - Daptomycin

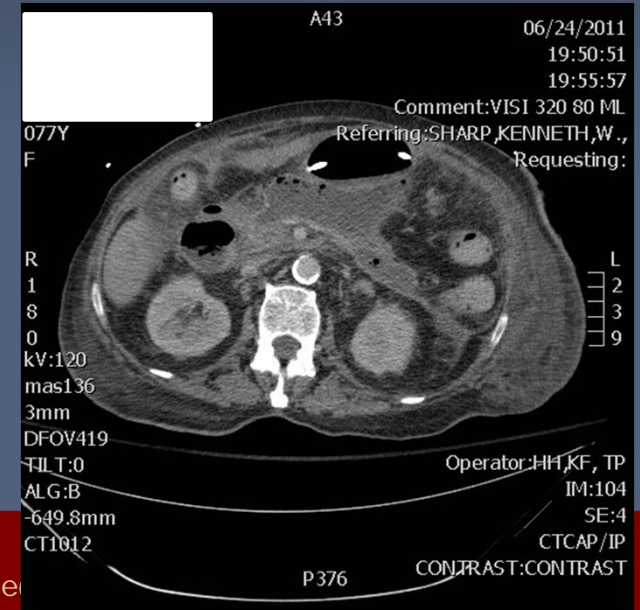
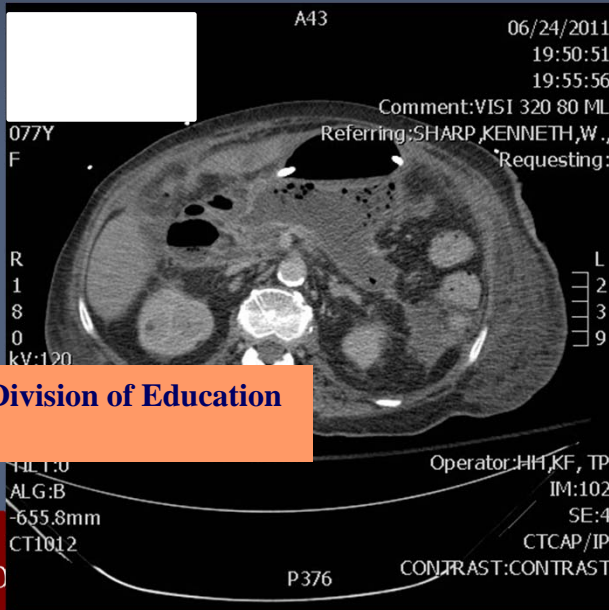
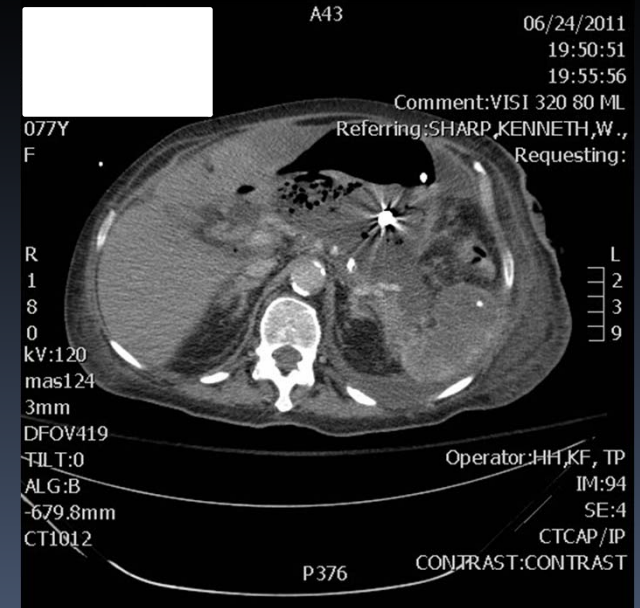
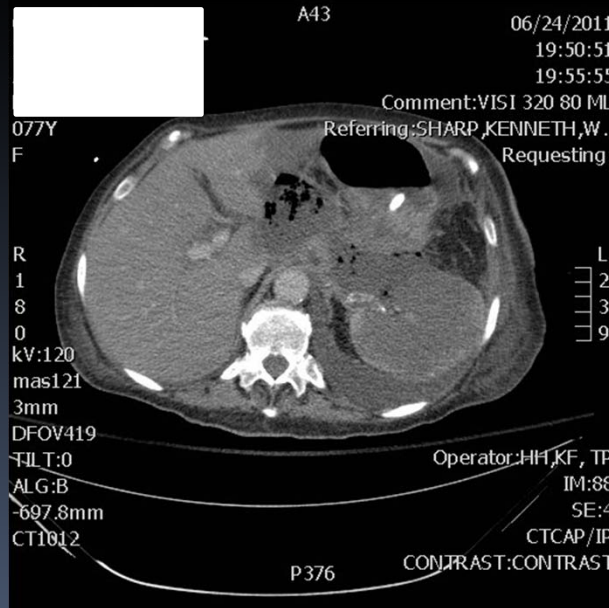


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77 yo female with necrotizing pancreatitis:

- Cyst cultures that grew

- *E. faecalis* and MR
- VRE – abdominal fluid and blood (X 3 over 5 days)
- SE
- *E. faecalis* and *Eikenella corrodens*
- *E. coli* (R-zosyn) and Gm + rods
- MRSA, mixed anaerobes, *Candida parapsilosis*



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What are the opportunities for improvement?

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Core Concepts

1. **Cannot sterilize living creatures in contact with the environment!**
2. **Cannot sterilize or keep sterile, anything connected to the environment!**
3. **Antibiotics cannot be effective if unable to achieve adequate levels!**
4. **Neutrophils cannot effectively kill bacteria unless they phagocytize or trap them**
 - **Neutrophils will continue to degranulate in attempt to do so!**

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Case Presentation:

- 29 yo male driver in high speed MVA
- Partial ejection and pinned in drainage ditch from a chicken farm
- Injuries:
 - Open distal femur fracture with popliteal artery injury and soft tissue injury
 - Received broad spectrum antibiotic coverage
- OR:
 - irrigation, debridement
 - External fixator
 - Popliteal artery reconstruction
 - 4 compartment fasciotomy

Case 3

- Is this an adequate treatment so far?
- Should every dirty wound be washed out with the magical 3 liters of fluid?
- Antibiotics in the fluid?

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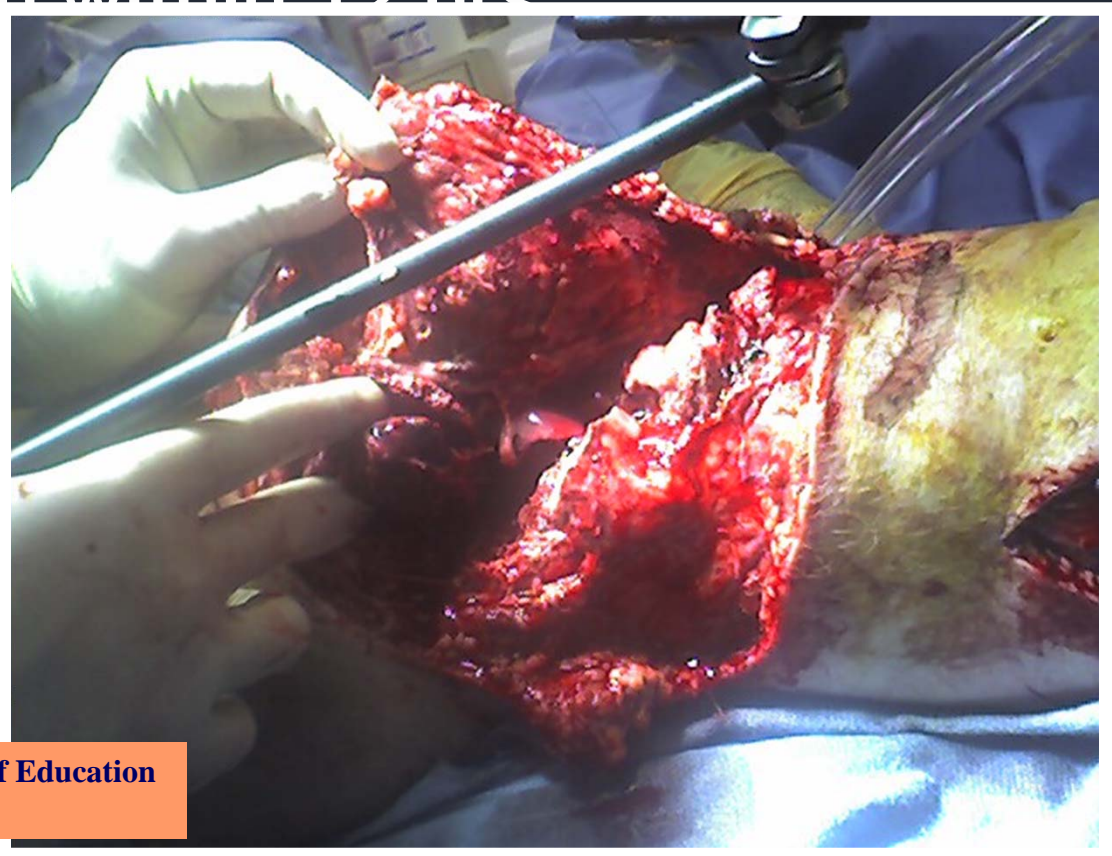
29 yo male driver in high speed MVA:

Hospital course:

- Developed fever, tachycardia, worsening pulmonary function within 12 hrs
- Taken urgently to OR for re-exploration

Findings:

- Foul smelling fluid
- Necrotizing infection



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29 yo male driver in high speed MVA:

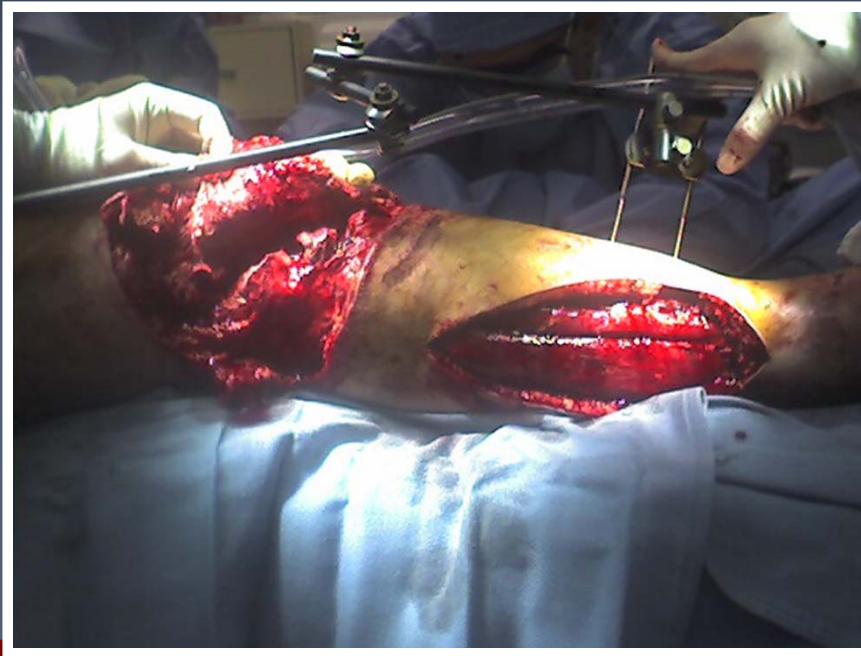
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Procedures:

- debridement and irrigation
- Sulfamylon packing

Gram Stain reveals:

- 4+ - gram negative bacilli
- What agent should you add?



29 yo male driver in high speed

MVA:

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Added IV high dose minocycline

- Antiribosomal agent active against Gm negative bacteria

Cultures reveal:

- *Aeromonas hydrophila*
- Others: Enterobacter, Citrobacter, Klebsiella

Subsequent course:

- High AKA the following day
- Skin graft to the stump after recovery

Case 4

- 37 y.o with HO AIDS, ESRD, and C. Diff
- He had been hospitalized for C. Diff for 3 weeks
- Sent home on oral vancomycin/metronidazole, but he stopped taking them when he felt better.
- Last CD4 count was 9.
- Presents to the ED with abdominal pain

- Should he have been on that combination?

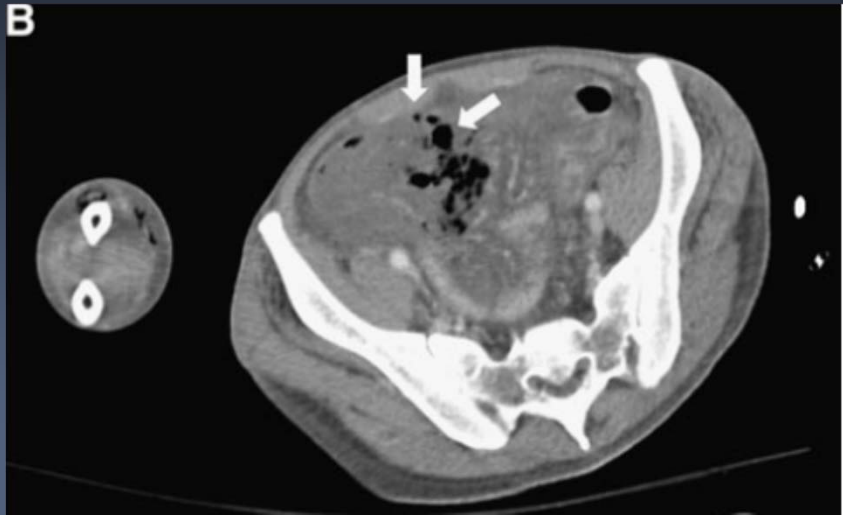
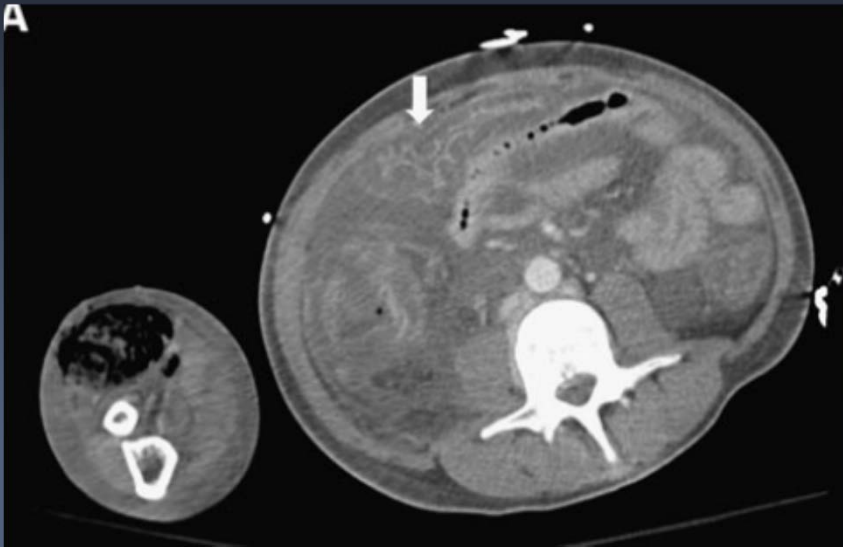
- How long to treat in such an immunocompromised patient?

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Case 4

- What could be causing this?
- WBC 1.0, HR 124, BP 165/83, Lactic acid 1.6
- Abdomen was diffusely tender, right arm swollen.
- What to do?
- Antibiotics and resuscitation started. 1 hour later exam revealed much worse disease on the arm with bullae.
- Now what to do?

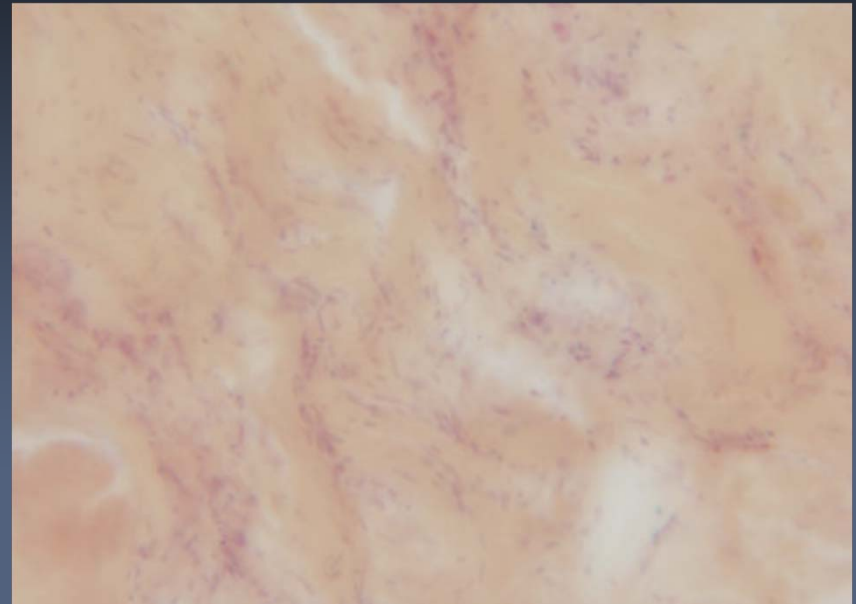
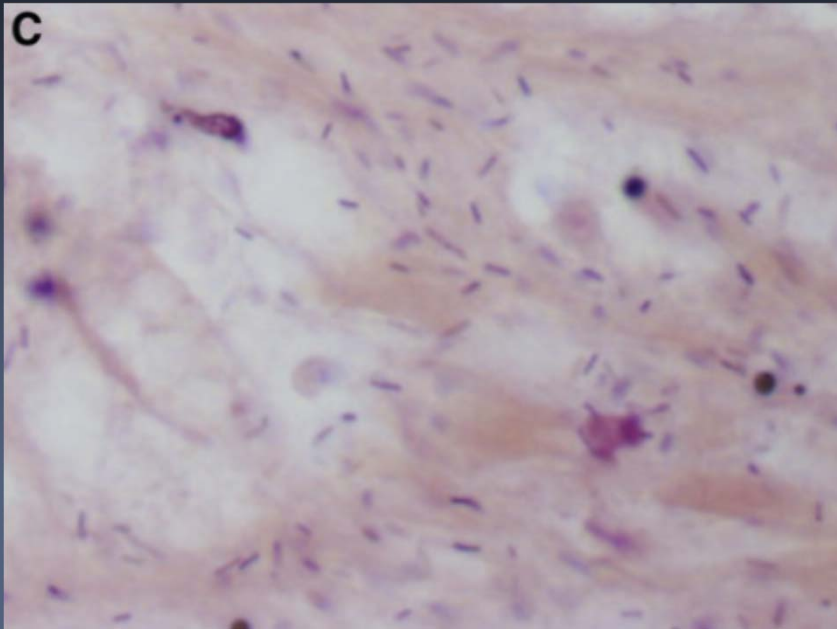
Case 4



Case 4

- Taken to the OR
 - Total adnominal colectomy
 - Right arm high above the elbow amputation
- Blood cultures grew C. septicum
- Intraoperative cultures showed C Septicum
- Gram stains of pathologic tissue revealed:

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