

# SPIRAL DOWN A RABBIT HOLE

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CASE#2

05/28/19

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# 82 Y.O. MALE

## PRESENTS ON FEBRUARY 27<sup>TH</sup>

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- CC: Found on floor by bed
- PMHX
  - DVT (on anticoagulation)
  - Crohn's disease (not on therapy)
  - Anxiety
  - Dementia with lapses in memory
- PSHX
  - Cholecystectomy

# HISTORY OF PRESENT ILLNESS

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- He has worsening lapses in memory
- Sundowns more often
- Has decreased PO intake
- Two weeks ago had viral illness, with associated nausea and vomiting
- Has ongoing diarrhea for >4 weeks as per daughter

# ADDITIONAL HISTORY

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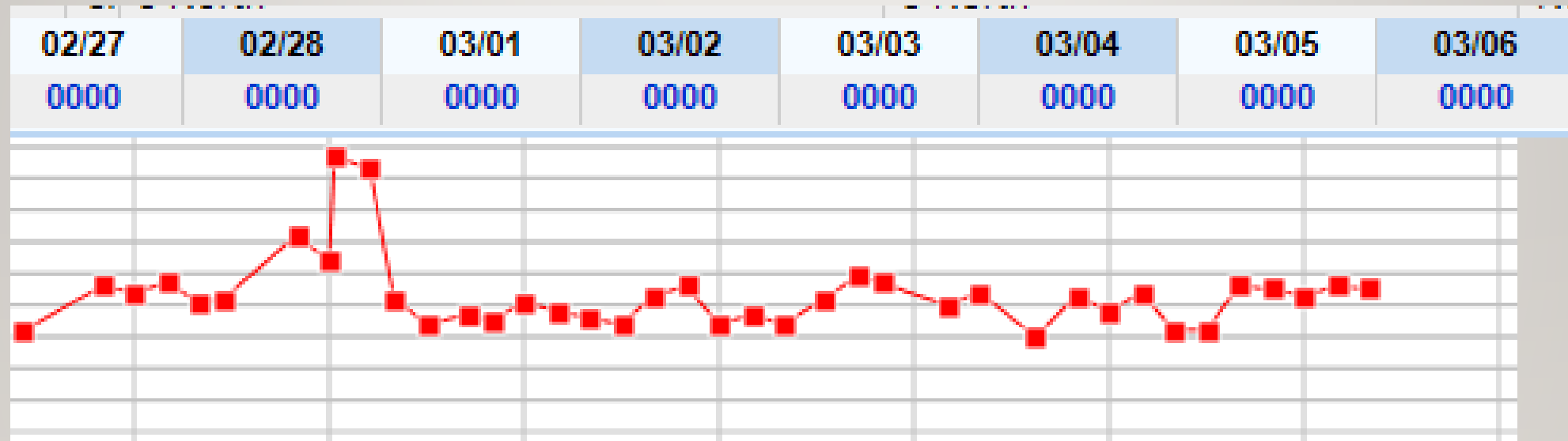
- Social History
  - Non-smoker, no ETOH, no drug use
  - Used to work for electrical company
  - Lives on his own
  - Has dog x15 years that he keeps mostly indoors
  - Leads mostly sedentary lifestyle, and does not leave his home much
  - Does not engage in any outdoor activities

# VITALS AND PHYSICAL EXAM

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- BP: 165/78, HR 74, Temp 97.2 °F, RR 16, SpO2 99 %
- Constitutional: chronically ill appearing male
- Pulmonary: CTA, no respiratory distress; tenderness on R lower ribs
- Abdomen: soft, non-distended, no guarding, no rebound; non-tender
- Neuro: oriented x1
- Skin: cool feet, chronic as per family

# FEVER DURING FIRST HOSPITALIZATION



- On 2/28 has fever to 102.7
- Blood cultures obtained at that time

# HOSPITAL COURSE: FEBRUARY 27<sup>TH</sup> TO MARCH 6<sup>TH</sup>

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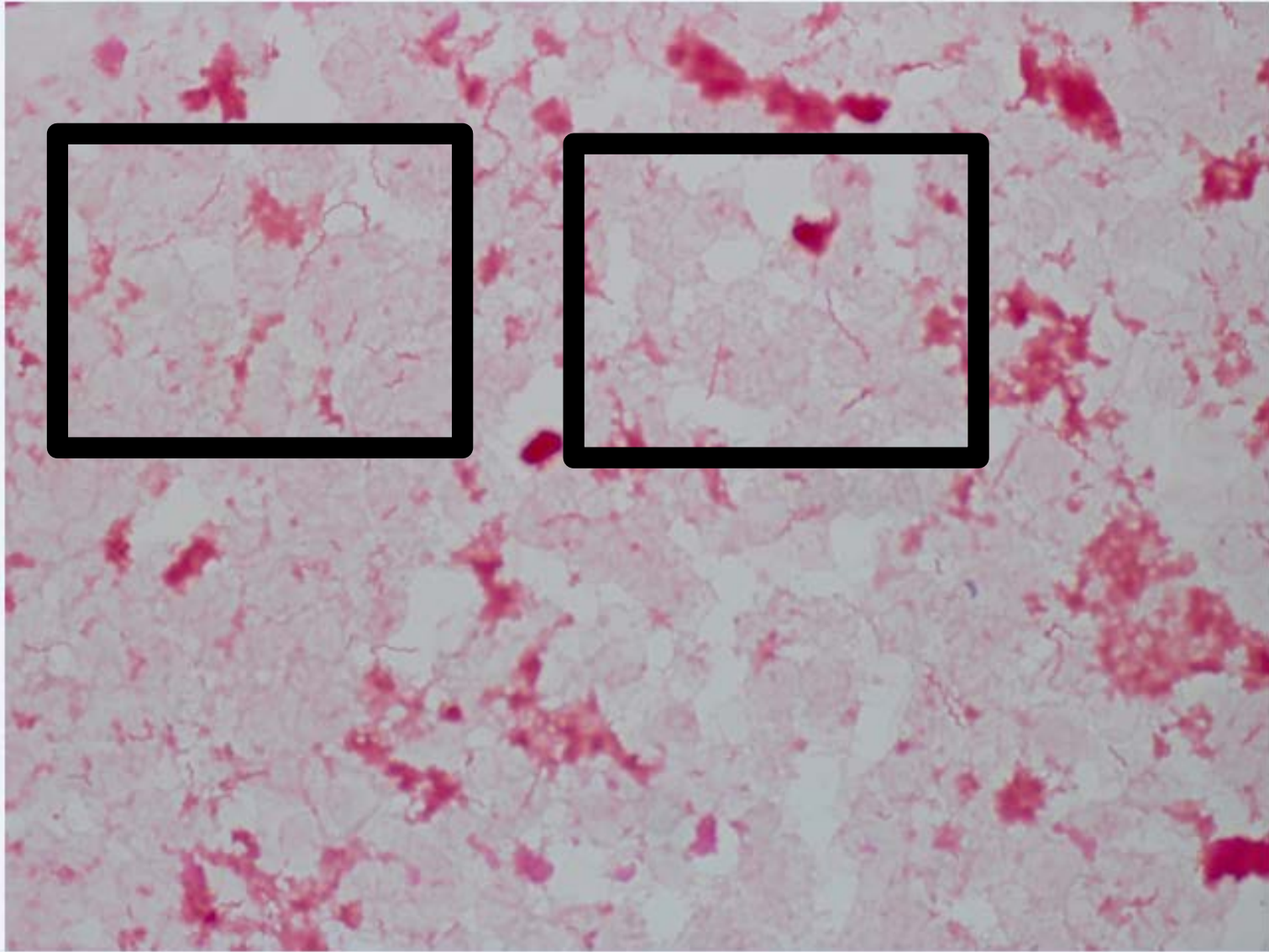
- Has vomiting episodes with ongoing diarrhea
- Continues to sundown
- CXR read as L pleural effusion and infiltrates
  - Started on vancomycin and cefepime for “aspiration pneumonitis” secondary to viral gastroenteritis x2 days
  - Then switched to amoxicillin-clavulanate x4 more days

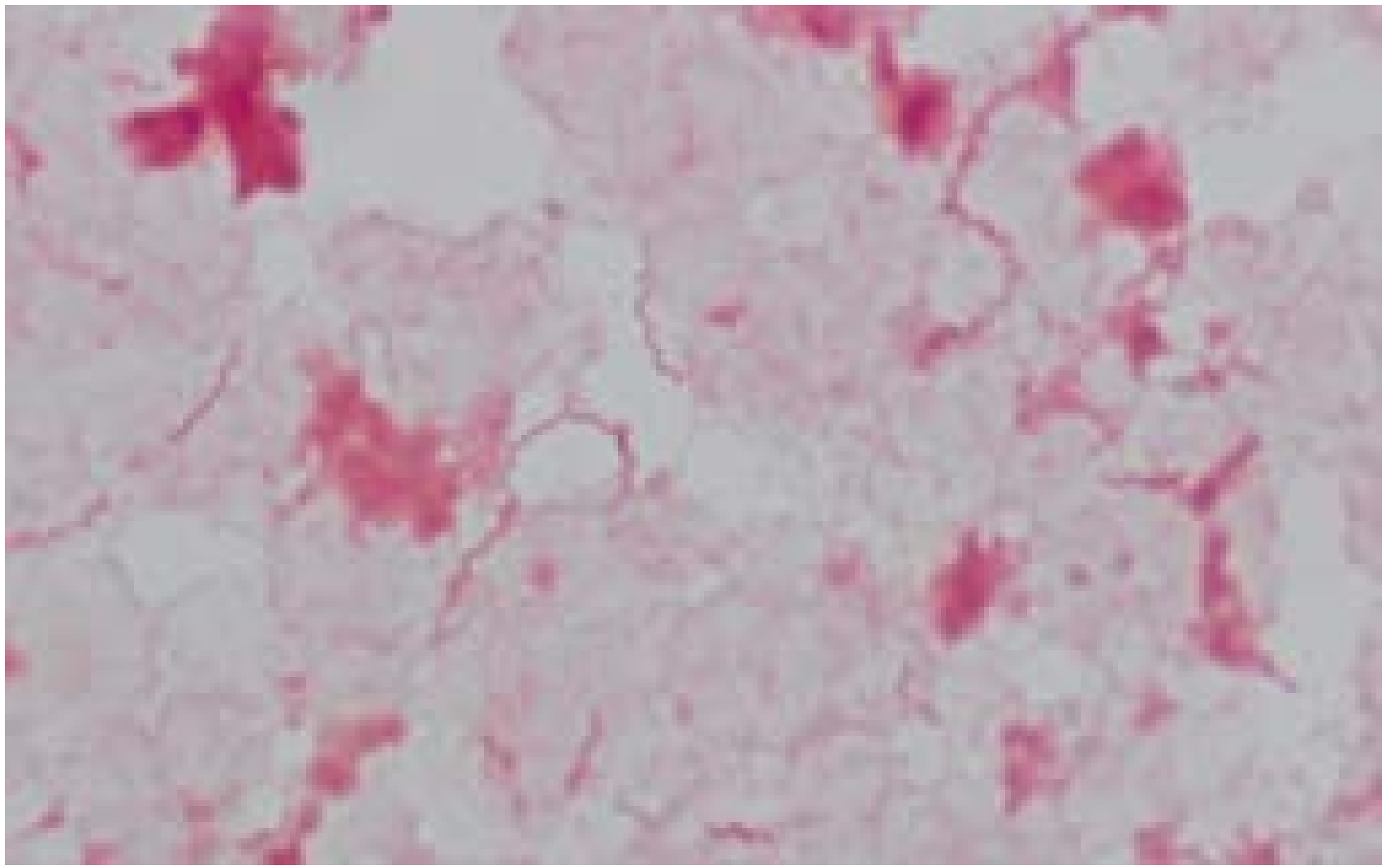
# CALL BACK

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- Gets discharged to rehab facility on 3/6
- On 3/7 hospitalist is notified that original blood culture from 2/28 is positive







## IN SUMMARY:

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- 82M, with ongoing diarrhea, nausea, and vomiting who initially presents on February 27<sup>th</sup> spikes a fever on 2/28, with blood cultures obtained at that time, discharge on March 6<sup>th</sup>, but called back for a GN spiral bacteria

## 2<sup>ND</sup> HOSPITALIZATION: MARCH 7<sup>TH</sup>

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- **February 28<sup>th</sup>** blood cultures are positive for a **GN spiral shaped bacteria**
  - Grew out of **anaerobic** bottle, and **flagged** by micro **on day #3 of incubation**
  - Culture broth was plated on CDC agar under anaerobic conditions and after 3 days it started showing visible growth, but was unable to be subcultured
  - **Team notified on day 6**

# ADDITIONAL TESTS

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- Repeat blood cultures from 3/1 have finalized with no growth
- FTA: negative
- RPR: negative
- HIV 5<sup>th</sup> generation: negative
- Liver profile: AST 21 ALT 25 Alk phos 83 Tbili 0.2
- Repeat blood cultures on 3/7

# HOSPITAL COURSE

## MARCH 7<sup>TH</sup> TO MARCH 13

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- Blood cultures from 3/7 remain negative
- He is started on Doxycycline on March 7th
- He continues to sundown and have diarrhea
  - Stool cultures are sent out and they are negative
- On day#3 noted to have SBO, surgery consulted, and reduced a hernia
- After 4 days on doxycycline develops a maculopapular rash



# HOSPITAL COURSE CONTINUED

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- Given his rash, switched to amp-sulbactam for another 6 days
- Clinically improved back to “baseline”
- Discharged on 3/18



F92566 Coll: 02/28/2019 18:20

Rec: 03/15/2019 10:25

Phys: UNKNOWN, PROVIDER  
[Reference Range]

Bacteria Sequencing  
Specimen Description

Blood

Pure Culture

No special requests

Special Requests  
Culture



Campylobacter jejuni or Campylobacter coli  
- This result is a Washington state  
Notifiable condition. Contact public  
health authorities in accordance with WAC  
246-101.

## 16S RIBOSOMAL RNA PCR

- Blood culture from 2/28
- 16s rRNA sent out on 3/7 to University of Washington
- Received on 3/15 there
- Results on 03/20

# SPIRAL AND OTHER CURVED BACTERIA


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- 1. Treponema
  - *T. pallidum pallidum* (syphilis); *T. pallidum pertenue* (yaws)
- 2. Borrelia
  - *B. burgdorferi* (Lyme)
- 3. *Spirillum minus* (rat bite fever)
- 4. Brachyspira
  - *Brachyspira pilosicoli* (intestinal spirocheatosis); *Brachyspira aalborgi* (intestinal spirocheatosis)



# SPIRAL AND OTHER CURVED BACTERIA

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- 5. *Leptospira*
  - 6. *Vibrio*
  - 7. *Anaerobiospirillum succiniciproducens*
  - 8. *Helicobacter*
  - 9. *Campylobacter jejuni*
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# CAMPYLOBACTER=“CURVED ROD”

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- Leading cause of enterocolitis in U.S. and worldwide
  - 2-20 million cases annually
- Usually self limited gastroenteritis
- Fastidious
- microaerophilic
- Bacteremia in 1% of cases
  - First isolated in 1971

# CAMPYLOBACTER BACTEREMIA

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- **Isolation protocols**
- **Underestimation**
  - Unknown sensitivity of automated systems for detection
  - Ie *C. pyloria*, failed to grow in some blood culture systems
- **Lengthy detection**
  - median growth rate **> 5 days** for many isolates

# CAMPYLOBACTER BACTEREMIA

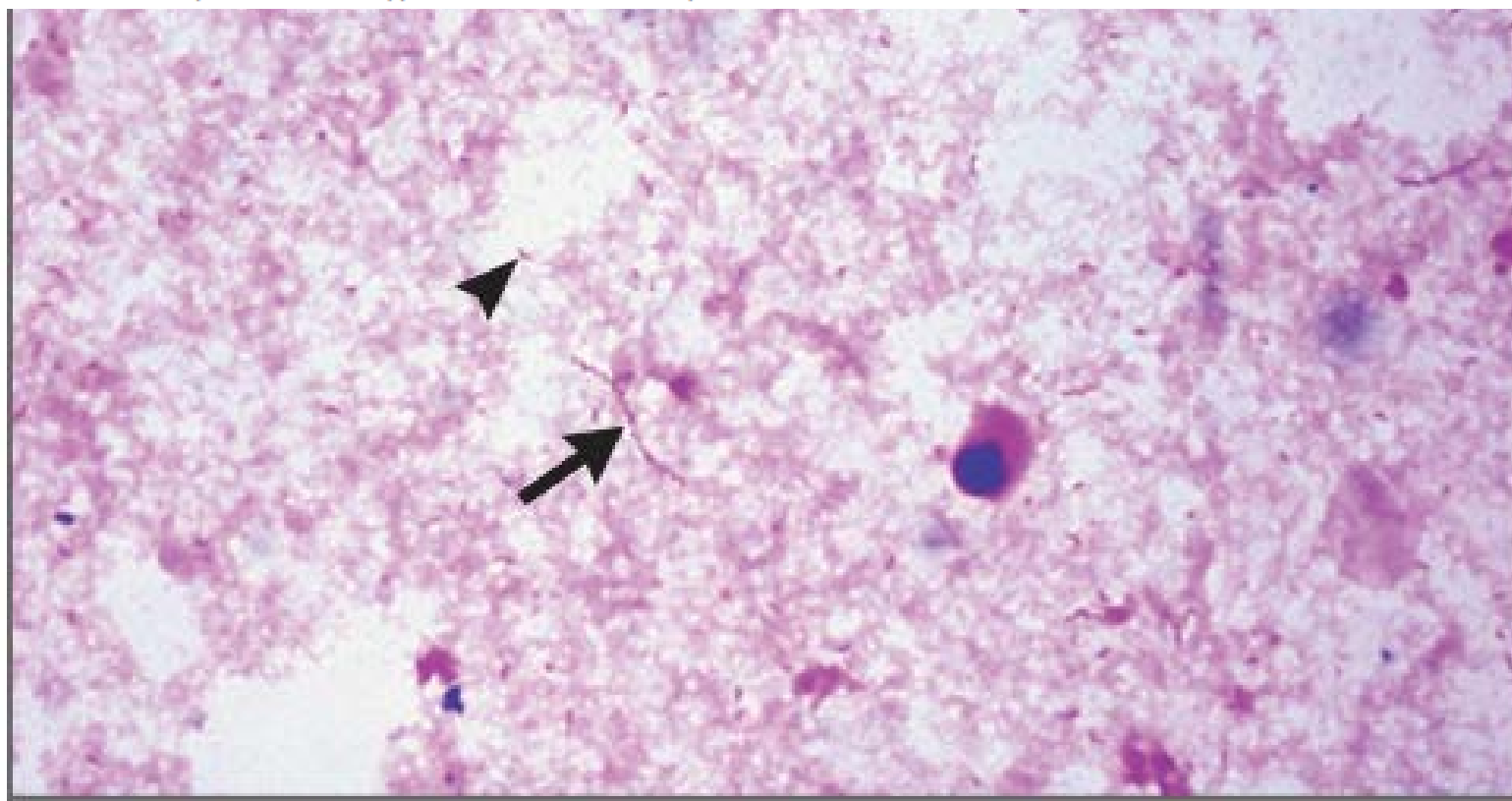
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## Molecular diagnostics-PCR

- Valuable for determination of identities of bacterial isolates
- **reliable** for specific identification of *Campylobacter* species
  - Sequence analyses were performed by using almost 94% of the complete 16S rRNA genes of 135 phenotypically characterized *Campylobacter* strains

# Case 30-2017 — A 65-Year-Old Woman with Altered Mental Status, Bacteremia, and Acute Liver Failure

Roby P. Bhattacharyya, M.D., Ph.D., Efren J. Flores, M.D., and Marwan M. Azar, M.D.



# REFERENCES

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- Louwen R, van Baarlen P, van Vliet AH, van Belkum A, Hays JP, Endtz HP. Campylobacter bacteremia: a rare and under-reported event?. *Eur J Microbiol Immunol (Bp)*. 2012;2(1):76–87. doi:10.1556/EuJMI.2.2012.1.11