

# A fatal case of septic shock caused by *Acinetobacter* bacteremia acquired from a platelet transfusion

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## Learning Objectives

- Diagnose common transfusion reactions
- Recognize when empiric antibiotics are indicated in the setting of a transfusion reaction

## Case Description

### HPI

- A 67 year old male was admitted for medical optimization prior to a transarterial chemoembolization procedure

### Past Medical History

- Type II Diabetes
- Alcoholic cirrhosis
- Hepatocellular Carcinoma

### Past Surgical History

- None

### Medications

- Albuterol, furosemide, pioglitazone, spironolactone

### Physical Exam

- BP 131/94, HR 77, RR 16, Temp 36.9 °C, O2 95% on room air
- Head to toe exam unremarkable

### Admission Labs

- WBC 3.3, Hgb 14.8, **Plt 27**
- Na 137, K 4.0, Cl 106, CO2 23, BUN 14, Cr 0.9, glucose 213
- AST 106, ALT 45, AP 186, Bili 1.5, Albumin 3.2, TP 5.0

Table 1. Clinical characteristics of transfusion reactions

Reaction Type	Fever	Hypotension	Abnormal CXR	Labs	Clinical Clues
Anaphylactic	---	+++	---		Wheezing, angioedema, hives
TACO <sup>a</sup>	---	---	+++	↑ BNP	History of heart failure
TRALI <sup>b</sup>	+++	---	+++		Severe respiratory distress
AHTR <sup>c</sup>	+++	+++	---	Hemolysis, DIC, +DAT	Back/flank pain, ABO mismatch
FNHTR <sup>d</sup>	+++	---	---		Otherwise asymptomatic
Sepsis	+++	+++	---	+ blood cultures	Platelet transfusion

\*TACO -transfusion associated cardiac overload; <sup>b</sup>TRALI - transfusion related acute lung injury; <sup>c</sup>AHTR - acute hemolytic transfusion reaction; <sup>d</sup>FNHTR – febrile non-hemolytic transfusion reaction

## Transfusion Reaction

- Two units of platelets were ordered.
- Shortly after initiation of the first transfusion, the patient was noted to have a temperature of 100.8°F. The transfusion was stopped and acetaminophen and diphenhydramine were given.
- One hour later, the patient developed tachycardia, tachypnea, hypotension and was found to have a temperature of 104.9°F.

### Labs

- Na 139, K 5.0, CO2 11, Cr 1.4
- Lactate 10.9
- Bilirubin total 6.8, direct 3.2, LDH 717
- INR >19, Fibrinogen undetectable

### Imaging

- Chest X-ray showed no acute cardiopulmonary abnormalities

## Subsequent Hospital Course

- Transferred to the ICU where he was aggressively fluid resuscitated and started on vasopressors. Broad spectrum antibiotics initiated with vancomycin and piperacillin/tazobactam
- Blood cultures grew gram variable coccobacilli. Identified as *Acinetobacter* species via PCR.
- Cultures obtained from the transfused platelets grew the same *Acinetobacter* species.
- Over the subsequent 24 hours, the patient's vasopressor requirements continued to rise. Given his clinical deterioration, aggressive care was withdrawn, and he expired shortly after.

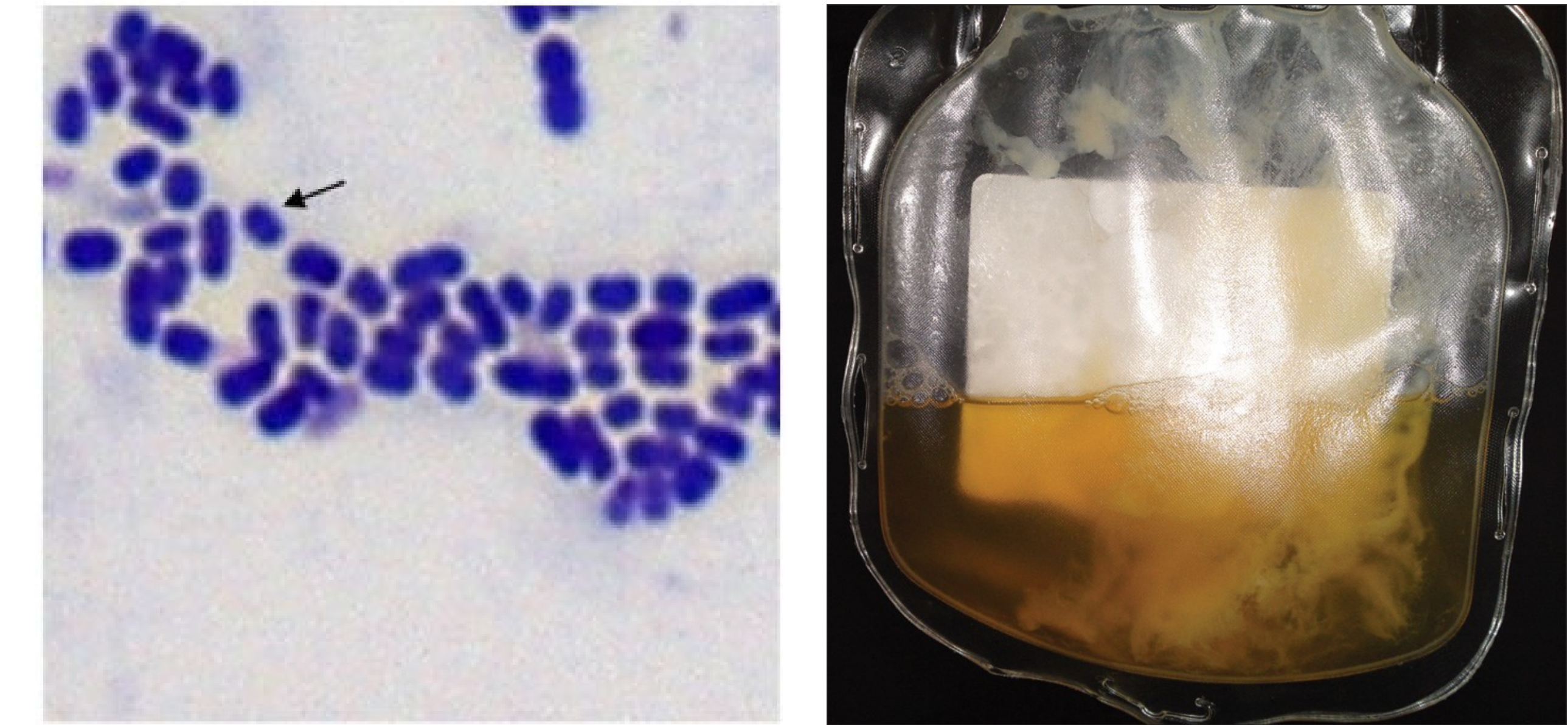


Figure 1. a) *Acinetobacter* species gram stain<sup>1</sup> b) Example of a contaminated bag of platelets<sup>2</sup>

## Discussion

- Septic transfusion reactions may be easily confused with other more types of transfusion reactions but are a life threatening complication that internists must be able to recognize.
- The risk of a transfusion related sepsis is highest with platelets due to their storage at room temperature.
- Approximately 1 in 5000 platelet units is contaminated with bacteria<sup>3</sup>
- Transfusion associated sepsis rate is estimated at 1 in 100,000 platelet transfusion<sup>3</sup>
- Death related to transfusion of contaminated platelets is rare with only 10 fatalities reported by the Food and Drug Administration from 2012 to 2015<sup>4</sup>
- Novel methods to detect or remove pathogens in blood products have been developed. Partially in response to this case, the Salt Lake City Veteran's Affairs hospital will soon be adopting the INTERCEPT model for pathogen reduction

## References

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