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INFECTIOUS DISEASES BOARD REVIEW MANUAL

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This peer-reviewed publication has been developed without involvement of or review by the American Board of Internal Medicine.



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Infectious Emergencies: Postsplenectomy Infection, Necrotizing Fasciitis, and Sepsis

Series Editor and Contributor:

Stephanie Nagy-Agren, MD

*Assistant Professor of Internal Medicine
University of Virginia School of Medicine
Charlottesville, VA
Chief, Division of Infectious Diseases
Veterans Affairs Medical Center
Salem, VA*

Table of Contents

Introduction	2
Postsplenectomy Infection	2
Necrotizing Fasciitis	5
Sepsis	8
References	12

Cover Illustration by Christine Schaar

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Infectious Emergencies: Postsplenectomy Infection, Necrotizing Fasciitis, and Sepsis

Stephanie Nagy-Agren, MD

INTRODUCTION

Medical emergencies involving infections place patients at high risk for morbidity and mortality while often presenting a diagnostic and therapeutic challenge to clinicians. Infectious emergencies that arise because of the anatomic site of involvement (eg, the central nervous system, eye, cardiovascular system, upper airway) can lead to rapid localized fulmination and a poor prognosis, if untreated. Bacteremia, sepsis, and toxin-mediated infections (eg, toxic shock syndrome) also constitute infectious emergencies requiring swift intervention with antibiotic therapy and other supportive management to avoid rapid multisystem dysfunction. Immunocompromised hosts are particularly susceptible to infections resulting in medical emergencies. Whether because of the inability of their immune systems to contain common microbes or because of infection by an unusual opportunistic organism that may be difficult to identify and treat, these patients frequently face potentially serious medical consequences. Moreover, atypical presentations and rare or resistant organisms can create a clinical course in which the infectious emergency goes unrecognized.^{1–3}

The infections listed in **Table 1** often lead to medical emergencies necessitating rapid intervention with parenteral antibiotics soon after their presentation. Although many of these disorders also require prompt subspecialty surgical evaluation for definitive diagnosis and treatment, intravenous administration of antibiotics should not be delayed for more than 1 to 2 hours, because such treatment can have life-saving or organ-sparing results. Urgent consultation with and intervention from specialists should be sought when indicated. For example, just as surgery is needed for both diagnosis and emergent therapeutic débridement of necrotizing soft-tissue infection, ophthalmologic consultation is indicated for periorbital and intraocular eye infections, neurosurgical consultation is needed for suspected

brain or epidural abscesses, and hand-specialist consultation is required for infections or bite wounds involving the hands or fingers.

Many of the topics subsumed by the heading of infectious emergencies have already been covered in the *Hospital Physician Infectious Diseases Board Review Manual* series and, therefore, will not be discussed again in this manual; information on diagnosis and management of neutropenic fever, infectious endocarditis, meningitis, and pneumonia can be found in past issues. This review will focus on 3 specific infectious diseases constituting medical emergencies—postsplenectomy infection, necrotizing fasciitis (NF), and sepsis—using a case-based approach to illustrate its points.

POSTSPLENECTOMY INFECTION

CASE 1 PRESENTATION

A 30-year-old man who had a splenectomy 2 years ago comes to the emergency department reporting fever (temperature to 38.6°C [101.5°F]), headache, vomiting, and 3 episodes of loose stools. He received appropriate vaccinations (ie, pneumococcal, meningococcal, and *Haemophilus influenzae* type b [Hib]) preoperatively. He has not taken any antibiotic prophylaxis since the splenectomy.

- **What is the most appropriate work-up and management of patient 1's current condition?**

OVERWHELMING POSTSPLENECTOMY INFECTION General Considerations

Overwhelming postsplenectomy infection (OPSI), also known as *postsplenectomy sepsis syndrome*, is considered a major medical emergency; septic death rates in patients who have undergone splenectomy are as much as 600 times greater than those in the general population.⁴ Fulminant, potentially life-threatening infection