Special Considerations for the Septic Patient Going to the Operating Room

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KEYWORDS

• Sepsis • Septic shock • Perioperative care • Intraoperative care • Intensive care
• Fluid resuscitation • Hemodynamic changes

KEY POINTS

- Perioperative care of the septic patient presents unique challenges for the nurse, such as requiring vigilant assessments and the ability to rapidly address challenging hemodynamic changes.
- Astute critical thinking skills allow the nurse to address the current patient presentation while anticipating potential life-threatening changes that the septic patient may experience.
- The septic patient going to the operating room will benefit from perioperative goal-directed nursing care.

INTRODUCTION

Perioperative care of the septic patient presents unique challenges for nursing care. Because the spectrum of sepsis ranges from early sepsis to septic shock, and because the patient's acuity can change suddenly, nursing care for the septic patient going to the operating room requires an astute eye and vigilant, continuous assessments.

Sepsis causes a dysregulated inflammatory response that leads to hypoperfusion of the body's organs that can progress to multiple organ failure and can ultimately lead to death.[1] Because sepsis is caused by infection, the septic patient may need surgery to eliminate the underlying cause or source of the infection. For example, a patient with an obstructive ureteral calculus may present in urosepsis and need a ureteral stent to relieve the obstruction and allow the kidney to drain and relieve hydronephrosis. Another example would be a patient presenting with an abdominal abscess or bowel perforation that needs surgical intervention to remove the infective source or debride

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the infected area. Understanding the physiology of sepsis is important for the nurse to anticipate the physiologic changes associated with the disorder and anticipate the needs of the patient. The nurse has to consider the continuum of sepsis from infection and bacteremia to septic shock when planning the nursing care of a patient going to surgery.[2] Because sepsis causes dysregulation of end-organ perfusion, prompt recognition of increasing severity of the disorder and implementing treatment are needed to prevent degeneration into septic shock.[3] For these reasons a septic patient who is going to surgery will need special considerations preoperative, intraoperative, and postoperative in order to decrease the morbidity and mortality associated with sepsis.

When a surgeon decides to take a septic patient to surgery, they must consider the risks that the stress of the operation will have on the patient as well as the exaggerated hemodynamic changes induced by the anesthetic against the benefits that the procedure will have on the patient. When a patient is critically ill and surgical intervention is necessary to correct the underlying focus of the sepsis, then the decision to go to surgery is often an emergent one because the risk of not doing the surgery outweighs the risks of doing the surgery.[4] Under normal circumstances surgery is planned and the patient is optimized medically. This means that blood pressure, heart rate, blood glucose levels, and other potential system disturbances are addressed and improved before surgery. When a patient is septic and needing surgical intervention emergently, there is no time for optimization and the surgical team will have to care for the patient moment to moment.

PREOPERATIVE CONSIDERATIONS

The septic patient may present in a variety of acuity levels. A patient in early sepsis may be ill in appearance but may be maintaining their airway and showing no difficulty breathing. A patient in early sepsis being prepared for surgery will benefit from oxygen delivered by nasal cannula and should be continuously monitored by pulse oximetry for changes in their respiratory status. A patient going to surgery who has digressed into septic shock may have significantly impaired oxygen exchange and benefit from endotracheal intubation and mechanical ventilation. Regardless of presentation, ensuring adequate airway, breathing, and circulation is the key assessment priority for the nurse.[5]

Prompt administration of preoperative antibiotics is crucial to diminishing the cascade of sepsis.[6,7] The overall goal in caring for the septic patient is elimination of the infection causing the sepsis; however, identification of the cause of infection is not always easy. The infection may be due to Gram-positive or Gram-negative bacteria or may be caused by a fungal infection. Culture negative sepsis occurs in more than half of septic cases where an organism is not identified.[8,9] Often a septic patient presenting for surgery will have blood drawn at the same time that the intravenous (IV) line is placed and blood cultures can be drawn and sent before administration of IV antibiotics. Initiating antibiotics before obtaining cultures can lead to a false-negative result and potentially delay appropriate antibiotic therapy. For this reason, obtaining cultures before antibiotic therapy is important; however, antibiotic therapy should not be delayed waiting on culture results. Antibiotics should ideally be initiated within the first hour of the patient presenting for treatment.[10] Physicians often order broad-spectrum antibiotics be started as soon as possible after obtaining a history in search of potential causes of the infection. In the case of the septic patient who is going to surgery, the source has likely been identified and antibiotic therapy that is likely to eradicate the offending bacteria has been ordered.