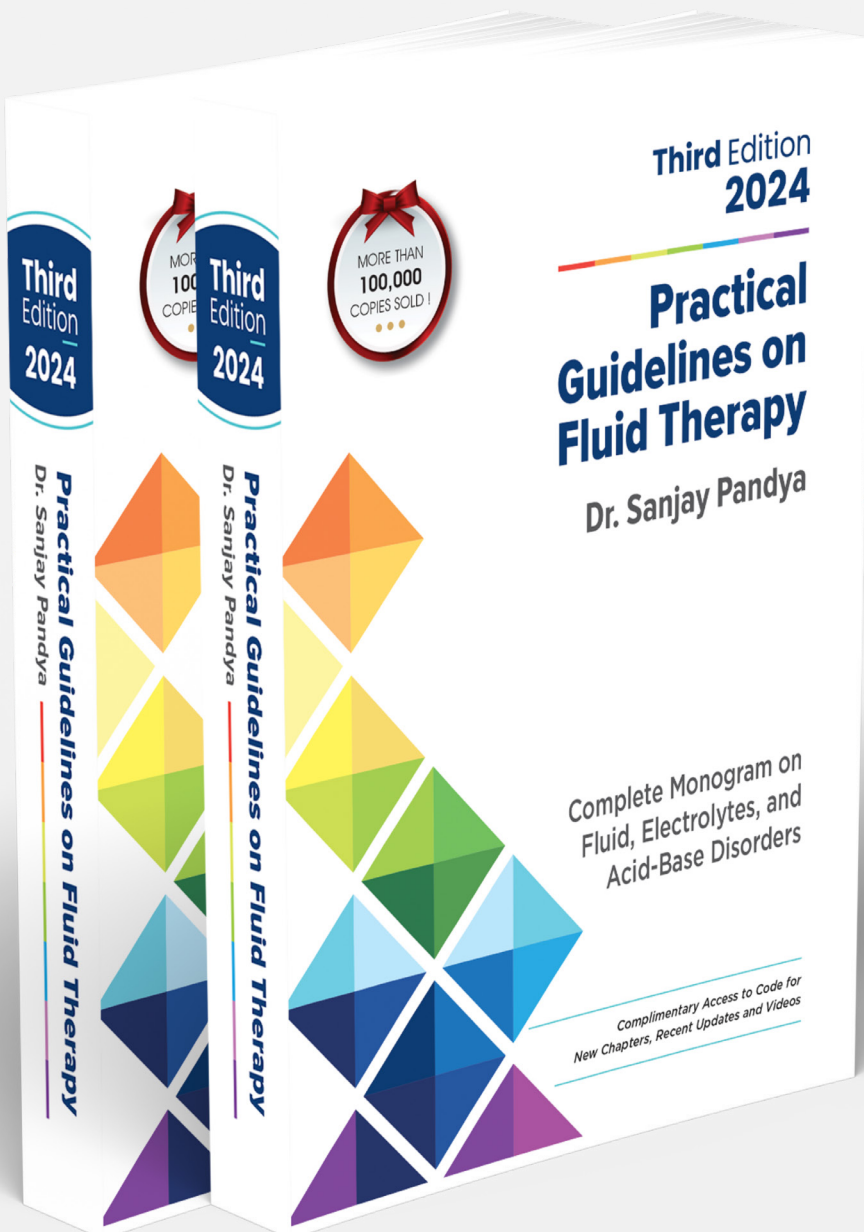




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Chapter 43:

Intraoperative Fluid Therapy



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INTRAVASCULAR VOLUME DISTURBANCES

Intraoperative hypovolemia and hypotension are common in high-risk prolonged surgeries, such as major abdominal or cardiac procedures, among vulnerable populations, including elderly patients and those with preexisting medical conditions, and are associated with high morbidity, risk of postoperative mortality, and adverse postoperative outcomes [1, 2].

Proper fluid therapy is an essential and critical component of intraoperative management. Its goal is to prevent and correct hypovolemia and hypotension while avoiding fluid overload. Fluid overload is harmful as it carries the risk of impaired tissue oxygenation, pulmonary edema, impaired wound healing, acute kidney injury (AKI), prolonged bowel

dysfunction, and longer hospital stay in surgical patients [3, 4]. Adequate fluid therapy ensures proper tissue perfusion and oxygenation, which are crucial for maintaining optimal surgical outcomes.

To avoid hypovolemia and hypotension, along with appropriate fluid replacement, it is essential to diagnose and treat the underlying causes.

Causes of hypovolemia

Causes of intraoperative hypovolemia and hypotension include [5, 6]:

1. **Surgical blood loss:** This is a major cause of hypovolemia, and the volume of blood loss depends on several factors, including the type and duration of the surgery, as well as any preexisting or acquired defects in hemostasis. Trauma surgery is the most common cause of severe blood

loss. Concurrently, the use of anticoagulant therapies like warfarin, and antiplatelet agents such as clopido-

grel, can further elevate the risk of bleeding during surgery.

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