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Risk Factors for Abdominal Compartment Syndrome After Endovascular Repair for Ruptured Abdominal Aortic Aneurysm

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DESCRIPTION

Increased respiratory rate is usually the first recognized clinical sign in the early onset of ACS, even with ventilation and sedation. Tachypnea may result from hypovolemia or hemorrhage, but CVP is usually associated with high or positive fluid balance, so the overall clinical presentation is not consistent with a hypovolemic state. Bedside ultrasonography and a thorough physical examination can often detect large amounts of ascites or intra-abdominal bleeding. ACS is usually the result or complication of certain medical conditions or treatments. The most common causes of ACS are severe abdominal trauma, abdominal sepsis, and pancreatitis. Treatments that can cause ACS include massive blood transfusions, intra-abdominal tamponade, and intra-aortic stenting for ruptured abdominal aortic aneurysms. The main symptoms of ACS are abdominal pain and bloating. Secondary manifestations of ACS are respiratory depression, decreased cardiac output, visceral ischemia due to decreased blood flow, and renal failure. Timely recognition and treatment of ACS is becoming increasingly important for overall prognosis. ACS detection may be compromised by other clinical conditions. Patients with blunt abdominal trauma may have active upper gastrointestinal bleeding due to stress ulcers and unstable vital signs. Hypovolemia and inadequate fluid intake are the first impressions of the cause of shock. However, CT also shows that massive hemoperitoneum compresses the intraperitoneal contents and causes ACS. Patients of this type may present with hemodynamic instability as the first clinical indicator of ACS. By considering both arterial inflow (MAP) and venous outflow (IAP) limitations, APP has been demonstrated as a predictive parameter for patient survival from IAH and ACS. Studies have also shown that APP is superior to other standard resuscitation endpoints such as arterial pH, base deficit, arterial lactate, and hourly urine output. Target APP above 60 mmHg is positively correlated with improved survival in IAH and ACS. IAP monitoring and IAH/ACS management are becoming increasingly important as they are critical to patient outcomes. Various methods of measuring pressure have been proposed, either directly (using a catheter to measure intra-abdominal pressure) or indirectly (using pressure within the bladder, stomach, colon or uterus). Among these methods, the bubble technique is the most widely used due to its simplicity and low cost. Several methods have been validated to enable continuous IAP measurements throughout the stomach, peritoneum, and bladder. A transvesical device can be connected to the ICU bedside monitor to provide other vital signs to the integrated patient monitor. Transvesical devices also provide a closed system that avoids contamination and reduces urinary tract infections. Although these techniques look promising, further clinical validation is needed before they can be recommended for general use. One of the questions for IAP measurement is the reference point. Many studies have suggested using the pubic symphysis as a reference point for many studies, which may lead to different IAP outcomes in the same patient in some clinical conditions. For example, changes in various body positions (supine, prone, head elevated), abdominal contractures during seizures, and abnormal contractions of the bladder detrusor muscle have been shown to affect the accuracy of IAP measurements. Another difference in IAP measurement techniques is the amount of distension introduced into the bladder to ensure a conductive column of fluid between the bladder wall and the transducer. Some studies have shown that too much can increase bladder pressure and not adequately reflect actual abdominal pressure.

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CONFLICT OF INTEREST

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