INDICATIONS FOR OPEN ABDOMEN AND CLASSIFICATION
STATEMENTS

The commonly accepted indications for OA in trauma are:
• DCS with the need for a second look operation for de-packing or for hollow viscus/mesenteric/pancreatic-biliary injuries (GoR B, LoE II);
• if gross peritoneal contamination is present (GoR C, LoE II);
• when a major defect in the abdominal wall has been caused by trauma (GoR B, LoE II);
• prevention of ACS in the presence of visceral swelling (GoR B, LoE II);
• treatment of ACS with decompressive laparotomy when medical therapy has failed (GoR B, LoE II).

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Most of these indications may be translated in the non-traumatic abdomen, even if evidence is lacking in this setting and further comparative or randomized studies are necessary. In DCS, OA is of paramount importance because it rapidly terminates the initial operation in physiologically depleted patients allowing a prompt admission to ICU where vital functions may be recovered (Fig. 2.1). Moreover, by leaving the fascial edges open, OA facilitates the second surgical procedure, usually within 24-48 hours. At this time, the aim of the surgeon is de-packing and definitive correction of a bleeding parenchymal injury, or the restoration of bowel continuity with an anastomosis, or a second look at a de-vascularized hollow viscus for mesenteric injury (Fig. 2.2). In this case, after the emergency control of bleeding, a second operation is often necessary to assess bowel viability. Similar to what happens in a non-trauma setting, another indication for OA in trauma patients is a massive peritoneal contamination, not amenable to complete cleaning at the time of index operation, with subsequent stepwise access to the operating room until definitive resolution of the infectious process. Finally, abdominal wall injury may produce extensive defects of

Figure 2.1.
Liver packing for OIS V injury. Surgical pads surrounding the liver should be removed within 48 hours and OA is required.
Mesenteric injury at the time of first operation for bleeding control. A second look to assess bowel viability is required and OA is mandatory.

The skin and muscular layers and OA is an unavoidable consequence of the trauma itself. Direct injury to the abdominal wall is a rare condition which may occur after blast injuries or blunt trauma with de-gloving of the skin and muscular layers (Fig. 2.3). The scientific foundation of OA as a part of DCS is lacking. However, there have been a large number of studies showing support for the damage control approach in major trauma patients with reduced physiological reserve, with a significant positive impact on survival. In a recent prospective observational study by the American Association of Surgery for Trauma, the main indication for OA was packing (70.2%), mostly for liver interventions, followed by bowel resection (37.9%) with delayed anastomosis and vascular injury repair (27.9%) with the need for a second look.

ABDOMINAL COMPARTMENT SYNDROME (ACS)

ACS prevention or treatment is the second fundamental indication for OA in trauma. Intra-abdominal hypertension (IAH) is often the main cause or contributor to organ dysfunction and failure in critically ill patients. As the underlying condition may be itself responsible for organ dysfunction, without any IAH, it is important for decision-making to perform early monitoring of intra-abdominal pressure (IAP) using a bladder catheter. The empty

Loss of the right rectal muscle following blunt trauma. The defect is covered by white foam. The defect was closed with a porcine mesh but a huge ventral hernia developed after 1 year.