

Hemostats, sealants, and adhesives: components of the surgical toolbox. [Review] [70 refs]

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Abstract:

The surgical toolbox is expanding, and newer products are being developed to improve results. Reducing blood loss so that bloodless surgery can be performed may help minimize morbidity and length of stay. As patients, hospital administrators, and government regulators desire less invasive procedures, the surgical technical challenge is increasing. More operations are being performed through minimally invasive incisions with laparoscopic, endoscopic, and robotic approaches. In this setting, tools that can reduce bleeding by causing blood to clot, sealing vessels, or gluing tissues are gaining an increasing importance. Thus, hemostats, sealants, and adhesives are becoming a more important element of surgical practice. This review is designed to facilitate the reader's basic knowledge of these tools so that informed choices are made for controlling bleeding in specific clinical situations. Such information is useful for all members of the operative team. The team includes surgeons, anesthesiologists, residents, and nurses as well as hematologists and other medical specialists who may be involved in the perioperative care of surgical patients. An understanding of these therapeutic options may also be helpful to the transfusion service. In some cases, these materials may be stored in the blood bank, and their appropriate use may reduce demand for other transfusion components. The product classification used in this review includes hemostats as represented by product categories that include mechanical agents, active agents, flowables, and fibrin sealants; sealants as represented by fibrin sealants and polyethylene glycol hydrogels; and adhesives as represented by cyanoacrylates and albumin cross-linked with glutaraldehyde. Only those agents approved by the Food and Drug Administration (FDA) and

presently available (February 2008) for sale in the United States are discussed in this review.

[References: 70]