Gross Tissue Appearances Following Hemorrhage, Low-Pressure Stabilization, and Resuscitation

Introduction
In a severe prolonged hemorrhage and resuscitation protocol, when tissue abnormalities become visually apparent.

Methods (continued)
Following euthanasia, necropsy was performed on each of the eight dogs. Internal organs were examined for visible abnormalities both in place and after removal from their respective body cavities.

Results (continued)
Gastrointestinal contents were removed by lavage before mucosal assessment.

Results
Heart
No damage to the heart was visible in any animal.

Stomach
No lung nor gastric mucosa looked normal.

Lungs

Intestines
Gastric, small and large intestinal mucosa were not normal in any animal. The 2 early non-survivors were among those with the least abnormal intestines.

Discussion
• Grossly visible changes in appearance occurred in most examined organs in most dogs.
• Similar abnormalities in organ appearances (except possibly the intestines) in the 2 non-survivors versus survivors suggest that damage developed during hemorrhage rather than during resuscitation.
• The presence of visible damage as early as 9 minutes into stabilization suggests that improvements in strategies for resuscitation from severe, prolonged hemorrhage should target repair of already damaged tissues in addition to preventing additional tissue damage.

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