

Vascular Trauma

"Chirurgion must be forewarned ... too much cutting or tearing of the flesh, especially veins, arteries, nerves or tendons, lest is be said of him that his hand hath done more harm than the weapon, which would be an extreme dishonor to him and to his art."

— Ambroise Pare (1510–1590)

According to the National Trauma Institute, trauma is the leading cause of death for Americans between 1 and 44 years old and ranks third for American deaths overall, across all age groups. Each year, trauma accounts for 41 million emergency room visits and 2 million hospital admissions. Many of these patients will benefit from a less invasive, endovascular treatment.

The widespread adoption of thoracic endovascular aortic repair as the primary treatment for blunt traumatic aortic injury led to the release of clinical practice guidelines by the Society for Vascular Surgery in 2011; however, a number of unresolved issues have remained. Joshua D. Adams, MD, and John A. Kern, MD, examine how these previously identified issues will play out as techniques are fine-tuned and follow-up data become available.

Unfortunately, traumatic injuries of solid intra-abdominal organs are all-too-common presentations at almost every trauma center; therefore, one must be familiar with the indications and available embolic agents crucial to endovascular management. Ricardo Yamada, MD; Marcelo Guimaraes, MD; and I discuss how to address injuries to the spleen, liver, and kidneys while providing optimal outcomes and avoiding unnecessary risk and costs.

Next, José E. Cohen, MD; Shifra Fraifeld, MBA; and Eyal Itshayek, MD, summarize the available literature on the endovascular management of traumatic vertebral artery dissections and share the protocols used at their center in regard to when and how they utilize this method.



Although upper and lower extremity traumas are infrequently seen in the civilian health care system, they can be abundant in armed military conflicts and must be addressed to the best of our abilities. Lorenzo Paolo Moramarco, MD; Ilaria Fiorina, MD; and Pietro Quaretti, MD, report on the main endovascular tools for treating these injuries, which avoid adjacent tissue damage and confer lower morbidity and mortality rates than surgery.

Luke R. Wilkins, MD; Jaime All, MD; and J. Fritz Angle, MD, discuss the considerations for employing transcatheter embolization techniques for traumatic pelvic injuries, including preprocedural planning, access, and diagnostic imaging.

Rosana Ceratto, MD; Jorge Chudky, MD; Carlos Bleise, MD; and Pedro Lylyk, MD, review the three most frequently diagnosed types of vascular head and neck

injuries: arteriovenous fistulas, dissections, and aneurysms, as well as the epidemiology, etiology, and treatment options for each.

To conclude our featured topic, Federico E. Parodi, MD, and Juan C. Parodi, MD, share their recollections about the history and development of endovascular treatment of vascular trauma by recounting some early cases and describing the potential advantages of employing endoluminal treatment in those presenting with traumatic injuries.

In our Vessel Update, we shine a spotlight on aortic disease awareness. Frank R. Arko, III, MD, and Dianna M. Milewicz, MD, discuss the Ritter Foundation and the ways in which they hope to raise awareness for aortic disease and ongoing research.

Finally, we spoke with Suresh Vedantham, MD, national principal investigator of the ATTRACT study, about the current state of deep vein thrombosis treatment and regulatory issues in the venous space.

We believe these articles will bring valuable new information that could help our readers in the less invasive management of patients with trauma. ■

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Guest Chief Medical Editor