

Abdominal Pseudoaneurysms in Patients with High-Grade Traumatic Injuries: A Case Series

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Background. Blunt abdominal trauma affects 25% of all patients admitted with traumatic injuries. Although relatively rare, the development of solid organ pseudoaneurysms (PSA) can pose a significant threat to patients. If untreated, these PSAs may rupture and lead to life-threatening hemorrhage. Despite this risk, the use of follow-up imaging after initial CT for abdominal trauma has not been widely embraced.

Methods. A database was created to include all adult patients admitted at a level 1 and a level 2 trauma center between 2012 and 2020 for abdominal injuries with an AAST grade of ≥ 3 . A retrospective review of this database was conducted to identify patients with PSAs and their outcomes.

Results. A total of 1,260 patients were identified with high-grade abdominal injuries. Forty-seven of these patients had a PSA. The median AAST grade was 4. Seventy percent had extravasation on initial CT imaging, and 76.6% underwent IR embolization. Only 12 patients (25.53%) had CT angiography prior to discharge, and 6.38% required readmission for treatment of their PSA. All-cause mortality in these patients was 14.89%.

Conclusion. The incidence of PSAs in this series is consistent with that seen in previous literature; however, previous literature has excluded patients with penetrating trauma. Given this population's high percentage of penetrating trauma, this research highlights a potential new focus. Both participating hospitals have used our findings to inform new guidelines. Now all patients with solid organ injuries with an AAST grade of 3 or higher are required to undergo CTA surveillance prior to discharge to screen for PSA.