Department of Surgery
2026 Research Day
6th May 2026 (Wednesday) | 7 am – Noon | MART Auditorium

Title: Ruptured Primary Mycotic Abdominal Aortic Aneurysms: A Case Series

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Background:
Ruptured primary mycotic abdominal aortic aneurysms (MAAAs) are rare but highly lethal vascular infections resulting from microbial destruction of the aortic wall and rapid aneurysmal degeneration. Rupture represents a surgical emergency and is associated with substantial morbidity and mortality. Because presentations are often nonspecific, diagnosis may be delayed, complicating management and outcomes.

Methods:
We conducted a retrospective case series of patients diagnosed with ruptured primary mycotic abdominal aortic aneurysm at a large tertiary academic medical center between the years 2010 and 2025. Primary mycotic aneurysm was defined as infection-related aneurysmal degeneration of the native abdominal aorta without prior aortic repair. Demographic data, presenting symptoms, imaging findings, microbiology, operative management, and outcomes were collected from the electronic medical record.

Results:
Three patients (ages 53–88 years) presented with subacute and nonspecific symptoms including fever, malaise, abdominal or back pain, diarrhea, or lower extremity pain. All aneurysms were infrarenal and demonstrated imaging features concerning for infection, including periaortic inflammation, abscess formation, or gas within a contained rupture. Management strategies varied based on clinical stability and comorbidity. One patient underwent urgent open excision with extra-anatomic bypass reconstruction. Two patients underwent emergent endovascular aneurysm repair (EVAR) for hemorrhage control; one later required staged endograft explantation and extra-anatomic bypass. Identified organisms included *Staphylococcus aureus* and *Escherichia coli*, while one case remained culture-negative. All patients experienced significant postoperative morbidity, including abscess formation, renal failure requiring dialysis, and pleural effusion. One patient died during the index hospitalization.

Conclusions (or Preliminary Conclusions):
Ruptured primary MAAA remains a diagnostically challenging and highly morbid condition. Nonspecific presentations frequently delay diagnosis, emphasizing the importance of early cross-sectional imaging in patients with unexplained systemic inflammation or atypical pain. Management often requires a combination of urgent hemorrhage control, aggressive surgical debridement, and prolonged antimicrobial therapy. Greater awareness of this entity may facilitate earlier recognition and improved outcomes.