Individualized surgical strategies for treating infectious AAAs: Experience of a tertiary reference hospital in China

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Objective:

To assess the efficacy of various surgical strategies for treating infectious abdominal aortic aneurysm (IAAA), including infectious native aortic aneurysms (INAA) and vascular (endo)graft infections (VEGI). Given the complexity and variability of IAAA among patients, this study aims to share single-center experiences and offer recommendations for individualized surgical approaches.

Methods:

This study prospectively collected and analyzed data from 49 IAAA patients treated surgically at Zhongshan Hospital Fudan University from January 2022 to July 2024. The analysis included patient demographics, infection types, microbiological findings, surgical approaches, antibiotic regimens, and clinical outcomes.

Results:

Among the 49 patients (42 males, 7 females; median age 57 years), 22 had INAA, and 27 had VEGI. According to the ESVS diagnostic criteria, 42 patients were confirmed preoperatively (meeting 3 out of 3 diagnostic criteria), while the remaining 7 were strongly suspected preoperatively to have IAAA (meeting 2 out of 3 diagnostic criteria). Surgical approaches varied: 14 patients received neoaortoiliac system repair using the autologous superficial femoral vein (NAIS), 10 had rifampicin-soaked synthetic graft reconstruction, 15 received endovascular aneurysm repair (EVAR), and others underwent various strategies including abscess drainage, graft removal or debridement alone. NAIS was preferred for younger patients or with drug-resistant infections, while rifampicin-soaked grafts were used in patients with antibiotic-sensitive infections or poor surgical tolerance. EVAR was primarily selected for high-risk patients with acute rupture or poor overall condition. Among all 34 patients who underwent open abdominal surgery, 19 were confirmed to have aortoenteric fistulas and underwent intestinal repair. Follow-up showed varying outcomes: 1 sudden death post-NAIS, 1 recurrent infection post-rifampicin-soaked graft, and 6 recurrent infections and 4 deaths post-EVAR. The average hospital stay was 32 days for NAIS, 19 days for rifampicin-soaked grafts, and 6.5 days for EVAR.

Conclusion:

IAAA management requires a tailored approach based on individual patient conditions and infection severity. NAIS is recommended for complex, drug-resistant infections, while rifampicin-soaked grafts offer a balance for those with responsive infections. EVAR serves as a temporary solution for high-risk patients.