TJVS Turkish Journal of Vascular Surgery

Turk J Vasc Surg.2026;35(1):68-71
DOI: 10.9739/tjvs.2025.08.043

Available online at www.turkishjournalofvascularsurgery.org

Case Report

A successful obturator bypass after aortic graft infection

Onur Baris Dayanir, Ceren Sayarer, Sadik Kivanc Metin, Sevket Baran Ugurlu

Dokuz Eylül University, Faculty of Medicine, Department of Cardiovascular Surgery, İzmir, Türkiye

Received: August 16, 2025 Accepted: December 05, 2025 Published online: January 12, 2026

Abstract

Aortic graft infection (AGI) is a devastating complication with high mortality and morbidity. Reported incidence is 0.5–5% after open aortic surgery and 0.5–1% after endovascular aneurysm repair (EVAR). Open surgery with aggressive debridement and, in selected cases, extra-anatomic bypass may be required. We report a woman who developed AGI nine months after aortobifemoral bypass and who was successfully treated with bilateral obturator bypass, achieving limb revascularization and infection control.

Keywords: Aortic diseases, prosthesis-related infections, vascular surgical procedures

INTRODUCTION

Aortic graft infection (AGI) is a rare but life-threatening complication after aortic reconstruction, associated with substantial morbidity, limb loss, and mortality. Management is complex and typically requires multidisciplinary assessment, targeted antimicrobial therapy, and definitive surgical source control. In stable patients, complete explantation of infected material with thorough debridement and in situ reconstruction is often preferred; however, extensive groin sepsis, hostile local tissues, or severe contamination may preclude anatomic reconstruction. In such settings, extra-anatomic revascularization can restore limb perfusion while avoiding infected fields. Obturator bypass offers a deep, well-protected route that traverses clean planes away from the groin and has shown acceptable long-term patency. We present a case of late AGI following aortobifemoral bypass successfully managed with graft explantation and bilateral obturator bypass to achieve limb salvage and infection control.

CASE REPORT

A 52-year-old woman presented on 11.05.2022 with bilateral intermittent claudication. Comorbidities included hypertension, peripheral arterial disease, and prior left femoral deep vein thrombosis. She had previously undergone angioplasty and stenting of the aorta and both common iliac arteries elsewhere. Computed tomography angiography (CTA) on 12.05.2022 showed stent occlusion; on 01.06.2022 a 14×7×7-mm Dacron Y-graft was anastomosed end-to-side to the aorta and both common femoral arteries, restoring flow.

On 21.03.2023 she re-presented with swelling at the left groin incision (Figure 1). From 21.03.2023 to 09.12.2024 she was hospitalized eight times for wound complications. Repeated surgical debridements and negative-pressure wound therapy were performed. Blood cultures remained negative; wound, abscess, and tissue cultures yielded polymicrobial growth. Prolonged empirical and targeted antibiotics were administered, and a vancomycin allergy was documented.

Operative Technique

CTA on 09.12.2024 demonstrated inflammatory changes surrounding both iliac graft limbs. Elective graft explantation and extra-anatomic revascularization via bilateral obturator bypass were planned. On 12.12.2024, under general anesthesia, a midline laparotomy was performed. Dense adhesions were lysed. On exposing the prior Y-graft, purulent material was encountered

CITATION
Dayanir OB, Sayarer C, Metin SK, Ugurlu SB. A successful obturator bypass after aortic graft infection. Turk J Vasc Surg.2026;35(1):68-71.

Corresponding Author: Onur Baris Dayanir, Dokuz Eylül University, Faculty of Medicine, Department of Cardiovascular Surgery, İzmir, Türkiye
Email: onurbarisdayanir95@gmail.com

circumferentially, and the left ureter appeared dilated due to extrinsic compression by the perigraft collection.

Systemic heparin (100 U/kg) was administered. The infrarenal aorta and distal graft were clamped, and the graft was excised from the proximal anastomosis. The native distal aorta was completely occluded with no retrograde flow. Previous femoral incisions were reopened; purulent collections were drained, the infected graft limbs were exposed, and the native femoral arteries were dissected. Bilateral superficial and deep femoral arteries were clamped and the distal anastomoses were taken down. Both common femoral arteries were chronically occluded with no antegrade flow and were primarily repaired.

An 8-mm×80-cm polytetrafluoroethylene (PTFE) graft was anastomosed end-to-side to the infrarenal aorta, 2 cm proximal to the previous anastomosis. Through a mid-thigh incision remote from the groin, the superficial femoral artery (SFA) was exposed. For the right limb, a tunnel was created through the right obturator foramen along clean planes, and an end-to-side anastomosis was performed to the right SFA within the Hunter's canal. The same steps were repeated on the left with a second 8-mm×80-cm PTFE graft; its proximal anastomosis was fashioned end-to-side on the right PTFE graft (jump configuration) rather than the aorta. After hemostasis and flow checks, all wounds were closed. A 6F, 28-cm double-J stent was placed into the left ureter cystoscopically by urology. The patient was transferred to the intensive care unit.

Postoperative Course

The patient remained in the intensive care unit (ICU) for 48 hours. CTA on postoperative day 11 showed patent conduits from the abdominal aorta to both SFAs with good distal runoff and marked regression of groin collections. Because of vancomycin allergy, piperacillin-tazobactam 4×4.5 g and teicoplanin 400 mg once daily were given for 18 days (3 preoperative and 15 postoperative). After IV therapy, local dressings were continued. She was discharged on day 40 in good condition.

At follow-up on 01.08.2025 she was asymptomatic. Ultrasound revealed a postoperative hernia sac containing mobile bowel loops along the right groin incision extending toward the suprapubic region, without abscess or fluid collection. The grafts from the aorta to both SFAs and their distal portions were patent. Triphasic arterial waveforms were present at all levels (Figure 2).

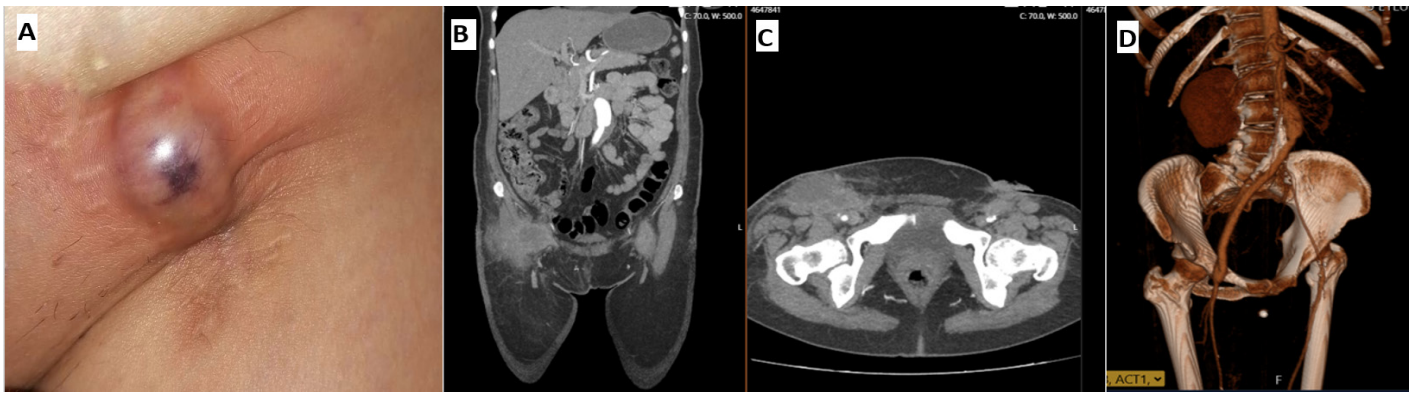

Figure 1. Preoperative findings of groin infection and perigraft inflammation. (A) Left groin clinical photograph showing a tense, erythematous swelling with violaceous discoloration at the prior incision line. (B) Coronal CTA demonstrating inflammatory changes around the aortobifemoral graft limbs. (C) Axial CTA at the pelvic level showing groin collections adjacent to the graft course. (D) 3D volume-rendered CTA depicting the aortic graft and iliac limbs with surrounding inflammatory reaction

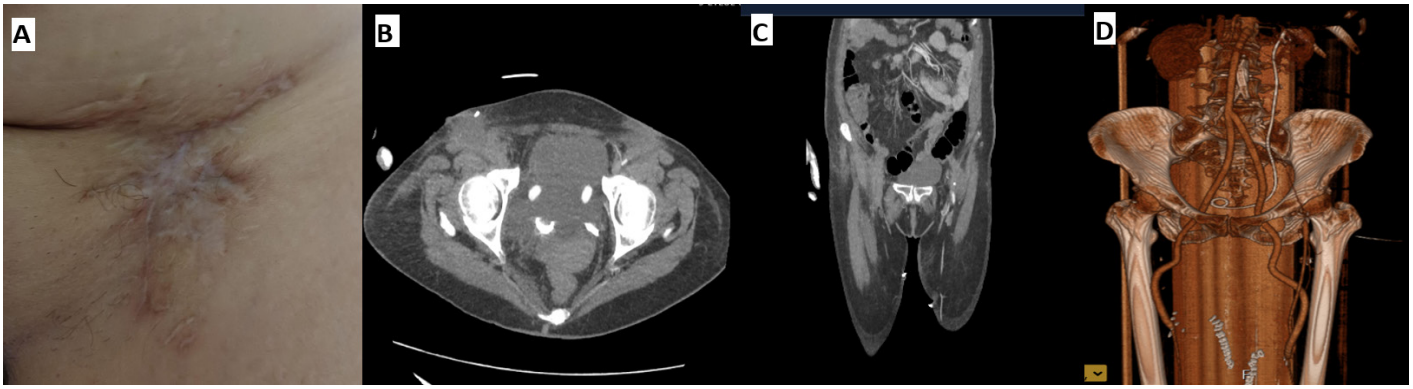

Figure 2. Postoperative status after bilateral obturator bypass. (A) Healed groin incision without fluctuance or drainage. (B) Axial CTA demonstrating patent extra-anatomic conduits coursing medial to the groins. (C) Coronal CTA showing bilateral obturator bypass grafts with good distal runoff and regression of groin collections. (D) 3D volume-rendered CTA illustrating inflow from the infrarenal aorta to both superficial femoral arteries via bilateral obturator bypasses

DISCUSSION

Although uncommon, AGI carries substantial mortality and resource burden. A population-based study reported a 5-year cumulative incidence of vascular graft infection of 1.6% after aneurysm repair [1], and AGI was observed in 0.5–1% after EVAR [2]. Mortality may reach 27.6% at 3 months and 43% at 1 year [3]. Diagnosis rests on clinical suspicion supported by inflammatory markers, microbiology, and multimodal imaging such as CTA and 18F-fluorodeoxyglucose positron emission tomography/computed tomography (PET/CT). In hemodynamically stable patients, elective open surgery with thorough debridement, prosthetic explantation, and preferably orthotopic reconstruction is generally recommended [4].

Reimplantation of new prosthetic material into a contaminated field risks recurrent infection; observational series report reinfection rates above 10% despite advances in conduit technology [5]. When groin involvement is extensive or local tissues are hostile, extra-anatomic bypass is a practical alternative. The obturator route is advantageous because it traverses clean planes distant from the groins, follows a favorable anatomic course, and provides durable limb revascularization with acceptable long-term patency [6]. Several extra-anatomic reconstructions have been described for patients who are not suitable for in situ aortofemoral reconstruction. Among these, femorofemoral crossover bypass is a well-established option for unilateral aortoiliac occlusive disease, particularly in high-risk patients in whom endovascular or anatomic procedures are not feasible, with acceptable long-term patency and limb-salvage rates [7]. When bilateral revascularization is required or iliac inflow is unsuitable, axillofemoral or axillobifemoral bypass may be preferred; however, in many series the long-term patency of these grafts is slightly lower than that of femorofemoral reconstructions [8]. In the presence of groin infection or prosthetic graft sepsis, these grafts still run close to scarred or contaminated tissue planes, whereas the obturator route provides a deep, well-protected tunnel away from the infected groin while maintaining anatomic inflow and outflow. In the present case, using an aortic inflow graft with a contralateral jump-graft allowed bilateral revascularization while completely avoiding infected groin fields. Early imaging and clinical recovery supported procedural success. Multidisciplinary management—including urologic stenting for ureteral compression—addressed adjacent organ compromise and may reduce postoperative morbidity.

CONCLUSION

AGI may present months to years after implantation and can range from local groin sepsis to catastrophic hemorrhage [9]. Standard therapy combines complete excision of infected prosthesis, revascularization, and targeted antimicrobial therapy. When feasible, in situ aortic reconstruction is often preferred to reduce reinfection risk [10]; however, when groin contamination is severe, bilateral obturator bypass offers a reliable extra-anatomic option with reported 24-month patency around 83% [11]. This case supports obturator bypass as a viable strategy for limb salvage and infection control when in situ reconstruction is unsafe.

Acknowledgments: We thank operating room nurse Gözde Dayanır for preparing, anonymizing, and formatting the clinical photographs and imaging figures used in this report. (Acknowledged individual has provided permission to be named.)

Patient Consent for Publication: Informed consent was obtained, and procedures followed institutional ethical standards.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: All authors contributed equally to the article.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding: The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Tabaja H, Baddour LM, Chesdachai S, De Martino RR, Lahr BD, DeSimone DC. Vascular Graft Infection After Aneurysm Repair: A Population-Based Study. Mayo Clin Proc. 2023;98:1223-34.
2. Wanhainen A, Verzini F, Van Herzeele I, Allaire E, Bown M, Cohnert T, Dick F, et al. Editor's Choice - European Society for Vascular Surgery (ESVS) 2019 Clinical Practice Guidelines on the Management of Abdominal Aorto-iliac Artery Aneurysms. Eur J Vasc Endovasc Surg. 2019;57:8-93.
3. Salome W, Mallorqui MH, Czerny M, W Lang, Schmidli J, Wyss TR, et al. Physician made bovine pericardial tube grafts in aortic infection: A European multicentre study. Eur J Vasc Endovasc Surg. 2024;64:997-1005.
4. Czerny M, Grabenwöger M, Berger T, Aboyans V, Della Corte A, Chen EP, et al. EACTS/STS Scientific Document Group. EACTS/STS Guidelines for diagnosing and treating acute and chronic syndromes of the aortic organ. Eur J Cardiothorac Surg. 2024;65:ezad426.
5. Bisdas T, Wilhelmi M, Haverich A, Teebken OE. Cryopreserved arterial homografts vs silver-coated Dacron grafts for abdominal aortic infections with intraoperative evidence of microorganisms. J Vasc Surg. 2011;53:1274-81.e4.
6. Altun G, Pulathan Z, Hemsinli D. Obturator bypass in the treatment of prosthetic graft infection: Classic but still effective. Turk Gogus Kalp Damar Cerrahisi Derg. 2018;26:480-3.
7. Park KM, Park YJ, Kim YW, Hyun D, Park KB, Do YS, et al. Long term outcomes of femorofemoral crossover bypass grafts. Vasc Specialist Int. 2017;33:55-8.

8. Appleton ND, Bosanquet D, Morris-Stiff G, Ahmed H, Sanjay P, Lewis MH. Extra-anatomical bypass grafting: A single surgeon's experience. Ann R Coll Surg Engl. 2010;92:499-502.

9. Stockschläder L, Margaryan D, Omran S, Schomaker M, Greiner A, Trampuz A. Characteristics and outcome of vascular graft infections: a risk factor and survival analysis. Open Forum Infect Dis. 2024;11:ofae271.

10. Kim YW. Aortic Endograft Infection: Diagnosis and Management. Vasc Specialist Int. 2023;39:26.

11. Mohammed Moawed M, Abd-Elghany SM. Extra-anatomical Obturator Bypass Due to Groin Infection. Med J Islam Repub Iran. 2023;37:62.