UNIVERSITY OF LIFE SCIENCES ”KING MIHAI I” FROM TIMISOARA
”YOUNG PEOPLE AND MULTIDISCIPLINARY RESEARCH IN APPLIED LIFE SCIENCES”

5-6 November 2026



Aortic Thrombectomy in Cats with Saddle Thrombus: A Scoping Review of Surgical Approaches and Clinical Outcomes (2015–2026)

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Abstract: *Feline aortic thromboembolism involving the aortic trifurcation is a life-threatening emergency predominantly managed medically. Although aortic thrombectomy has been described, its reported use, surgical approaches and clinical outcomes remain incompletely characterized. This scoping review aimed to summarize the published evidence on surgical thrombectomy in affected cats between 2015 and 2026. Sixty-five relevant publications on feline thromboembolism were reviewed. Treatment modalities were recorded, and surgical reports were examined for procedural details, time to intervention, survival to hospital discharge, functional recovery, and follow-up.*

Open aortic thrombectomy was reported in eight publications involving 23 cats. Fourteen cats (60.9%) survived to hospital discharge, of which seven (50.0%) were reported to have regained full pelvic limb function. Long-term follow-up was limited. All cats reported to have undergone surgery within four hours of clinical onset survived to discharge, compared with approximately half of those undergoing later intervention or for which timing was unspecified. However, the small sample size and incomplete reporting preclude reliable conclusions regarding the association between intervention timing and survival. Surgical treatment was infrequently documented in cohorts encompassing multiple treatment modalities. Differences in patient selection, disease severity, and outcome reporting prevented robust comparisons with medically managed cats.

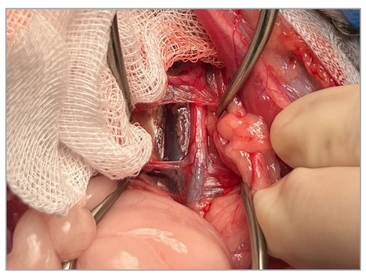
Published evidence on feline aortic thrombectomy remains limited to small, heterogeneous reports. Survival to discharge and complete functional recovery have been documented following surgery; however, the available evidence does not establish its comparative effectiveness or define optimal patient selection and timing. Standardized reporting and prospective investigation are needed to clarify the role of thrombectomy in feline aortic thromboembolism.

Keywords: feline aortic thromboembolism; saddle thrombus; thrombectomy; embolectomy; arteriotomy; reperfusion injury

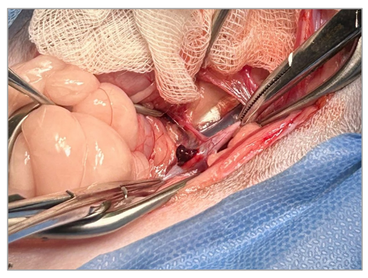
• Introduction

Feline aortic thromboembolism (FATE, “saddle thrombus”) is one of the most devastating conditions in feline medicine: a blood clot blocks the aorta and cuts off the blood flow to the hindlimbs, with a rapid onset of severe pain and paralysis. Only 30–40% of cats survive to hospital discharge. Most cats receive drugs; surgery to remove the clot exists, but nobody knows how often it is done.

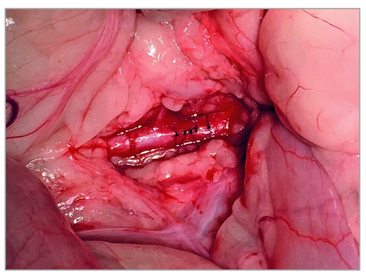
Aim: to find out how often surgery is reported in cats with a blocked aorta, and how operated cats do (articles from 2015 to 2026).



Exposure
Original photo



Clot
Original photo



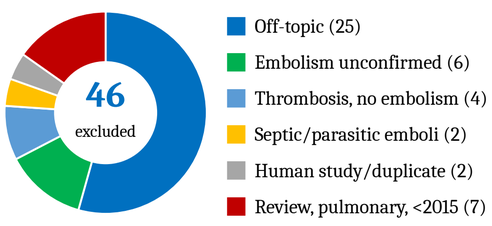
Closure
Photo taken from Vezzosi et al., 2020

Open surgical thrombectomy: the aorta is exposed, the clot removed and the vessel closed with fine sutures.

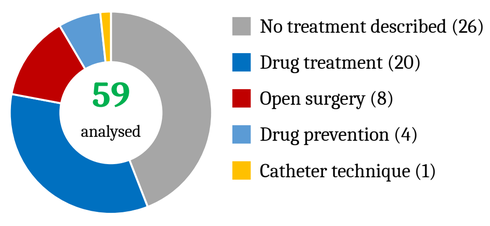
• Material and method

Scoping review of articles published from 2015 to 2026, searched in PubMed, Google Scholar, ResearchGate, publisher websites and reference lists. Of 105 articles screened, 65 were relevant and 59, on arterial thromboembolism, were analysed. We first collected data on surgery (technique, time to surgery, survival, limb recovery and then on medication.

Why 46 of the 105 screened articles were not analysed



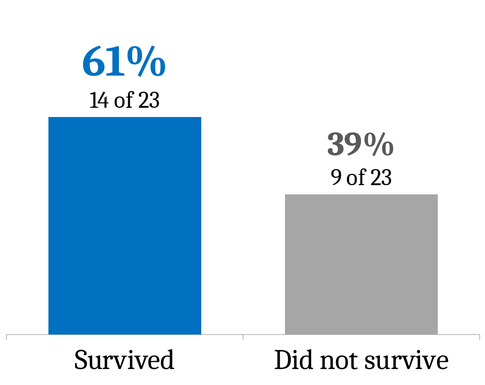
Treatments described in the 59 arterial articles



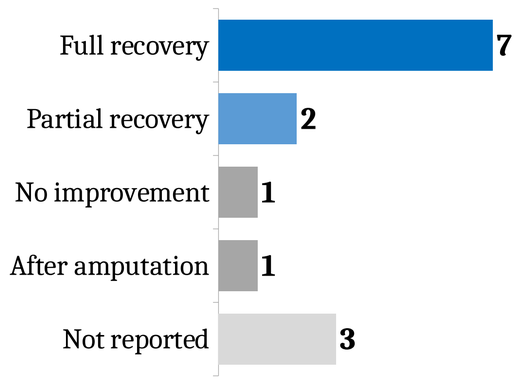
• Results and discussions

- Open surgery was reported in 8 of 59 articles (23 cats); a catheter technique in 1.
- Where all cats were counted (3 cohorts, 287 cats) no operation was reported; in a fourth cohort, 4 of 36 cats (11%) were operated.
- 14 of 23 operated cats survived (61%); 7 regained full use of the limbs.
- 4 of 4 cats operated within 4 hours survived, against 4 of 9 operated later: too few cats to conclude.

Survival to discharge (23 cats)



Limb function in the 14 survivors



- Early surgery may improve outcomes, but very few cats were reported.
- Surgical and medical outcomes cannot be reliably compared: selection, severity and reporting differ.
- Reperfusion injury and anaesthetic risk are the main concerns.

• Conclusions

- Evidence on surgical thrombectomy remains limited to small, heterogeneous reports.
- Surgery is rarely reported.
- Surgery and drugs cannot be fairly compared yet.
- Standard reporting and prospective studies are needed.

References: Guillaumin J. J Feline Med Surg 2024;26(6) · Cambournac M, et al. Front Vet Sci 2026 · Li J, et al. Front Vet Sci 2025;12:1618435 · Vezzosi T, et al. J Vet Cardiol 2020;28:48–54 · Kargı B, et al. Kocatepe Vet J 2026 · Borgeat K, et al. J Vet Intern Med 2014;28:102–108.

Acknowledgement: The authors would like to thank the Faculty of Veterinary Medicine, University of Life Sciences “King Mihai I” from Timișoara (Calea Aradului 119, 300645 Timișoara, Romania), for the academic support and resources provided throughout the development of this research.