

procent případů už dříve podstoupilo operaci aorty nebo srdce. Strategie chirurgické léčby byly zvoleny podle umístění pseudoaneuryzmatu a byly celkově nejednoznačné.

**Závěr:** Podle současné literatury neexistují jednoznačné pokyny či doporučení, operace by tedy měla být přizpůsobena individuálně danému pacientovi. Po kardiokirurgických výkonech se doporučují pravidelné kontroly, které obnášejí i vyšetření zobrazovacími metodami. I navzdory výraznému pokroku v endovaskulární léčbě není tato metoda vždy vhodná, a pak je léčbou volby otevřená operace.

**Klíčová slova:** falešné aneurysma hrudní aorty, pseudoaneuryzma aorty, systematický přehled.

## Introduction

Aortic false aneurysm, also referred to as aortic pseudoaneurysm, occurs when the aortic wall is disrupted, causing it to expand and be contained only by the periaortic connective tissue (1). This condition is commonly seen in thoracic aortic false aneurysms (TAFAs) where the blood leakage is constrained by the surrounding mediastinal structures. On one hand, it is often an infrequent complication of cardiac surgery (2); on the other hand, it can also develop through traumatic (3), inflammatory, or infectious (4) events. Patients are usually asymptomatic, which can lead to delayed diagnostic processes. This factor, combined with an unpredictable progression, makes it a hazardous situation. TAFAs can manifest through gradual expansion and compress or invade the surrounding structures (1, 5, 6). Thanks to rapid development and significant advancements in vascular interventional radiology, endovascular management might become the preferred choice of treatment, if technically feasible, to avoid complications associated with reoperation (7). However, endovascular treatment of TAFE is often not suitable and still faces limitations, which makes open surgery the treatment of choice. Regarding these facts, we present an overview of surgical approaches in the treatment of TAFAs.

## Ethical approval

The literature search was exempt from ethical approval as the research involved already published data.

## A systematic review of the literature

## Methods

### Search strategy

Two databases – PubMed and EMBASE – were searched with language limitation to

English. The search was limited to the time frame between 1<sup>st</sup> January 1979 and 31<sup>st</sup> December 2022. The following MeSH terms were used: “thoracic aortic false aneurysm”, “pseudoaneurysm”, and “surgical treatment”. No other criteria were applied during the search.

### Selection criteria

As the first step, titles and abstracts were screened to determine eligibility. Studies presenting ten or more patients with surgical treatment of TAFE were included. Case reports, editorials, commentaries, articles without abstracts, articles in language other than English, and abstracts from congresses were excluded. As the second step, full-text articles were thoroughly reviewed and evaluated. Additionally, we searched the reference lists of the selected articles from the second phase to identify any relevant studies that had not been found in our initial search.

### Data extraction

We have utilized the following information: the number of patients, their demographics (sex, age), any comorbidities they may have including connective tissue disorder, chronic obstructive pulmonary disease, hypertension, chronic renal failure, or NYHA, their prior surgical history, details regarding their TAFE (including location and symptoms), details regarding their TAFE surgical repair (such as the type of surgical intervention, the duration of cardiopulmonary bypass, and the duration of aortic clamping), and their in-hospital mortality and survival rates.

## Results

### Search results

In our literature search, we reviewed a total of 4,046 articles. Of these, only nine studies were case series, with the remainder being single case reports or small series of case reports that had fewer than nine patients. After

Fig. 1. Flow chart

