EJCRIM
European Journal
of Case Reports
in Internal Medicine

CONSTRICTIVE PERICARDITIS DUE TO CRYPTOCOCCUS NEOFORMANS IN AN ELDERLY IMMUNOSUPPRESSED PATIENT

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Received: 29/09/2025
Accepted: 29/09/2025
Published: 08/01/2026

Conflicts of Interests: The Authors declare that there are no competing interests.
Patient Consent: Written informed consent was obtained from the patient for publication of this case report and any accompanying images.
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How to cite this article: Pinto Silva C, Ramos F, Ribeiro M, Pereira VH. Constrictive pericarditis due to Cryptococcus neoformans in an elderly immunosuppressed patient. *EJCRIM* 2026;**13**:doi:10.12890/2026_005791

ABSTRACT

Introduction: Constrictive pericarditis is a rare and serious complication of pericardial diseases, typically associated with inflammatory or infectious causes. *Cryptococcus neoformans* involvement is exceptional outside the context of HIV but may occur in immunosuppressed patients.

Case description: We present a 72-year-old woman with rheumatoid arthritis on chronic corticosteroids who developed progressive dyspnoea, ascites and peripheral oedema. Imaging suggested constrictive pericarditis and pericardiectomy revealed *C. neoformans* infection. She received antifungal therapy (liposomal amphotericin B plus flucytosine, followed by fluconazole) with a favourable 12-month outcome.

Discussion: This case illustrates the importance of considering fungal aetiologies in immunosuppressed patients with pericardial disease. Pericardiectomy was both diagnostic and therapeutic. Antifungal therapy according to international guidelines ensured clinical success.

Conclusion: Cryptococcal pericarditis, though rare, should be considered in immunosuppressed patients with pericardial effusion or thickening. A combined approach with surgery and antifungals is essential.

KEYWORDS

Pericarditis, constrictive, cryptococcosis, *Cryptococcus neoformans*, immunosuppression, pericardiectomy

LEARNING POINTS

- Cryptococcal pericarditis is rare but should be suspected in immunosuppressed patients with pericardial effusion or thickening.
- Pericardiectomy is crucial as both a diagnostic and therapeutic intervention in constrictive pericarditis.
- Sequential antifungal treatment, in accordance with international guidelines, leads to favourable outcomes.

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INTRODUCTION/BACKGROUND

Constrictive pericarditis is characterised by chronic inflammation of the pericardium, leading to fibrosis and loss of elasticity, resulting in restrictive heart failure[1]. Common causes include tuberculosis, radiation therapy and prior cardiac surgery[2]. Fungal infections are responsible for a very small but clinically relevant fraction of these cases[3]. *Cryptococcus neoformans* is an encapsulated fungus found in the environment, recognised as the aetiological agent of cryptococcosis[4]. The disease predominantly presents as meningoencephalitis in patients with advanced immunosuppression, especially human immunodeficiency virus (HIV)[5]. Worldwide, cryptococcal meningitis causes an estimated 180,000 deaths annually[6]. Pericardial involvement is extremely rare, particularly in non-HIV-infected patients[7-10]. We report the case of a 72-year-old woman with rheumatoid arthritis on chronic corticosteroids who developed cryptococcal constrictive pericarditis, confirmed after pericardiectomy. This case is compared with the available literature and discussed in light of current international recommendations[4-6].

CASE DESCRIPTION

A 72-year-old woman from a rural area, with recurrent pericardial effusions since 2016 and long-term corticosteroid therapy, presented in February 2025 with decompensated right heart failure (ascites, pleural effusion, hepatic congestion) refractory to medical therapy.

She underwent subtotal pericardiectomy on 25 February. Pathology revealed a fibrotic thickened pericardium; microbiological culture grew *C. neoformans*. Serum cryptococcal antigen was positive (1:16). Cerebrospinal fluid analysis showed normal cell count, normal glucose, negative India ink and negative cultures.

Antifungal therapy was initiated on 13 March: induction with liposomal amphotericin B plus flucytosine for 14 days, followed by fluconazole 400 mg/day from 27 March. Maintenance therapy with fluconazole 200 mg/day was started on 22 May *(Table 1)*.

The postoperative course was complicated by transient iatrogenic pneumothorax, which resolved conservatively. A thoracic computed tomography (CT) scan on 14 April showed a stable 20 mm middle-lobe nodule, under further evaluation with PET-CT.

Date	Main event
30/11/2016	First pericardiocentesis for large pericardial effusion
15/02/2024	Symptomatic effusive-constrictive pericarditis
25/02/2025	Admission with refractory right heart failure; pericardiectomy
13/03/2025	Induction therapy with amphotericin B + flucytosine
27/03/2025	Fluconazole 400 mg/day (consolidation phase)
14/04/2025	Chest CT: stable pulmonary nodule
22/05/2025	Fluconazole 200 mg/day (maintenance phase)

Table 1. Timeline of major clinical events.

DISCUSSION

Constrictive pericarditis is a clinically challenging entity, often mistaken for restrictive cardiomyopathies[2,11]. Definitive diagnosis requires integration of clinical and imaging, and sometimes histopathological data. Pericardial involvement by *C. neoformans* is exceptional[7-10]. Dandachi et al. reviewed 39 published cases, mostly in transplant recipients, with high mortality especially without surgery[7]. More recent cases confirm atypical presentations and diagnostic difficulty[8,9]. Mann et al. described a cardiac transplant recipient, highlighting the importance of combined treatment[10]. International guidelines emphasise that treatment should include amphotericin B + flucytosine, followed by fluconazole[4-6]. Our case followed this regimen with favourable results. From a surgical perspective, pericardiectomy remains the definitive treatment[12,13]. Studies show that even in elderly patients, surgery can improve quality of life, though with increased risk[14].

CONCLUSION

Cryptococcal constrictive pericarditis is rare but should be suspected in immunosuppressed patients with pericardial effusion or thickening. Pericardiectomy is both diagnostic and therapeutic. Sequential antifungal therapy is essential for a favourable prognosis.

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