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Ergotism- a Forgotten Enemy

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Abstract

Background:

Ergot alkaloid medications are used for the treatment of migraine, vascular headache, control of PPH. Ergotism is an uncommon but serious condition caused by intense peripheral vasospasm following ergot alkaloid use. Although its incidence has declined, it may still present in patients using ergotamine-containing medications for migraine. Early recognition is crucial to prevent irreversible ischemic injury. Our case emphasizes the potential for complete reversibility of vascular changes if recognized early. This case highlights the importance of considering ergotism in patients with unexplained ischemia and a history of ergotamine use. Prompt diagnosis, discontinuation of the ergot and other vasoconstrictors, initiation of vasodilator therapy with sodium nitroprusside and timely consideration of endovascular intervention can prevent irreversible ischemia.

Keywords: Ergotism; Ergotamine; Acute limb ischemia; Vasospasm; Sodium nitroprusside.

Introduction

Atherosclerosis is present in the great majority of people with peripheral arterial disease. A small percentage of cases are caused by inflammatory artery illnesses, thrombotic disorders, or thromboembolism. With an incidence rate of 0.001 to 0.002%, ergotism in patients taking ergotamine formulations for recurring headaches is even less common. [1] Ergotism or “Saint Anthony’s fire” is a rare but potentially devastating complication of ergot alkaloid therapy for migraine, characterized by intense vasospasm that may precipitate peripheral ischemia and gangrene [2,3]. Although uncommon, this condition should be considered in cases of acute limb

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ischemia where common risk factors (like atherosclerosis) are absent but there is history of ergotamine use [2,4]. Early recognition and prompt intervention are critical to prevent irreversible outcomes.

The first-line management for suspected ergotism involves immediate discontinuation of the offending agent and initiation of vasodilatory therapy. Sodium nitroprusside, a potent direct arterial vasodilator, has been successfully used via continuous intra-arterial or intravenous infusion to reverse ergotamine-induced vasospasm and restore peripheral perfusion in several documented cases [3,5].

In this case report, we describe a 45-year-old woman who experienced acute bilateral lower-limb ischemia after short-term use of ergotamine–caffeine medication. With rapid diagnosis and administration of intravenous sodium nitroprusside, we achieved full restoration of pulses, underscoring the importance of timely therapeutic action in ergot-induced peripheral ischemia.

Informed Consent:

Informed consent was obtained from the patient for the purpose of publication.

Clinical case

A 45-year-old woman presented with a one-day history of severe burning pain and cramps in her left leg. Treatment at another hospital included intramuscular tramadol and IV calcium gluconate for the same. Following this, she acutely developed hypotension, which was managed with intravenous fluids and a noradrenaline infusion. She was then referred to our facility for further care.

On arrival, patient was conscious and responsive, still complaining of intense left leg pain. Her vital signs were: HR 110 /min, BP 150/90 mm Hg on noradrenaline at 2.6 µg/min, RR 20/min (regular, non-acidotic), and SpO_2 98% on 2 L/min oxygen. There was no fever, pallor, jaundice, pedal oedema, or lymphadenopathy. All peripheral extremities appeared cold, clammy, and dusky, with the lower limbs more affected than the upper. Bedside Doppler showed biphasic flow in all the peripherals.

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Table 1: Pulse

Pulse Site	Present / Palpable?	Volume / Quality
Carotids	Present	Good
Brachial	Palpable	Good
Femoral	Palpable	Good
Radial	Palpable	Feeble
Ulnar	Palpable	Feeble
Popliteal	Palpable	Good
Dorsalis Pedis (foot)	Not Palpable	— (Absent)
Posterior Tibial (ankle)	Not Palpable	— (Absent)

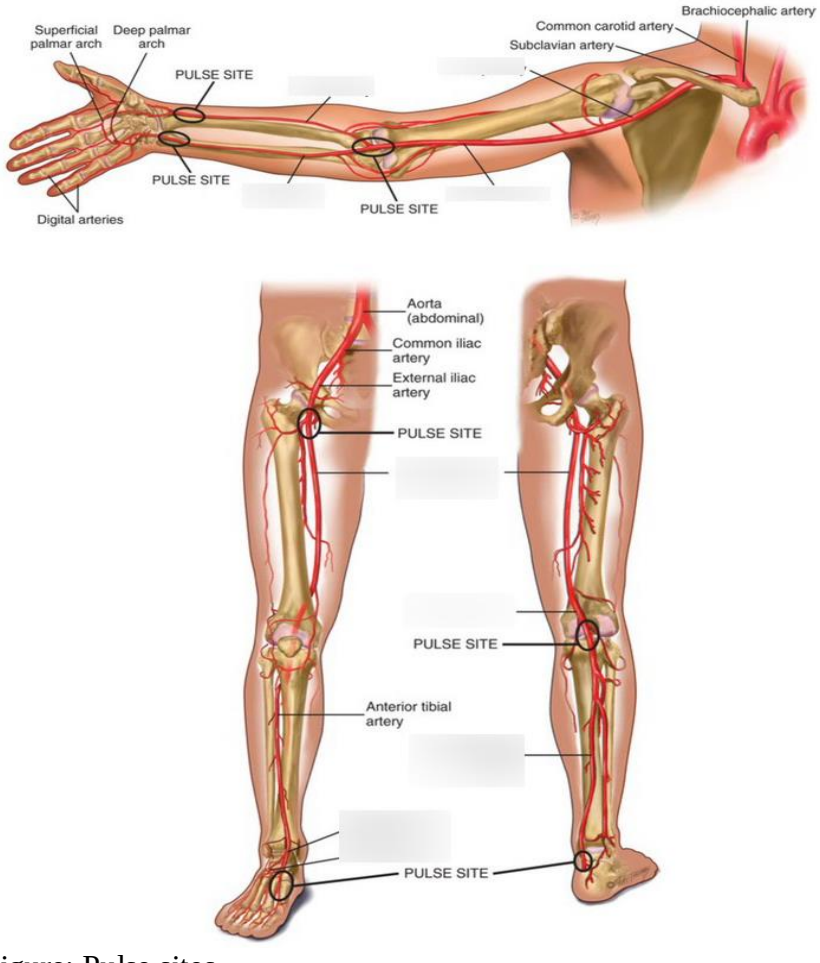

Figure: Pulse sites

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Past Surgical & Medication History

Ten days prior, she had undergone a laparoscopic right nephrectomy for a nonfunctional kidney; the perioperative period was uneventful, and she was discharged on postoperative day 4. Medications on admission included Tab. Thyronorm 50 µg once daily, Amlodipine 2.5 mg twice daily, Tab. Clonazepam 0.5 mg once daily at night.

Diagnostic Workup & Initial Management

Vascular surgeon opinion was obtained, and a therapeutic heparin infusion was initiated (500 units/mL at 2 mL/h). Laboratory results showed a marked leukocytosis (31,000 cells/mm³) and elevated lactate (4.1 mmol/L); all other parameters were within normal limits. A CT angiogram revealed occlusion of arterial blood flow distal to the bilateral superficial femoral artery (SFA) junction.

Figure 2: CT Angiogram shows occlusion of arterial blood flow distal to the bilateral superficial femoral artery (SFA) junction.

With this diagnosis of ongoing critical limb ischemia, the patient underwent an emergency left lower-limb endovascular procedure under general anaesthesia (due to ongoing anticoagulation-Heparinisation). Procedurally, it was uneventful; postoperative assessment showed restored peripheral pulses in the left lower limb, though other limbs remained cold and clammy. Further evaluation on postoperative day 1, the patient reported the history of occasional headaches self-managed herself with an over-the-counter medication taken off-label. A detailed history revealed chronic migraine managed with intermittent ergotamine-caffeine tablets (Migrall EC: ergotamine

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1 mg + caffeine 100 mg), taken for 4–5 days after discharge. This finding raised a strong suspicion for ergotism vasospastic ischemia induced by ergotamine. We promptly discontinued ergotamine and initiated an intravenous infusion of sodium nitroprusside, an arterial vasodilator. The infusion began at 0.4 µg/kg/min and was titrated up to 2 µg/kg/min, with careful monitoring of vitals, peripheral pulses, and limb warmth every 15 minutes. Within approximately 10 hours, peripheral pulses returned across all limbs and limb warmth gradually improved. Her vitals were stable throughtout and the nitroprusside infusion was discontinued gradually after 10 hours.

Discussion

Ergot, the sclerotia of *Claviceps purpurea* producing ergot alkaloids, can cause ergotism when ingested through contaminated grains such as rye or via medications containing ergotamine [6,7]. Historically, ergot derivatives have been used to manage vascular headaches, migraines, postpartum hemorrhage, and to hasten labor since the 1500s [8,9]. The primary pharmacological effect of ergot alkaloids is potent vasoconstriction via α-adrenergic receptor stimulation on vascular smooth muscle, which can be exacerbated by endothelial injury, catecholamines, and other vasoactive substances, potentially leading to thrombosis, ischemia, or vessel wall fibrosis [10–13]. Rectal administration, particularly of ergotamine caffeine suppositories, results in more efficient absorption than oral intake, with the liver as the primary site of metabolism. Although ergot-induced vasospasm can affect any vascular bed, it most commonly involves the lower limbs, occasionally resulting in acute limb ischemia or gangrene [3,4].

In our patient, sudden burning pain, dusky extremities, elevated lactate, and CT angiography findings in the context of recent ergotamine–caffeine (Migrall EC) use confirmed the diagnosis of ergotism. Immediate cessation of the offending agent is essential, and in severe ischemia, pharmacologic vasodilation is required. Sodium nitroprusside, administered intravenously and titrated from 0.4 to 2 µg/kg/min under careful monitoring, restored peripheral perfusion within 10 hours [3,14]. Alternative agents, including calcium channel blockers, tolazoline, and prostaglandin E1, have variable efficacy, while refractory cases may necessitate surgical interventions such as sympathectomy or angioplasty [4,15]. Delayed diagnosis or inadequate therapy has been associated with irreversible tissue loss and amputation, emphasizing the importance of early recognition and intervention [15].

This case highlights three critical points: (i) clinicians should maintain a high index of suspicion for ergotism in unexplained acute limb ischemia, especially with a history of ergot use; (ii) prompt initiation of sodium nitroprusside infusion can prevent irreversible ischemic injury; and (iii) vigilant, multidisciplinary management with frequent reassessment is essential to optimize outcomes.

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Conclusion

Ergotism remains a rare but serious cause of acute limb ischemia, often overlooked in the modern era due to the reduced use of ergot alkaloids. However, as this case illustrates, patients may still present with life-threatening vasospasm following ergotamine intake. Early recognition of the condition, prompt withdrawal of the offending agent, and initiation of targeted vasodilator therapy are critical to preventing irreversible ischemic damage.

Sodium nitroprusside infusion has proven to be a safe and effective therapeutic option for reversing ergotamine-induced vasospasm and restoring peripheral perfusion.
Multidisciplinary management, vigilant hemodynamic monitoring, and timely intervention remain the cornerstones of successful outcomes. This case highlights the need for clinicians to maintain a high index of suspicion for ergotism in atypical presentations of acute ischemia and reinforces the therapeutic value of sodium nitroprusside in such scenarios.

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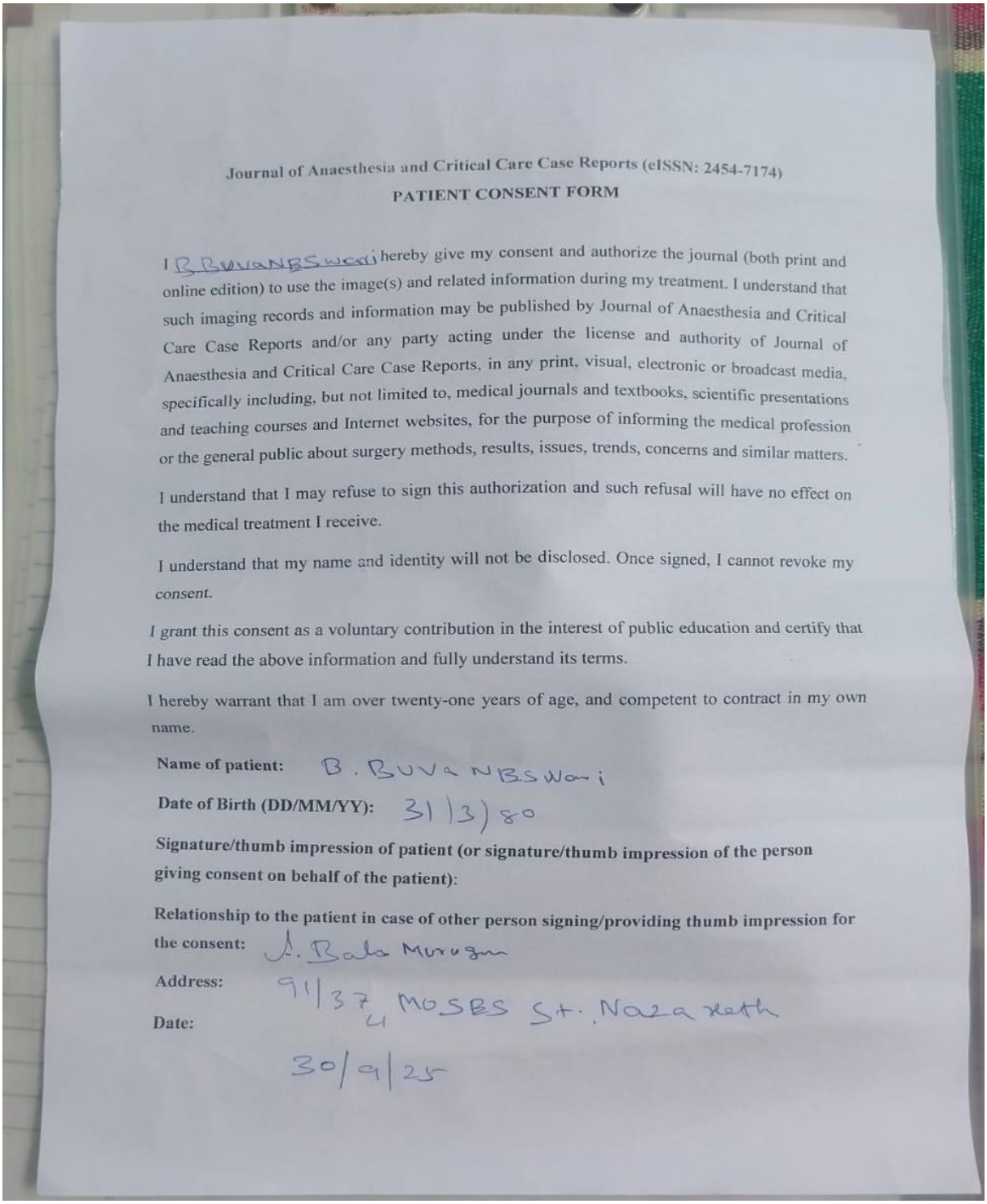
Informed consent



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PATIENT CONSENT FORM

I B.BuvaNBSwami hereby give my consent and authorize the journal (both print and online edition) to use the image(s) and related information during my treatment. I understand that such imaging records and information may be published by Journal of Anaesthesia and Critical Care Case Reports and/or any party acting under the license and authority of Journal of Anaesthesia and Critical Care Case Reports, in any print, visual, electronic or broadcast media, specifically including, but not limited to, medical journals and textbooks, scientific presentations and teaching courses and Internet websites, for the purpose of informing the medical profession or the general public about surgery methods, results, issues, trends, concerns and similar matters.

I understand that I may refuse to sign this authorization and such refusal will have no effect on the medical treatment I receive.

I understand that my name and identity will not be disclosed. Once signed, I cannot revoke my consent.

I grant this consent as a voluntary contribution in the interest of public education and certify that I have read the above information and fully understand its terms.

I hereby warrant that I am over twenty-one years of age, and competent to contract in my own name.

Name of patient: B. BuvaNBSwami

Date of Birth (DD/MM/YY): 31/3/80

Signature/thumb impression of patient (or signature/thumb impression of the person giving consent on behalf of the patient):

Relationship to the patient in case of other person signing/providing thumb impression for the consent: J. Bala Murugan

Address: 91/37 MOSBS St. Nazareth

Date: 30/9/25

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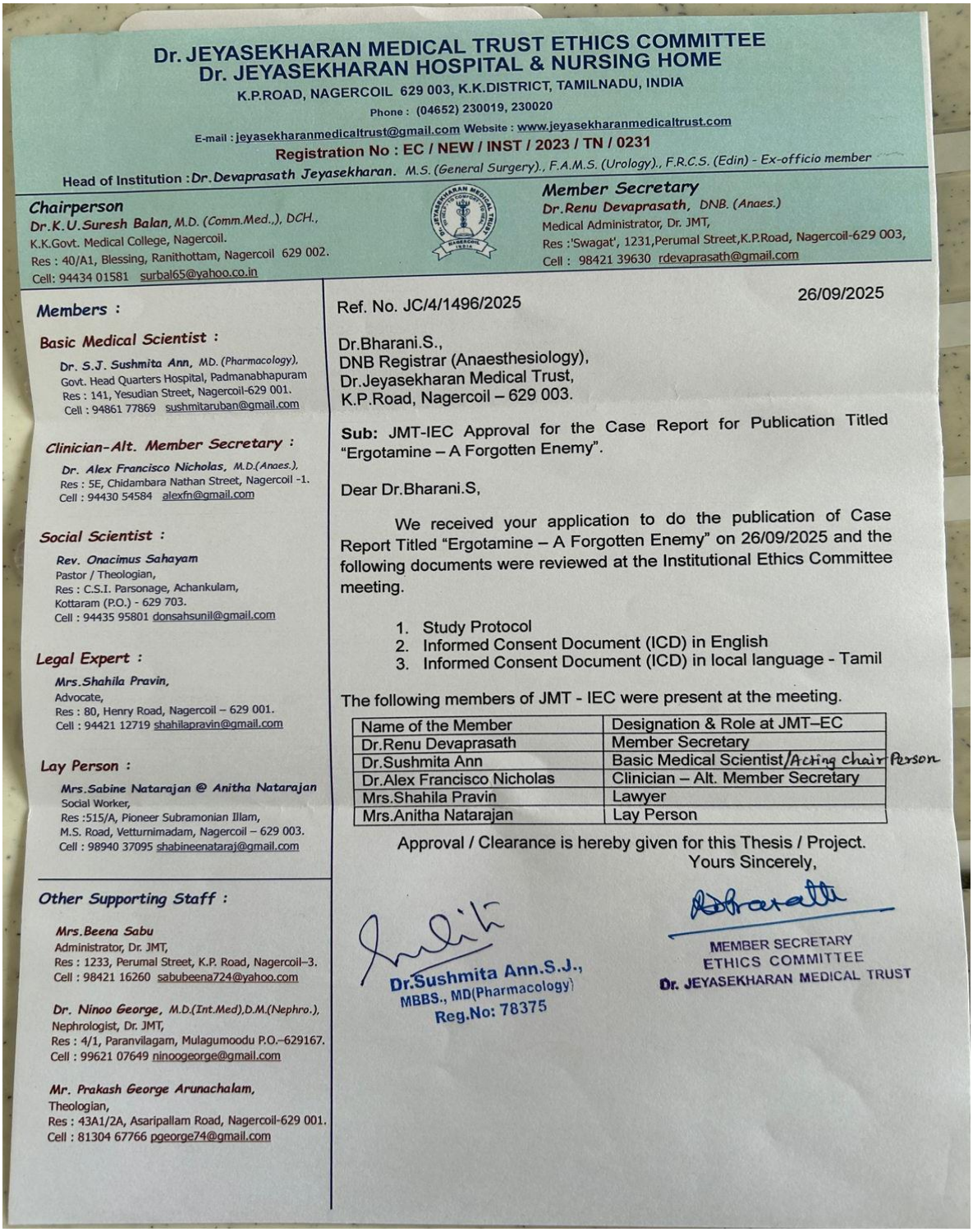
Ethical committee approval



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Sub: JMT-IEC Approval for the Case Report for Publication Titled "Ergotamine – A Forgotten Enemy".

Dear Dr.Bharani.S,

We received your application to do the publication of Case Report Titled "Ergotamine – A Forgotten Enemy" on 26/09/2025 and the following documents were reviewed at the Institutional Ethics Committee meeting.

1. Study Protocol
2. Informed Consent Document (ICD) in English
3. Informed Consent Document (ICD) in local language - Tamil

The following members of JMT - IEC were present at the meeting.

Name of the Member	Designation & Role at JMT–EC
Dr.Renu Devaprasath	Member Secretary
Dr.Sushmita Ann	Basic Medical Scientist/Acting chair Person
Dr.Alex Francisco Nicholas	Clinician – Alt. Member Secretary
Mrs.Shahila Pravin	Lawyer
Mrs.Anitha Natarajan	Lay Person

Approval / Clearance is hereby given for this Thesis / Project.

Yours Sincerely,

Dr.Sushmita Ann.S.J.,
MBBS., MD(Pharmacology)
Reg.No: 78375

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