International Surgery Journal
Hassanesfahani M et al. Int Surg J. 2026 Apr;13(4):660-662
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

Case Report

DOI: https://dx.doi.org/10.18203/2349-2902.isj20260856

Propofol-induced anaphylaxis with severe angioedema during colonoscopy: a case report

Maryam Hassanesfahani[1]*, Mrinalini Alla[1], Michelle Evans[2], Noman Khan[2]

[1]Department of General surgery, Flushing Hospital Medical Centre, USA
[2]Department of Anaesthesiology, Flushing Hospital Medical Centre, USA

Received: 03 February 2026
Accepted: 16 March 2026

***Correspondence:**
Dr. Maryam Hassanesfahani,
E-mail: maryam.h.esfahani82@gmail.com

ABSTRACT

Propofol is widely used for procedural sedation and anesthesia due to its rapid onset and recovery. Although regarded as safe, it can rarely provoke severe allergic reactions, including anaphylaxis. Because these events are infrequent, recognition may be delayed, particularly when clinical features are atypical. We described a case of propofol-induced anaphylaxis during outpatient colonoscopy in a 66-year-old man with no known allergies. The patient developed sudden desaturation, hypotension, and progressive facial and cervical angioedema, initially misinterpreted as bowel perforation due to associated abdominal distention. Multiple intubation attempts failed, necessitating an emergent tracheostomy. This case emphasizes the need for early suspicion of anaphylaxis in unexplained perioperative collapse, prompt administration of epinephrine, airway preparedness, and post-event allergy evaluation to confirm the diagnosis and prevent re-exposure.

Keywords: Propofol, Anaphylaxis, Angioedema, Hypersensitivity

INTRODUCTION

Propofol is a short-acting intravenous anesthetic routinely used in operating rooms and endoscopy suites. Its favorable pharmacokinetic profile has made it one of the most common agents for both induction and maintenance of anesthesia. Severe hypersensitivity reactions to propofol are uncommon, with estimated incidence around 1 in 60,000 anesthetics.[1] Nonetheless, perioperative anaphylaxis can be catastrophic, with reported mortality rates of 3-9%.[2]

Earlier formulations contained Cremophor et al a castor oil derivative known to trigger allergic reactions. Modern formulations use refined soybean oil and egg lecithin as emulsifiers. These components are highly purified, and studies have shown no significant increase in reactions among patients with egg, soy, or peanut allergies.[3] Most documented cases of propofol anaphylaxis are directed at the propofol molecule itself rather than these additives.

We reported a rare case of severe propofol anaphylaxis manifesting with airway edema and hypotension during routine colonoscopy, highlighting diagnostic challenges and management strategies.

CASE REPORT

A 66-year-old male underwent uneventful screening colonoscopy with one successful polypectomy. However, during withdrawing the scope the patient began desaturating to 85%. Oxygen support was initiated with ambo-bag and face mask for about 30 minutes with no success. The patient was then transferred by EMS. Upon arrival, he was somnolent, blood pressure (BP): 80/55, heart rate (HR):130, and oxygen saturation (O_2sat) on a 6 l nasal cannula was 91%. He was found to have severe abdominal distention and was tympanic on percussion. We were initially concerned about colon perforation during the procedure. Given his worsening respiratory distress and mental status, a decision was made to intubate the patient

along with giving 2 l of normal saline, intramuscular epinephrine, and one dose of Solu-Medrol. The blood pressure initially responded to 140/80 however he remained tachycardic to 110-120. Oxygen saturation was 100% after intubation. No free air was seen on the initial chest XR which was confirmed by subsequent CT scan.

The head CT did not show any new event. However, chest CT revealed the tip of the endotracheal tube in the larynx. Meanwhile the patient began desaturating again down to 60-70%. The respiratory therapist and anesthesiology team tried to fix the tube position however multiple attempts were unsuccessful due to severe airway narrowing. At this time, the patient developed significant head and neck edema including lips, eyelids, and neck associated with cardiopulmonary collapse with BP: 70/40, HR:140, O_2sat: 70. Bag mask ventilation was initiated and the patient underwent emergent airway placement in the ER with immediate definitive tracheostomy in the operating room. The patient was transferred to the medical ICU in stable condition. Upon further questioning, he had a medical history of goiter, ankylosing spondylitis. and hypertension but on no medication currently. He had no known allergy and he denied any history of asthma or allergic reactions to eggs, soybean, and nuts. Perioperative anaphylaxis is largely a clinical diagnosis but can be confirmed with targeted testing. In our patient, a serum tryptase level obtained within two hours of the reaction was elevated, supporting mast cell–mediated anaphylaxis. As part of his outpatient allergy workup, a skin prick test with propofol was performed and yielded a positive result, confirming propofol as the causative agent. Intradermal testing was not required given the definitive skin prick result. Prior to discharge, tracheostomy decannulation was done successfully.

DISCUSSION

Rarity and mechanism

Propofol-induced anaphylaxis is uncommon but well-documented in the literature. It accounts for roughly 1-2% of perioperative anaphylaxis cases.[1] The reaction is usually mediated by IgE antibodies against the propofol molecule-specifically its phenol or di-isopropyl side chains- rather than the emulsifying components. Multiple studies confirm that egg and soy allergies are not contraindications to propofol use, as allergenic proteins are removed during refinement.[3]

Clinical presentation

Most reactions occur within minutes of administration and present with hypotension, tachycardia, bronchospasm, and cutaneous manifestations such as urticaria or angioedema.[4] Atypical cases may lack skin signs or bronchospasm, complicating recognition. Our patient's abdominal distention- likely from prolonged bag-mask ventilation- initially mimicked colonic perforation, delaying suspicion of anaphylaxis.

Diagnosis

Perioperative anaphylaxis is diagnosed clinically, but confirmation is aided by laboratory and allergy testing. Serum tryptase levels should be drawn within 1-2 hrs of the event and again at baseline (24 hrs) to document mast cell activation.[5] Definitive identification of the causative agent is achieved through skin prick and intradermal testing performed 4-6 weeks post-event.[6]

Management

Immediate epinephrine administration is the cornerstone of treatment. In the perioperative setting, intravenous boluses of 50-100 µg are used for hypotension, escalating to 1 mg in cardiac arrest.[4] High-flow oxygen, aggressive IV fluid resuscitation, and airway management are essential. Severe angioedema, as in our case, may necessitate emergent surgical airway when intubation is not feasible. Antihistamines and corticosteroids may be given as adjuncts but should never delay epinephrine

Lessons from the case

This case highlights several key points- (a) anaphylaxis should be suspected in any unexplained perioperative cardiovascular collapse or airway edema, even without cutaneous signs; (b) abdominal distention from ventilation can mimic procedural complications, potentially delaying recognition; (c) rapid escalation to definitive airway management- including surgical airway- can be lifesaving in severe angioedema; ansd (d) post-event allergy evaluation is essential to confirm diagnosis and prevent recurrence.

CONCLUSION

Propofol-induced anaphylaxis is rare but potentially fatal. Clinicians must maintain vigilance during sedation and anesthesia, promptly administer epinephrine, and secure the airway when signs of airway compromise appear. Post-event allergy testing and clear documentation are critical to avoid re-exposure and ensure safe future anesthetic care.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Ramírez CE, Domingo MV, Font AP, Esteller PG, Marchuet MJC, Foix MPS, et al. Do cross-food allergies to propofol exist? Anesth Pain Med (Seoul). 2022;17:381-5.
2. Harper NJN, Cook TM, Garcez T, Farmer L, Floss K, Marinho S, et al. Anaesthesia, surgery, and life-threatening allergic reactions: epidemiology and clinical features of perioperative anaphylaxis in the 6th national audit project (NAP6). Br J Anaesth. 2018;121:159-71.

3. Asserhøj LL, Mosbech H, Krøigaard M, Garvey LH. No evidence for contraindications to the use of propofol in adults allergic to egg, soy or peanut. Br J Anaesth. 2016;116:77-82.
4. You BC, Jang AS, Han JS, Cheon HW, Park JS, Lee JH, et al. A case of propofol-induced oropharyngeal angioedema and bronchospasm. Allergy Asthma Immunol Res. 2012;4(1):46-8.
5. Ebo DG, Fisher MM, Hagendorens MM, Bridts CH, Stevens WJ. Anaphylaxis during anaesthesia: diagnostic approach. Allergy. 2007;62(5):471-87.
6. Koul A, Jain R, Sood J. A critical incident report: propofol triggered anaphylaxis. Indian J Anaesth. 2011;55:530-3.

Cite this article as: Hassanesfahani M, Alla M, Evans M, Khan N. Propofol-induced anaphylaxis with severe angioedema during colonoscopy: a case report. Int Surg J 2026;13:660-2.