

## An unusual cause of anaphylaxis during surgery

Sir,

A 48-year-old female was planned for left retroperitoneal laparoscopic donor nephrectomy. There was no previous history regarding any major illness or any allergic reaction to any drug or food item. On the day of surgery, intravenous Ringer's lactate was started and all routine monitors applied. Intravenous glycopyrrolate 0.004 mg/kg, fentanyl 2 mg/kg, ranitidine 50 mg and ondansetron 8.0 mg and the antibiotic cefotaxime 1.0 gm were given intravenously. Induction of anesthesia was done with intravenous thiopentone 350 mg, and intubation was facilitated by suxamethonium bromide 100 mg. Anaesthesia was maintained with controlled ventilation using nitrous oxide, oxygen, isoflurane, and vecuronium bromide. Patient's pulse was 80/min and BP was 130/82 mm of Hg. As patient was donor for kidney transplantation, 10-15 ml/kg/hr intravenous fluids like Ringer's lactate solution, 500 ml gelofusine solution, and 1.0 gm/kg mannitol before clamping the renal vessels was our routine protocol. Intravenous gelofusine was started, and patient was placed on the left lateral position for surgery. Fifteen minutes after the gelofusine infusion (100 ml), atrial premature complexes were observed on ECG. Additional dose of a muscle relaxant was given, and isoflurane concentration was increased to rule out lighter plane of anesthesia. There was increased peak airway pressure on the ventilator from 25 to 50 cm of H<sub>2</sub>O. Oxygen saturation decreased from 100% to 96%. The endotracheal tube and circuits were checked for obstruction. Chest auscultation revealed bilateral extensive rhonchi. At the same time, we noticed flushing of both

hands. Meanwhile, the systolic blood pressure fell to 60 mm of Hg systolic and the pulse rose to 165/minute. Suspecting an anaphylactic reaction, immediately 100% O<sub>2</sub> was given with positive pressure ventilation. Intravenous drugs like hydrocortisone 200 mg, chlorpheniramine, mephenteramine 30 mg and 0.3 mg adrenaline (1:10000) were given. The blood pressure was maintained with vasopressors. Nebulization of ipratropium and salbutamol was administered. The surgery was postponed. As all anesthetic drugs and antibiotics were given 25 minutes before reaction, immediate hypersensitivity to Gelofusine was suspected. Gelofusine was immediately discontinued and fast intravenous ringer lactate was commenced. Within a period of 25 min, lung resistance decreased and systolic blood pressure returned to normal. Hand flushes disappeared. Patient was extubated and shifted to the ICU for observation. Four weeks after the incidence, skin reactions to the antibiotic, anesthetic drugs used and gelofusine (0.5 ml each of 1:10 dilution) were tested with a normal saline control. Gelofusine showed a reaction of 40 mm (skin wheal), confirming the diagnosis [Figure 1]. The patient was given a Medical Alert stating "allergic to Gelofusine."

Colloid plasma expanders are widely used during major surgery and play a key role in resuscitation of the severely hypovolemic patient.<sup>[1]</sup> Gelofusine is 4% modified fluid gelatin. Colloids have been recognized to cause up to 4% of all perioperative anaphylactic reactions.<sup>[2,3]</sup> Diagnosis of anaphylaxis during anesthesia may be due to different anesthetic drugs, antibiotics, latex or colloids, which can elicit heterogeneous allergic and non-allergic reactions with immediate or more delayed onset. None of the available diagnostic tests demonstrates absolute accuracy. Most anesthetic agents can cause vasodilatation, hypotension, and potential cardiopulmonary dysfunction. Several reports exist describing anaphylactic reaction to plasma expanders including Gelofusine, Haemaccel, and Dextran,<sup>[4]</sup> some of which resulted in fatalities. Dubrey *et al.*<sup>[5]</sup> reported severe anaphylaxis to gelofusine during a trans-thoracic echo bubble study. In our case, severe reaction occurred 15 minutes after gelofusine infusion, which was eventually confirmed by intradermal test. A high index of suspicion and prompt diagnosis should ensure successful management of anaphylaxis.



Figure 1: Skin reaction to Gelofusine in comparison to normal saline

**Geeta Parikh, Veena Shah, Deepika Singh,  
Prachi Kadam, Nirav Kharadi**

Departments of Anesthesia and Critical Care, Smt. K. M. Mehta and Smt. G. R. Doshi Institute of Kidney Diseases and Research Center, Dr. H. L. Trivedi Institute of Transplantation Sciences, Civil Hospital Campus, Ahmedabad, Gujarat, India

**Correspondence:**

Dr. Geeta P. Parikh,  
28/Yogashram Society, Near Shyamal Char Rasta,  
Ahmedabad - 380 015, Gujarat, India.  
E-mail: gpp2011@live.in

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