Purpose: Vital blue dyes are increasingly used by the surgeons for lymphatic mapping of sentinel lymph node biopsies such as melanoma and breast cancer. These dyes may cause allergic reactions with an incidence of 0.6-2.7%. We present a case of anaphylaxis in a patient that was found to have sensitivities to several medications but which was ultimately linked to the administration of patent blue.

Clinical Features: Consent for publication was obtained from the patient. A 43 year old woman presented for melanoma excision of the upper arm and sentinel node biopsy from right axilla. General anesthesia was induced with fentanyl, propofol, rocuronium, and morphine without incident. Patent blue was subsequently injected at the surgical site. Twenty minutes after the patent blue administration, she developed severe hives in the upper arm, trunk, and abdomen. The patient was hemodynamically stable and initial treatment consisted of antihistamines and hydrocortisone. The surgical procedure was completed and the patient was transported to PACU. In PACU, her symptoms worsened to include dysphonia, swollen eyelids and marked increase in hives. She was treated with epinephrine boluses (total of 50 mcg) which produced relief in the swelling and hives and her phonation normalized. A subcutaneous dose of epinephrine 150 mcg was given for sustained effect. The patient was discharged from PACU after 6 hours symptom-free. Six weeks postoperatively an allergy specialist performed skin prick and intradermal testing. Positive tests were noted to morphine, rocuronium, and patent blue (figure 1).

Conclusion: Vitals blue dyes such as patent blue, isosulfan blue and methylene blue are distinct chemical compounds but are used for the same purpose during surgery. The incidence of IgE-mediated hypersensitivity to patent blue is 1.6% with severe reactions found in 0.5% of cases. This is in contrast to the total incidence of anaphylaxis under general anesthesia of 0.01%, most commonly attributed to neuromuscular blockers, antibiotics or latex. Although the patient demonstrated positive skin tests to three drugs, the timing of the reaction in relation to the injection of patent blue suggests that it was the likely cause of the anaphylaxis. In fact this patient had another anesthetic prior to her allergy testing during which she received both morphine and rocuronium without incident. This case illustrates the importance of referring cases of intra-operative anaphylaxis for assessment by an allergy specialist and highlights the potential for anaphylactic reactions to patent blue. Prophylactic treatment with antihistamines and corticosteroids has been shown to decrease the severity of allergic reactions to patent blue and may be considered in patients requiring its use.