

A rash during surgery: rounding up the usual suspects

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DESCRIPTION

A 72-year-old woman with a medical history of allergic rhinitis, food allergy, non-IgE-mediated reactions to medications, spinal stenosis and previous laminectomy presented to our institution for thoracic decompression laminectomy, facetectomy and foraminotomy. During the procedure, 5 min after chlorhexidine application and prior to surgical incision, she developed a blanching urticaria on her back (figure 1). The patient had no associated angio-oedema, hypotension, respiratory failure or anaphylaxis.

Surgery was cancelled. She was treated with diphenhydramine 50 mg intravenously and dexamethasone 4 mg intravenously once. The urticaria resolved within 2 h (figure 1). The patient denied adverse reactions during previous surgeries. Anaesthesia records revealed she had received cefazolin and ciprofloxacin preoperatively, as well as fentanyl, lidocaine, midazolam, propofol and rocuronium after induction of general anaesthesia but prior to her reaction. Laboratory workup showed tryptase level within normal limits (<1.0 µg/L) and negative serum-specific latex IgE (<0.35 KU/L). A repeat tryptase was within normal limits 24 h after her initial reaction.

The patient was evaluated in the allergy outpatient clinic within 4 weeks of the initial reaction. Skin testing to all suspected agents was non-diagnostic: fentanyl, lidocaine, midazolam, propofol, rocuronium, penicillin G, prepen, cefazolin, levofloxacin and chlorhexidine gluconate 1%/4% were included in the evaluation. Owing to the concern of non-IgE-mediated release of mediators¹ and the possibility of false negatives on skin testing, the anaesthesia team was recommended to avoid chlorhexidine in future surgeries.

The patient underwent a repeat surgery with the use of povidone-iodine as an alternative antiseptic agent. There were no further adverse reactions.

Learning points

- ▶ Allergic reactions during the anaesthetic period are associated with morbidity and mortality. They represent a diagnostic challenge and are often underestimated since early signs of allergic reactions, including hypotension, tachycardia and difficulty with controlled ventilation, can easily mimic the postanaesthesia induction period. A careful medical history with a time line of events, review of medications used prior and during anaesthesia (including antiseptics), serum-specific latex IgE level and tryptase level are tools that can help elucidate this diagnosis.^{1 2}
- ▶ Incidence of anaphylaxis in the perioperative period has been estimated between 1:4000 and 1:20 000.¹ There is a geographical difference when reporting aetiologies of allergic reactions in anaesthesia due to variability in diagnostic skin testing around the world. However, the most common implicated agents in allergic reactions during anaesthesia are neuromuscular blocking agents, followed by antibiotics and latex.^{1 2} The prevalence of chlorhexidine allergic reactions during anaesthesia is unknown.³ The pathogenesis of allergic reactions during anaesthesia include IgE-mediated (eg, antibiotics) or non-IgE-mediated mechanisms, such as direct mast cell/basophil degranulation (eg, induction agents).¹
- ▶ Antiseptic agents used during anaesthesia, such as chlorhexidine and povidone-iodine, are often overlooked³ and should always be included during immediate skin testing for anaesthetic reactions. Epinephrine use is key in anaphylactic reactions during anaesthesia.¹



Figure 1 Blanching urticaria (A) on patient's back 5 min after application of antiseptic agent. Patient's back (B) with complete resolution of urticaria within an hour and 45 min.



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REFERENCES

1 Mertes PM, Tajima K, Regnier-Kimmoun MA, *et al*. Perioperative anaphylaxis. *Med Clin North Am* 2010;94:761–89, xi.

2 Mertes PM, Demoly P, Malinovsky JM. Hypersensitivity reactions in the anesthesia setting/allergic reactions to anesthetics. *Curr Opin Allergy Clin Immunol* 2012;12:361–8.

3 Opstrup MS, Malling HJ, Kroigaard M, *et al*. Standardized testing with chlorhexidine in perioperative allergy—a large single-centre evaluation. *Allergy* 2014;69:1390–6.

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