



POSTER PRESENTATION

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Prolonged elevation of serum tryptase resulting from intraoperative anaphylaxis to methylene blue

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Background

Intraoperative anaphylaxis during sentinel lymph node biopsy is a well known phenomenon occurring with administration of patent blue and isosulfan blue dyes, with an incidence of 2.2% and 1.1%, respectively (1,2). Methylene blue has been reported as being a safer alternative with only a few case reports demonstrating anaphylaxis and large studies demonstrating no incidence of anaphylaxis in 224 patients (3,2).

Case report

A 62 year old female undergoing sentinel lymph node biopsy and right lumpectomy was administered methylene blue alongside anaesthetics. Two minutes after administration of methylene blue, the patient entered anaphylactic shock with hypotension, discolouration, and angioedema. Fluid, steroids, and vasopressors were administered and the patient stabilized, at which point the operation continued. Serum taken an hour after anaphylaxis demonstrated a tryptase of 34 ng/ml. A sample six hours later demonstrated prolonged elevation of tryptase at 58 ng/ml. A baseline sample was within normal limits (<12 ng/ml) at 3 ng/ml. Skin prick and intradermal testing was negative for penicillin, ancef, latex, rocuronium, and propofol. Intradermal testing, however, was positive for methylene blue at 1/10, although a non-irritating concentration has yet to be established.

Discussion

Serum tryptase peaks at one to two hours post anaphylaxis with a subsequent half-life of two hours (4). We

demonstrate tryptase levels that increase with time, rather than decrease, subsequent to exposure to methylene blue. Serum tryptase levels in response to methylene blue anaphylaxis have not been reported previously.

Conclusion

Methylene blue can cause anaphylaxis with a prolonged elevation of serum tryptase levels.

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References

1. Haque R, Wagner A, Whisken J, Nasser S, Ewan P: **Anaphylaxis to patent blue V: a case series and proposed diagnostic protocol.** *Allergy* 2009, **65**:396-400.
2. Teknos D, Ramcharan A, Oluwole S: **Pulmonary edema associated with methylene blue dye administration during sentinel lymph node biopsy.** *J Natl Med Assoc* 2008, **100**:1483-1484.
3. Jangjoo A, Forghani M, Mehrabibahar M, Sadeghi R: **Anaphylaxis reaction of breast cancer patient to methylene blue during breast surgery with sentinel node mapping.** *Acta Oncologica* 2010, **46**:877-878.
4. Schwartz L, Yunginger J, Miller J, Bokhari R, Dull D: **Time course of appearance and disappearance of human mast cell tryptase in the circulation after anaphylaxis.** *J Clin Invest* 1989, **83**:1551-1555.

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