



Figure 3 A suction splitter and suction outlet socket.

the above situations. We performed this three times in each case, recorded as T1, T2 and T3 respectively. We compared the results using dependent paired-sample t-tests.

The maximum mean (SD) negative pressure generated when no suction splitter was present was -73.3 (1.8) kPa compared with -43.4 (7.2) kPa when a splitter was present and the surgical suction unit was turned on ($p < 0.001$). The mean (SD) time taken to suction 500 ml water was 9.7 (1.0) s at T1, 9.8 (0.9) s at T2, and 13.3 (1.1) s at T3 ($p < 0.001$ compared with T1 and T2).

The splitter devices carry the following manufacturers warning label on them: "Users are advised to establish adequacy of plant source capacity, flow and pressure for intended usage of this unit". Our

hospital's centralised suction system complies fully with the Department of Health's Best Practice Guidance concerning vacuum generation at the wall outlets. These regulations imply that where a surgeon and anaesthetist require suction apparatus simultaneously, then separate vacuum wall outlets should be used [4].

The use of suction splitters to provide a parallel surgical suction unit significantly reduces the degree of negative pressure suction available to the anaesthetist. We would therefore recommend that they should be avoided in the operating theatre. If such suction splitter devices are in clinical use then the surgical suction units must not be turned on during induction or emergence of anaesthesia, or whenever high suction efficacy is required.

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References

1. National Patient Safety Agency. *Airway Suction Equipment: Signal*. <http://www.nrls.npsa.nhs.uk/resources/?EntryId45=94845> (accessed 02/08/2011).
2. Al-Shaikh B, Stacey S. *Essentials of Anaesthetic Equipment*, 3rd edn. Oxford: Churchill Livingstone, ElsevierHealth, 2007.
3. Davis PD, Kenny GNC. *Basic Physics and Measurement in Anaesthesia*, 5th edn. Oxford: Butterworth Heinemann, Elsevier-Health, 2003.
4. Department of Health. *Medical Gases; Health Technical Memorandum 02-01. Medical gas pipeline systems. Part A: Design, Installation, Validation and Verification*. London: Department of Health, 2006.

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Anaphylaxis to dye during breast surgery

We read with interest Dr Robinsons' recent letter concerning anaphylaxis to dye during breast surgery [1]. She reported a high incidence of anaphylaxis to Patent Blue V dye (Guerbet, Cedex, France) in a small number of patients over a 21-month period, compared with the reported incidence of 0.86% allergic reactions to Patent Blue V dye from the combined datasets of the ALMANAC trial and NEW START training programme ($n = 7917$) [2]. These

patients were given either 2 ml aqueous solution of 2.5% Patent Blue V diluted to 5 ml with saline 0.9% or 2 ml undiluted patent blue V dye. It has been shown that there is a trend towards fewer allergic reactions with smaller volumes of blue dye, with no difference in the success of sentinel lymph node identification with dye volumes of 1–5 ml [3]. Considering the high incidence of allergic reactions, could Dr Robinson's figures relate to higher volume of blue dye usage?

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References

1. Robinson L. Anaphylaxis to dye during breast surgery. *Anaesthesia* 2011; **66**: 841–2.
2. Barthelmes L, Goyal A, Newcombe RG, McNeill F, Mansel RE. Adverse reactions to patent blue V dye - the NEW START and ALMANAC experience. *European Journal of Surgical Oncology* 2010; **36**: 399–403.
3. King TA, Fey JV, Van Zee KJ, et al. A prospective analysis of the effect of blue-dye volume on sentinel lymph node mapping success and incidence of allergic reactions in patients with breast cancer. *Annals of Surgical Oncology* 2004; **11**: 535–41.

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A reply

Thank you; the dose used at our institution is 2 ml of neat 2.5% Patent Blue V dye injected around the breast areola as in the NEW START and ALMANAC programmes [1]. Iosul-

phan blue was used in the paper by King et al. [2] and their conclusion stated “a non significant trend towards fewer allergic reactions with smaller volumes of the blue dye.”

If Patent Blue Dye anaphylaxis is IgE-mediated then even smaller volumes of dye could trigger an allergic reaction in a susceptible individual.

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References

1. Barthelmes L, Goyal A, Newcombe RG, McNeill F, Mansel RE. Adverse reactions to patent blue V dye - the NEW START and ALMANAC experience. *European Journal of Surgical Oncology* 2010; **36**: 399–403.
2. King TA, Fey JV, Van Zee KJ, et al. A prospective analysis of the effect of blue-dye volume on sentinel lymph node mapping success and incidence of allergic reactions in patients with breast cancer.

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Failure of glass prefilled syringe

We wish to highlight the failure of a 10-ml glass prefilled syringe of 1:10 000 adrenaline used during a cardiac arrest (Aurum Pharmaceuticals Ltd, Romford, UK). During the attempted administration of a second dose, it was impossible to fit the prefilled syringe to the injection port of the patient's intravenous cannula (BD Venflon, Becton Dixon, Oxford, UK). At this point, the cause was not clear, so an alternative cannula was used. Following return of spontaneous circulation and stabilisation of the patient, we found that the tip of the previous adrenaline syringe had snapped off in the cannula's injection port (Fig 4). This could have had serious consequences including injury

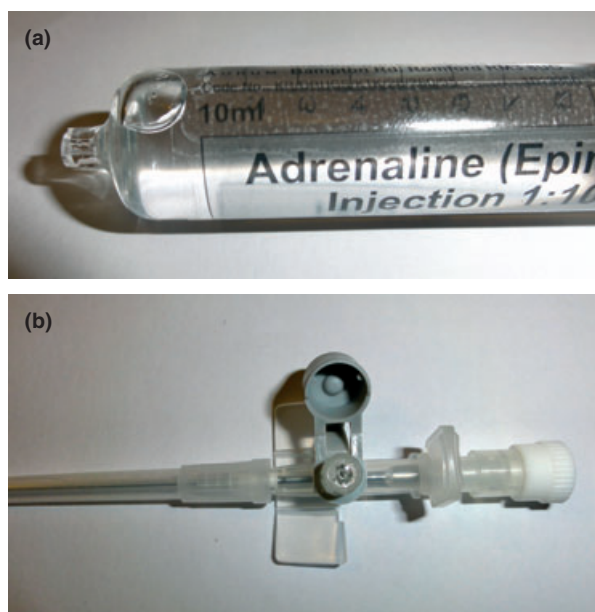


Figure 4 (a) Syringe with broken tip and (b) intravenous cannula with broken glass syringe tip in the injection port.