In the wake of current affairs and alarming statistics in the UK involving allergies and anaphylactic deaths [1,2], we propose an alteration to the preoperative assessment of allergies.

Medical professionals should note that allergy is the most common chronic disease in Europe [3]. Within Europe, the UK has the greatest allergy prevalence, and in the 20 years leading up to 2012 there was an increase in the rate of anaphylaxis-related hospital admissions by 615% in England and Wales alone [4]. A staggering 44% of British adults now suffer from at least one allergy, and with the inclusion of children, allergies cost the NHS approximately £900 million pounds per year [5]. Consequently, it is important to understand how these statistics can be made less disturbing. The discussion that follows highlights the importance of allergy identification in a medical history when avoiding allergies and anaphylaxis during the perioperative period.

We know of four cases of anaphylaxis in the last year in Chelmsford who had anaphylaxis in response to chlorhexidine, methylene blue dye, cefuroxime and the muscle relaxant rocuronium. All were severe and needed intensive care support with morbidity. Unfortunately, one case was fatal.

Allergic reactions do not always result in anaphylactic shock but can still be severe. In fact, eight million UK citizens live with skin diseases of varying severities [6]. In relation, a case of interest regarding skin allergies was that of a 64-year-old lady with hypothyroidism, who at pre-assessment was known to have skin sensitivity to both water and Elastoplast. This patient had a procedure involving a skin lesion being removed, during which the skin adhesive Dermabond (Ethicon, USA) was applied to close the wounds, with no early or late cutaneous response detected. Following this, in 2014, the patient had a facelift wound closed with Dermabond. Following application of chloramphenicol ointment to this wound at three weeks the patient immediately developed a rash and was later determined to have a lanolin allergy. Furthermore, in 2016 this patient underwent a Brazilian abdominoplasty, with wound closure assisted by the use of Prineo tape (Ethicon, USA). Although, after 48 hours she developed an allergic rash associated with the Prineo tape that was difficult to manage and persisted for weeks. It was suspected that the patient was allergic to the cyanoacrylate that acts as the adhesive in the Prineo, with the same adhesive being present in both Dermabond and Elastoplast, which the patient was declared sensitive to. The allergens in Elastoplast are not confined to the cyanoacrylate glue, and as a result it is suspected that the Prineo hypersensitivity rash was caused by the two previous exposures to Dermabond. This lady is clearly an atopic individual, and perhaps all potential allergens should be avoided in the future.

The point to convey from this case in particular is that products used in surgery can contain allergens in any component, in this instance whether it be the material, dye, or adhesive of the Elastoplast. In addition, it is not commonly recognised in the medical profession that cyanoacrylate is the adhesive component of many glues, and thus if a patient declares an allergy to a specific adhesive, they may also be allergic to many other adhesives that could potentially be used in surgery and result in anaphylaxis [7].

Along with the cases described, the 2016 National Audit Project (NAP6) data, and resultant conclusion that the communication between patients, anaesthetists and allergy doctors requires improvement, emphasise the need for more rigorous preoperative assessment of patients’ allergies [8].

NAP6 showed that, of the three million anaesthetics administered in a single year, 47% of anaphylaxis was due to antibiotics,
Anaphylactic shock but not always result in "Allergic reactions do still be severe". Prophylactic care per anesthetic and allergy in practice should be based on the mnemonic LIED. It has been suggested that the incidence of anaphylaxis as there is no guarantee that chlorhexidine allergy was also possibly because in 2007 the incidence of reactions and anaphylaxis to chlorhexidine was low. Ultimately, LIED is not finite and should be built on. Further forms of assessment that could be conducted as preventative measures include admitting patients to preoperative allergy clinics for rigorous allergy assessment. However, investment into clinics seems to be required, given that the wait following referral averages over 100 days [4]. Meanwhile, antibiotics should be administered whilst the patient is conscious to confer signs of an allergic reaction that are not visible. Also, as previously alluded to, if patch tests are to be used, they should be done days before surgery so that allergies with a delayed onset of symptoms can be identified. Lastly, patients at risk of having an allergic reaction can be treated preoperation with both corticosteroids and antihistamines, which have been suggested to lower the severity of any potential reaction to certain allergens. Although premedication should not be relied on by physicians as a preventative measure for anaphylaxis as there is no guarantee that it decreases these incidences [19].

Reporting on the incidence of allergic reactions and anaphylaxis is generally poor and needs to be encouraged if we are going to gain any significant data that can potentially be used to safeguard patients. It is therefore safe to assume that the incidence of both allergic reactions and anaphylaxis is higher than suggested by NAP6. Thus, we suggest physicians use the LIED mnemonic, as it can assist in decreasing the incidence, whilst establishing the prevalence of specific allergies. In doing so, this will ensure that data presented in future studies similar to NAP6 will be more representative of the general population.

Figure 2: Type 4 hypersensitivity (contact dermatitis) to cyano-acrylic glue (Dermabond) 10 days postoperatively.

“Allergic reactions do not always result in anaphylactic shock but can still be severe”
References


(All website links last accessed August 2019)

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