Detecting patient allergy: beware the LIE

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ABSTRACT

INTRODUCTION Allergy detection is important in surgical patients. Historically, the focus has been on drug allergies. There is increasing focus on non-drug allergy, specifically latex, iodine and elastoplast.

PATIENTS AND METHODS The practice and knowledge of 24 pre-registration house officers was evaluated, with regard to patient allergy. For the second phase of the study, the cohort of 367 consecutive patients presenting to the orthopaedic pre-assessment clinic was prospectively assessed.

RESULTS This prospective study demonstrates that standard history-taking misses a large number (38%) of such allergies.

CONCLUSIONS With regard to allergy detection, we are living a LIE (by ignoring latex, iodine, elastoplast allergy). We suggest junior doctors should employ the mnemonic LIED (latex, iodine, elastoplast and drugs) when taking a medical history.

KEYWORDS

Allergy – Latex allergy – Iodine allergy – Elastoplast allergy – Drug allergy

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Allergy may be defined as an exaggerated response of the immune system to external substances.¹ In surgical practice, historically attention has focused on drug allergy.² However, there are other important examples of allergy seen in surgical practice. Latex (natural rubber latex, NRL) is used widely in surgical equipment including surgical gloves. Coupled with a prevalence of latex sensitivity of approximately 1% in the general population,^{3,4} latex allergy is an important issue. Anaphylactic reactions to latex have been reported,^{5–7} and may, on occasion, be fatal.⁷

Sensitivity to elastoplast (colophony) and iodine are also encountered in surgical practice. In people with industrial exposure to colophony, the prevalence of sensitivity (on patch testing) ranges from 2% to 3.9%.⁸ Iodine is used in contrast media and skin antisepsis. Povidone-iodine solution has both irritant and allergic properties. Lachapelle reported an overall prevalence of skin irritation of 2.8%, and true allergy in 0.4%. A literature search reveals numerous cases of allergic reaction to iodine contrast media.^{9,10} There is some overlap between allergy to iodine, contrast media and shellfish. Reactions to contrast media may be due to the hypertonic nature or ionic content of the dye. The primary allergen in shellfish that stimulates allergic reactions is tropomyosin but, in some patients, the shellfish allergy is due to iodine.¹¹

The aims of this prospective study are to evaluate the efficacy of current practice in detecting allergy in surgical patients (specifically with regard to latex, iodine and elastoplast) and to make suggestions for improvement.

Patients and Methods

The initial phase was a prospective study of junior doctors working in a district general hospital. The practice and knowledge of 24 pre-registration house officers was evaluated, with regard to patient allergy.

For the second phase of the study, a cohort of 367 consecutive patients presenting to the orthopaedic pre-assessment clinic was prospectively assessed. The four orthopaedic house officers running the clinic were asked to enquire about allergy in a specific manner. First they would ask: ‘do you have any allergies?’ The response was recorded. The doctor would then ask: ‘are you allergic to latex, iodine, or elastoplast?’ This answer was also documented.

Results

Phase 1: junior doctor practice

The results of the evaluation of the 24 junior doctors’ allergy

Table 1 Junior doctor allergy practice (n = 24)

Question	Yes	No
Do you routinely ask about allergy?	24	0
Are you aware of latex allergy and do you think it is important?	24	0
Do you routinely ask about latex allergy?	1	23
Are you aware of iodine allergy and do you think it is important?	24	0
Do you routinely ask about iodine allergy?	1	23
Are you aware elastoplast allergy and do you think it is important?	24	0
Do you routinely ask about elastoplast allergy?	1	23

detection practice and knowledge is shown in Table 1. All subjects understood the importance of latex, iodine and elastoplast allergy. Only one doctor specifically enquired about latex, iodine or elastoplast allergy.

Phase 2: detecting allergy

Of the 367 patients, 42 (11%) had a known allergy to latex, iodine or elastoplast – 7 latex, 16 iodine, 19 elastoplast. Of these 42 known-allergy patients, 16 (38%) did not disclose their allergy in response to the question ‘do you have any allergies?’ All 42 disclosed their allergy when specifically questioned: ‘are you allergic to latex, iodine (including shellfish), or elastoplast?’

Discussion

The detection of patient allergy to latex, iodine and elastoplast is important. The consequences of missed patient allergy range from minor irritation (quite literally, contact irritant dermatitis) to major catastrophe (fatal anaphylaxis). There are medicolegal implications and issues relating to the order of a surgical list, since a latex allergic patient must not enter a theatre that has recently used equipment containing latex.

It is routine in the junior doctors’ clerking to ask about allergy. However, the focus has been on drug allergies. In phase one of this study, we demonstrate that, whilst junior doctors are aware of allergy to latex, iodine and elastoplast, they do not enquire specifically about it. Phase two of our study illustrates that the traditional, general method of allergy enquiry does not adequately detect clinically relevant non-

drug allergy. Of patients with allergy to latex, iodine or elastoplast, 38% did not disclose this unless specifically asked.

This study demonstrates that with traditional history-taking, doctors and patients are living a LIE (with regard to latex, iodine and elastoplast). A sense of perspective is important in (allergy) history-taking. Latex allergy is rare and often remains undetected until an anaphylactic reaction occurs.^{5,4} Reaction to iodine-contrast media is important, but it is the responsibility of the person administering the contrast agent to enquire beforehand. However, the junior doctor’s enquiry would prevent a reaction to an iodine skin preparation. Nursing staff often inquire about allergy to elastoplast and its use in hospital is decreasing.⁴

Conclusions

We suggest that in the drug history junior surgical doctors should employ the mnemonic LIED – latex, iodine, elastoplast, drugs.

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References

1. Kay AB. ABC of allergies: good allergy practice. *BMJ* 1998; **316**: 535–7.
2. Morrill AN, Alexander DJ. Impact of junior doctor education on drug allergy documentation. *Ann R Coll Surg Engl* 2005; **87**: 311–2.
3. Charous BL, Blanco C, Tarlo S, Hamilton RG, Baur X, Beezhold D *et al*. Natural rubber latex allergy after 12 years: recommendations and perspectives. *J Allergy Clin Immunol* 2002; **109**: 31–4.
4. Scientific Committee on Medical Products and Medical Devices. *Opinion on natural rubber latex*. European Commission, 2000. <http://europa.eu.int/comm/health/ph_risk/committees/scmp/documents/ont31_en.pdf>.
5. Mansell PI, Reckless JPD, Lovell CR. Severe anaphylactic reaction to latex rubber surgical gloves. *BMJ* 1994; **308**: 246–7.
6. Pecquet C, Leynadier F, Dry J. Contact urticaria and anaphylaxis to natural latex. *J Am Acad Dermatol* 1990; **22**: 631–3.
7. Gelfand DW. Barium enemas, latex balloons and anaphylactic reactions. *AJR Am J Roentgenol* 1991; **156**: 1–2.
8. Farm G. Contact allergy to colophony. Clinical and experimental studies with emphasis on clinical relevance. *Acta Dermatol Venereol Suppl (Stockh)* 1998; **201**: 1–42.
9. Schiano P, Bourgeois B, Richard P, Belaouchi F, Monsegu J, Allouch P *et al*. [Iodic allergic reaction with vasospasm occluded coronary during coronarography]. *Ann Cardiol Angeiol (Paris)* 2002; **51**: 382–5.
10. Laroche D, Vergnaud MC, Lefrancois C, Hue S, Bricard H. Anaphylactoid reactions to iodinated contrast media. *Acad Radiol* 2002; **9** (Suppl 2): S431–2.
11. Brouse SD, Phillips SM. Amiodarone use in patients with documented allergy to iodine-containing compounds. *Pharmacotherapy* 2005; **25**: 429–34.