

## CONTACT POINT

# Anaphylaxis caused by alginate dressing

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Alginates are non-woven absorbent dressings derived from seaweed, and are widely used in the management of exuding wounds or to achieve haemostasis after surgery. We report a case of anaphylaxis secondary to the use of a calcium sodium alginate dressing.

## CASE REPORT

A 46-year-old man underwent an elective endoscopic polypectomy and septal reconstruction for gross nasal polyposis and a deviated

septum under general anaesthesia. The procedure was uneventful, and after the procedure his nasal cavity was packed with a calcium sodium alginate dressing (Kaltostat) to achieve haemostasis. Approximately 2 hours postoperatively, he complained of light-headedness in the recovery room. He was noted to have a generalized urticarial rash. Treatment with intravenous hydrocortisone, chlorphenamine and 0.9% saline was commenced. The nasal pack was removed, and shortly thereafter the patient became unresponsive, with bradycardia and hypotension. His blood pressure and pulse recovered after the application of intravenous atropine.

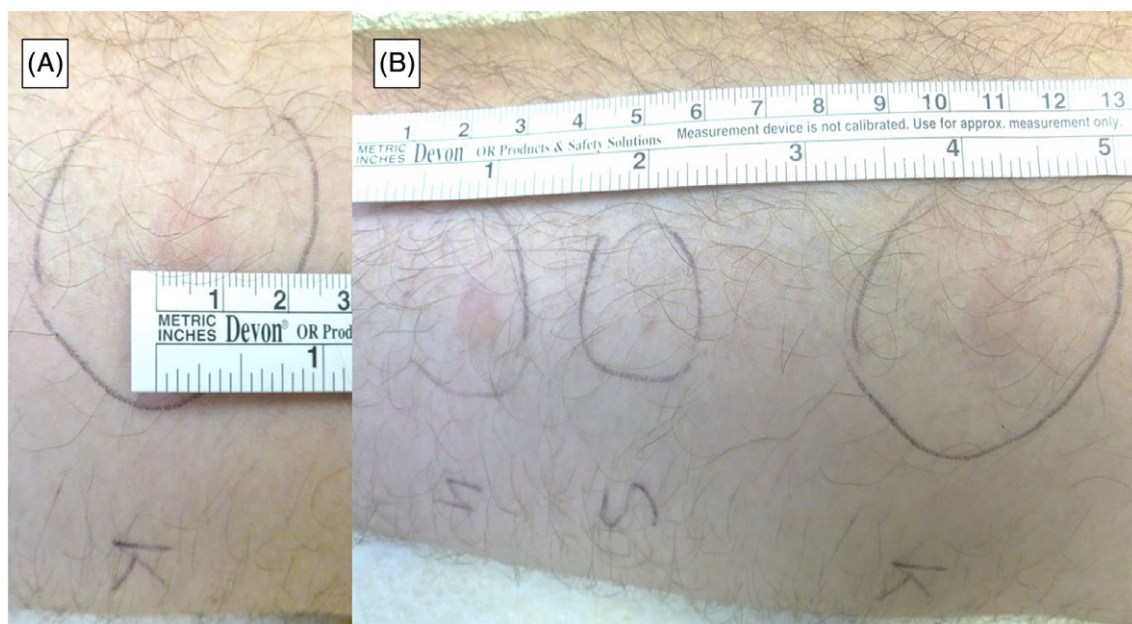


**FIGURE 1** (A) Positive prick test reaction to alginate dressing (7-mm wheal and 9-mm flare). (B) Positive prick test reaction to alginate dressing soaked in saline ('K', on the right) with histamine as a positive control ('H', on the left) and saline as a negative control ('S', in the centre)

A cardiac cause for the sudden clinical deterioration was ruled out because of a normal echocardiogram and normal serial troponin data. The patient's urticarial rash improved with regular antihistamines, and he was discharged home the following day. Interestingly, he had undergone nasal polypectomy 1 year previously, and the same calcium sodium alginate dressing had been used for nasal packing. Latex-specific IgE was not detected.

The patient was referred to dermatology for further investigation. Prick testing undertaken with 0.9% saline-soaked calcium sodium alginate dressing gave a positive result (Figure 1A,B); 0.9% saline and histamine were used as a negative and a positive control, respectively (Figure 1B). The patient was diagnosed with alginate allergy, and advised to avoid alginate-containing products. Sensitization may have occurred during his previous surgery.

## DISCUSSION

Calcium sodium alginate is derived from brown seaweeds of the phylum Phaeophyceae. Calcium sodium alginate dressings are absorbent fibrous fleece dressings composed of sodium and calcium salts of alginic acid. Allergy to seaweed-derived products has been reported previously in the literature. In 1 case, anaphylaxis was reported following insertion of a laminaria stick, a derivative of brown seaweed, to dilate the cervix during a therapeutic abortion.<sup>1</sup> A fatal case of anaphylaxis caused by alginate paste used for dental impressions, and a single report of anaphylaxis caused by sodium alginate contained in Gaviscon for the management of dyspepsia, have also been reported.<sup>2,3</sup> Furthermore, occupational pulmonary hypersensitivity to alginates

was noted in 7% of workers exposed to dried milled seaweed and alginate compounds.<sup>4</sup> We report the first case of anaphylaxis caused by a calcium sodium alginate dressing.

## Conflict of interest

The authors declare no potential conflict of interests.

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## REFERENCES

1. Knowles SR, Djordjevic K, Binkley K, Weber EA. Allergic anaphylaxis to Laminaria. *Allergy*. 2002;57:370.
2. Gangemi S, Spagnolo EV, Cardia G, Minciullo PL. Fatal anaphylactic shock due to a dental impression material. *Int J Prosthodont*. 2008;22:33-34.
3. Lauerma AI, Petman L, Mäkinen-Kiljunen S. IgE-mediated anaphylaxis to antacid. *Allergy*. 2001;56:580.
4. Henderson AK, Ranger AF, Lloyd J, McSharry C, Mills RJ, Moran F. Pulmonary hypersensitivity in the alginate industry. *Scott Med J*. 1984;29:90-95.

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