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LETTERS TO THE EDITOR

Dear Editor,

BUCKWHEAT ANAPHYLAXIS IN A PREVIOUSLY NON-ATOPIC 11-YEAR-OLD BOY

An 11-year-old Japanese boy presented to the emergency department with anaphylaxis. That evening, he had eaten a meal consisting of soba (buckwheat) noodles, egg, broccoli and wasabi. Within 60 min, he developed generalised urticaria, persistent cough and a hoarse voice. On arrival to the emergency department, he was hemodynamically stable with saturations of 92% in room air and bilateral wheeze on auscultation of the chest. Adrenaline and antihistamine were administered with prompt clinical response. He regularly consumed egg and broccoli. Soba noodles had also been a frequent part of the diet in the past but not in the last 6 months. He was otherwise well with no history of asthma, eczema or food allergies. Interestingly, he asked if his allergic reaction might be related to his traditional buckwheat pillow that had recently been making his face itchy. He was followed up in our Paediatric Allergy Clinic. A skin prick test was performed and was strongly positive for buckwheat at 15 mm (Fig. 1).

Buckwheat (*Fagopyrum esculentum*) is a grain-like seed taxonomically unrelated to wheat originating from Central Asia. It is used to make Japanese noodles (soba), Korean jelly (memil-muk), Indian bread (kuttu ki purra), Northern Italian pasta (pizzocheri) and European pancakes (Russian Blini, Breton Galletes). As it is gluten free, it is becoming increasingly popular in Western diets.[1]

Fig. 1 Skin prick testing strongly positive for buckwheat (B) at 15 mm. Histamine (H) and negative controls (C) are also visible.

Buckwheat allergy and anaphylaxis is commonly described in children in Japan and Korea.[2] It is the fourth most common cause of food-induced anaphylaxis in Japan and fifth in Korea. It has been described in Italy, the USA and other European countries.[1] It is an emerging problem in Australia, with eight adults patients identified in an Adelaide case series from 2008 to 2014.[3] There are multiple reports of buckwheat anaphylaxis associated with sensitisation from traditional buckwheat pillows.[4] With increasing popularity of gluten-free diets and greater exposure to multicultural cuisines, it has the potential become a more relevant food allergen. Of concern are reports of anaphylaxis to buckwheat as an undeclared allergen in burgers, pasta, pizza dough, cakes and breads.[1]

This is the first reported case of childhood buckwheat anaphylaxis in Australia. The proposed mechanism is sensitisation by either cutaneous exposure or inhalation of buckwheat protein during a period of prolonged delay from the last oral exposure. Alternatively, the child may have already been sensitised to buckwheat; however, repeat regular ingestion conferred tolerance that was lost during a period of accidental avoidance. This highlights the potential for non-atopic children repeatedly exposed to food proteins via a parenteral route to develop severe allergic responses such as anaphylaxis.

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Conflict of interest: None declared.

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Dear Editor,

ASSOCIATION OF PNEUMOTHORAX WITH USE OF A BOUGIE FOR ENDOTRACHEAL INTUBATION IN A NEONATE

We report an observation of a life-threatening pneumothorax with a bougie-assisted (Fig. 1) intubation in a 34-week

Fig. 1 Neonatal bougie.

gestational age preterm newborn with a birthweight of 2 kg during stabilisation for neonatal transport. There were no obvious congenital anomalies.

When the neonatal transfer service arrived, the infant had a size 3 endotracheal tube (ETT) and was being ventilated with a T-piece device with a peak inspiratory pressure of 25 cmH_2O in 100% oxygen (Fig. 2). The oxygen saturations were 75–82%, which improved to the 90s after surfactant but drifted down to 80s after 20 min. The examination at this stage demonstrated bilateral air entry and good chest expansion. There was no history of difficult intubation. In view of 50% leak, a size 3.5 ETT was railroaded over the bougie using the Seldinger technique for quickness by the neonatal transport fellow who was a trained neonatologist and had completed his training in neonatal medicine. This led to marked desaturations, and no air entry was noted on the right side of the chest on auscultation. A pneumothorax was confirmed on chest transillumination. While the air was being continuously aspirated by thoracentesis, the infant went into cardiac arrest, needing cardiopulmonary resuscitation and chest drain (Fig. 3). The infant was subsequently stabilized on high-frequency oscillation ventilation and inotropes. She was then transferred to the level-3 Neonatal Intensive care (NICU) for increased intensity of care. She was switched to conventional ventilation on day 2 and extubated on day 6 onto high-flow oxygen. She needed a chest drain for a total of 7 days and was discharged home on day 13 of life.

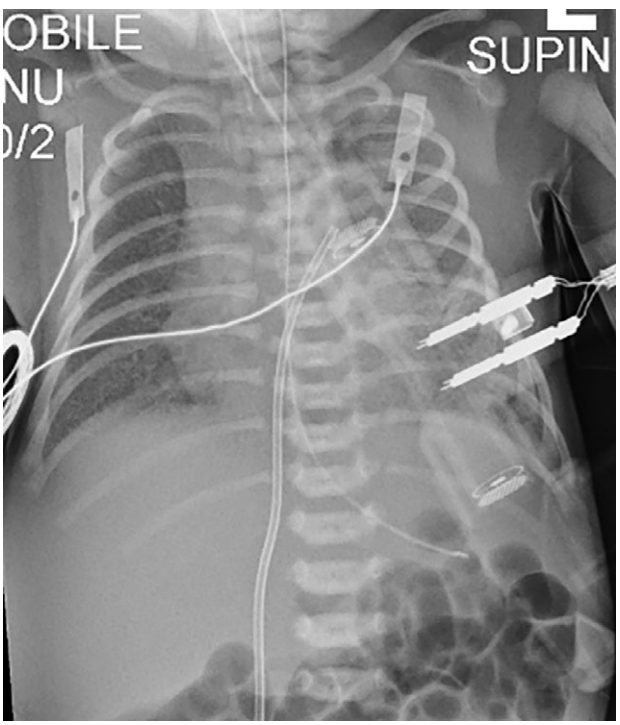

Fig. 2 First chest X-ray after intubation.

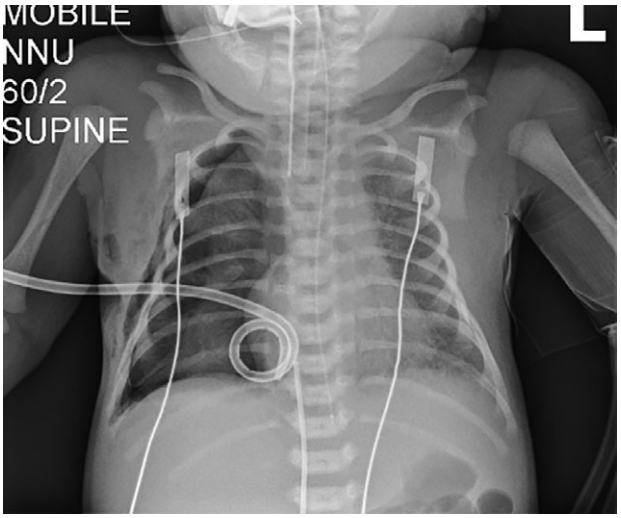

Fig. 3 Tension pneumothorax after bougie-assisted intubation.

Bougie improves first-pass intubation in adults and is also recommended in Difficult Airway Society (DSA) algorithms for children.[1] There are no neonatal DAS algorithms. It is one of the adjuncts in a difficult airway kit in many NICUs across the UK.[2] Neonatal bougies have a straight tip, markings every 1 cm or 10 cm (brand variability) and can potentially slip deep into the airways. Bleeding, mucosal injury, lung collapse and airway trauma causing pneumothorax are reported complications of bougie use.[3] The association of bougie-assisted neonatal intubation and concurrent development of pneumothorax is reported on five previous occasions. Trauma, suctioning of the ETT and variable ventilation pressures are proposed causes in two cases described by Parekh *et al.*[4] Two of the three cases by Glaisyer and Way[5] and one by Kumar and Walker noted similar association without explaining the mechanism.[3]

In our case, the examination before bougie-assisted intubation was not suggestive of air leak. The infant presented with desaturations, reduced right-sided air entry and positive transillumination immediately after intubation. The depth of the insertion of the bougie was not noted during intubation; it may have penetrated deep into the distal airway causing trauma and air leak. Other probable explanations include variable high ventilator pressures and surfactant administration.

Bougies are an unusual choice in neonates. It should be best avoided, and if used, it should be with extreme caution, paying careful attention to its depth of insertion and associated complications.

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Novaturient by Tram Anastasia Nguyen (age 15) from Kaleidoscopic Art Competition, SCHN

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