Embryonated duck ("*balut*") eggshell aspiration in a one-year-old boy

Lapeña J F Jr

ABSTRACT

A one-year-old boy with two months' chronic cough and dysphonia, unresponsive to therapy for pneumonia, had a radiopaque, wedge-shaped tracheal foreign body noted on anteroposterior, but not lateral radiographs, and he eventually became aphonic. Laryngoscopy yielded a subglottic embryonated duck eggshell. Foreign body aspiration should be considered in the presence of chronic cough. Radiopaque airway foreign bodies may be metallic or calcific. The patient was fond of sucking soup from a partially-shelled embryonated duck egg. The last occasion occurred immediately before the onset of cough. The hard egg white of the same delicacy is a commonly-ingested oesophageal foreign body in the Philippines, but the preceding slurping of the amniotic fluid predisposes one to unusual eggshell aspiration. With the continuing global migration of overseas workers and their families, healthcare providers with Asian and Southeast Asian clients should consider such cultural practices in assessing symptoms suggestive of aerodigestive foreign bodies.

Keywords: *"balut"*, embryonated duck egg, eggshell, foreign body aspiration, laryngotracheal foreign body

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INTRODUCTION

Foreign body aspiration commonly affects young children below the age of three years.[1] Aspirated objects may cause direct or indirect (inflammatory) airway compromise, leading to asphyxia and death. Aspiration results from sudden inspiration while the potential foreign object is proximal to the glottis, usually in the oral or nasal cavities. It can occur with laughing or gasping while chewing food or playing with an object in the mouth. The act of sudden inhalation conducts the object into the laryngotracheobronchial tree rather than the oesophagus. Patients may present with coughing and stridor, which may partially abate, only to recur due to subsequent inflammation.

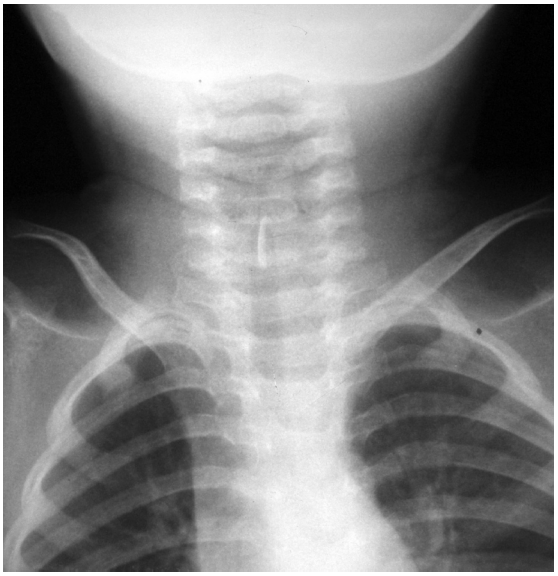

Fig. 1 Frontal radiograph shows a radiopaque subglottic foreign body.

CASE REPORT

Two months prior, a one-year-old boy began coughing, with hoarseness and loss of appetite after a few days. He was treated for pneumonia twice, with worsening hoarseness and stridor evolving into an aphonic cry five days before admission. He was referred to us with the impression of a "tracheal metallic object" on chest radiograph. Repeat radiographs confirmed a radiopaque, calcific, subglottic foreign body (Fig. 1). In both instances, the wedge-shaped foreign body was not apparent on lateral views. Anticipating a tin or aluminum foil piece of candy wrapper or bone chip on laryngobronchoscopy, we instead extracted an eggshell chip folded on itself from the subglottis, stenting the vocal folds open. The child regained voice immediately, and had an unremarkable recovery. On review, the mother recalled feeding him an embryonated duck egg the night before the onset of symptoms; in fact, it was one of his favourite foods!

DISCUSSION

Placing objects in the mouth, which may reflect an oral-stage manner of environmental exploration, predisposes one to accidental ingestion or aspiration. Sudden inspiration favours the latter. Aspirated foreign

Department of Otorhinolaryngology, UP College of Medicine – Philippine General Hospital, University of the Philippines Manila, Taft Avenue, Ermita, Manila 1000, Philippines

Lapeña JF Jr, MA, MD, FPCS
Associate Professor & Consultant

Correspondence to:
Dr José Florencio F Lapeña Jr.
Tel: (63) 2526 4360
Fax: (63) 2567 9508
Email: lapenajf@upm.edu.ph

bodies may reflect cultural contexts. In the Philippines, makeshift toy blowguns employing plastic drinking-straws loaded with mung-bean ("*munggo*") seeds or pins ("*aspile*"), cause aspiration when the child forgets to first distance the loaded straw from the mouth when taking a deep breath before blowing. Islamic populations report high incidences of pin aspiration among young women who hold pins with their lips, presumably while arranging their headscarf.[2]

Embryonated duck eggs are a popular delicacy in China and Southeast Asia. In the Philippines, "*balut*" are hard-boiled and peddled by street vendors. The "*balut*" shell is cracked open on one end and the warm amniotic broth surrounding the embryo is vigorously slurped, after which the yolk and young chick are eaten, black feathers and all. When the yolk and chick are also sucked from the shell in one gulp, accidental ingestion of the hardened egg white may cause an oesophageal foreign body. In this instance, the initial hearty sip of soup was accompanied by bits of shell. Eggshell aspiration (of chicken, but not duck eggs) has been previously reported in infants.[3,4] Eggshells are radiopaque and may appear metallic, although closer scrutiny may show similar densities to bone.[5] In our case, the shell fragments were folded on each other, forming a triangular wedge that showed clearly on anteroposterior radiographs but was too thin to be discerned on lateral views.

Foreign body aspiration should always be ruled out in the presence of chronic cough. Aphonia may suggest laryngeal impaction. Radiopaque airway wedge-shaped foreign bodies that appear on anteroposterior but not on lateral radiographs may be metallic (foil) or calcific (bone chips). In our case, the patient was fond of sucking the soup from a partially-shelled embryonated duck egg, the last such occasion having occurred immediately before the onset of cough. The hard egg white of the same delicacy is a commonly ingested oesophageal foreign body in the Philippines, but it is the preceding ritual slurping of the amniotic fluid that predisposed our patient to unusual aspiration of a piece of eggshell. With the continuing global migration of overseas workers and their families, healthcare providers with Asian and Southeast Asian clients should consider such cultural practices in assessing symptoms suggestive of aerodigestive foreign bodies.

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