Lychee-Flavored Gel Candies
A Potentially Lethal Snack for Infants and Children

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A 10 month-old infant was given a Lychee Mini Fruity Gel (AP Frozen Foods Ltd, Thailand) by his mother while shopping in a supermarket. The child was sucking on the gel when he began to choke and have difficulty breathing. Emergency medical services were called, and paramedics found the child to be in respiratory arrest with a palpable pulse of 40 beats/min. They transported him to the pediatric emergency department, performing bag-valve-mask ventilation with a manual resuscitator. The child was intubated and taken to the operating room for bronchoscopy and then the pediatric intensive care unit for critical care. The initial report was that he choked on gelatin. However, he was found to have aspirated a large hard gel found in the lychee-flavored candy that totally obstructed his airway. This is the third case of aspiration of a gel candy we have seen in 5 years. Parents should be warned not to give these candies to children younger than 5 years.

We report the case of an infant who was nearly asphyxiated by a Lychee Mini Fruity Gel candy (AP Frozen Foods Ltd, Thailand) and 2 fatal cases of asphyxiation from airway obstruction by the candy. Although the dangers of this popular snack are discussed in the legal literature, this is the first such report in the medical literature.

PATIENT REPORTS

PATIENT 1

A 10 month-old infant was brought to the pediatric emergency department (PED) by paramedics who responded to a call about a child in distress at a local supermarket. The infant was in good health until his mother gave him a Lychee Mini Fruity Gel to eat while they were shopping. His mother noted that he began choking and turned blue. A bystander initiated cardiopulmonary resuscitation, and emergency medical services were called. The paramedics responded within 4 minutes and found the infant to be apneic with a palpable pulse of 40 beats/min. He had a Glasgow Coma Scale score of 3 with fixed and dilated pupils. They immediately began bag-valve-mask ventilation and transported him to the PED. No foreign body resuscitation maneuvers were attempted in the field because of the history of his choking on gelatin. Field time was 2 minutes, transport time was 12 minutes, and the total run time from the call to arrival at the hospital was 18 minutes. On arrival in the PED, the infant was apneic, and ventilation was being assisted by the paramedics. His pulse was 140 beats/min, blood pressure was 93/72 mm Hg, rectal temperature was 37°C, and arterial oxygen saturation was 80% with assisted ventilation. Endotracheal intubation was immediately attempted. However, there was copious red frothy material, which was assumed to be gelatin. After vigorous suctioning of the hypopharynx and airway, the child was intubated with a 4.0-mm endotracheal tube and was ventilated with a pressure-cycled ventilator. Initially, high pressures were required to ventilate the infant, so he was suctioned again. At this time, a large piece of firm red gelatinous...
material was removed from his mouth (Figure 1), and good ventilation was achieved with minimum pressures. The Department of Head and Neck Surgery was consulted because of concerns about residual foreign material in the airway, and the patient was immediately taken to the operating room for rigid bronchoscopy. Examination of the airway revealed normal bronchi with copious amounts of pink frothy material, consistent with the candy removed in the PED. He was taken to the pediatric intensive care unit for further care.

The patient's hospital course was complicated by 7 days of intubation and assisted ventilation, aspiration pneumonia, *Pseudomonas* bacteremia, and a staphylococcal respiratory infection. He was discharged to home in good condition after 13 days in the pediatric intensive care unit, and he was neurologically intact on discharge.

**PATIENT 2**

A 4-year-old girl was given a lychee-flavored gel candy, and, soon afterward, she began to choke and turned blue. Emergency medical services were called, and she was transported to the PED. Although she was receiving bag-valve-mask ventilation, her color remained poor. She was tracheally intubated and given 2 standard doses of epinephrine intravenously and a bolus of 20 mL/kg of isotonic sodium chloride solution, but she remained in asystole. She could not be resuscitated after 20 minutes of cardiopulmonary resuscitation in the PED. Total time in cardiopulmonary arrest was estimated to be 50 minutes.

**PATIENT 3**

A 27-month-old boy was given a lychee-flavored gel candy at day care, and he began choking. Emergency medical services were called, and paramedics arrived to find the child apneic with weak pulses. Abdominal thrust was unsuccessful in dislodging the foreign body. The paramedics removed the gel candy with McGill forceps, and the patient was successfully intubated. Cardiopulmonary resuscitation was begun, and epinephrine was given via the tracheal tube and intravenously. On arrival at the emergency department, the patient had a pulse of 170 beats/minute and blood pressure of 110/80 mm Hg. The patient was flaccid and unresponsive, and his pupils were fixed and dilated. The patient was admitted to the hospital and declared brain dead 5 days later. Results of an autopsy showed anoxic injury to the brain.

**COMMENT**

Food-related asphyxiation of infants and children is not uncommon. There is 1 death every 5 days in the United States. Of these deaths, 90% occur in infants and children younger than 5 years. Round foods, including hot dog products, candy, nuts, and grapes, are most often listed as the cause of asphyxiation on death certificates. Food aspirated into the tracheobronchial tree is dangerous. A review of 210 bronchoscopic examinations for foreign bodies demonstrated that most are found in the right main stem bronchus; however, they may also be in the left main stem bronchus or in both bronchi. Candy can be easily aspirated by infants. Sweets, such as the products described in these cases, may dissolve in the tracheobronchial secretions and cause severe respiratory obstruction. The hyperosmolar sugar takes a long time to dissolve and may be associated with complications such as those seen in case 1: respiratory failure, pneumonia, and sepsis.

The candy described in these patient reports is commonly sold in Asian markets in Los Angeles, Calif, and elsewhere. In fact, on the day case 2 presented to the PED, one of the nurses had a bag of the candies (Figure 2). Many manufacturers make the lychee-flavored sweets, and they are very popular in the Asian community. The product from case 1 was manufactured by AP Frozen Foods Ltd of Thailand and imported by I & T Enterprises in California. Lychee refers to the flavor of the candy and is the product name of the specific fruit gel aspirated by the infant. The gel is made of konjac, a binding agent made by processing the tubers of the konnyaku root. The sweetened gel surrounds a hard fruit chunk. The sweet part does not melt in the mouth and requires chewing for swallowing. The shape of the candy can easily obstruct the airway. In 2001, the US Food and Drug Ad-
The administration (FDA) issued 2 warnings to consumers regarding the choking hazards of this candy and suggested that it not be eaten by children or elderly persons.\(^7_8\) Subsequently, the FDA has banned the importation of these candies,\(^9\) yet the sweets still can be found in markets. One of us (J.S.S.) visited several markets in close proximity to the hospital after the FDA ban was issued and found the product still on the shelves. These markets were primarily family-owned and were not run by large corporations.

Parents must be made aware of products or foods that present a danger to children, such as the candy described in this report. Mini Fruity Gels and other candies that have konjac as a component may lead to fatal or near-fatal asphyxiation (Figure 2). Education of families may be accomplished through anticipatory guidance during primary care visits or by informing the local media of products or foods that are dangerous to children. The federal agency responsible for regulating importation of these candies has banned their importation, but they still may be available in some markets.

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**REFERENCES**