

A growing hazard for children: swallowing 'button' batteries

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Christopher Zahn, 9, of Milwaukee swallowed a button battery from a DVD remote when he was 7 and was rushed to Children's Hospital of Wisconsin. At the hospital, an X-ray showed the small, nickel-shaped battery shining in his stomach. Credit: Gary Porter

By Mark Johnson of the Journal Sentinel

One day in April 2013, Tammy Zahn went to play a DVD of the movie "Rio" for her sons, Christopher, 7, and Jacob, 5. When Zahn picked up the remote, she noticed the plastic latch at the back was missing, and so was the little battery.

She checked the bedroom floor of the Milwaukee house. Then she looked at her sons.

"Christopher, where's the battery?"

"Momma, please don't be mad at me," said the eldest boy. "But I accidentally swallowed it."

It was around 7:30 at night, and Zahn strapped Christopher into his car seat and raced to Children's Hospital of Wisconsin. The child was already complaining of a stomachache.

At Children's, doctors X-rayed Christopher. They had little trouble spotting the small, nickel-shaped battery. There it was, a bright disc, shining in his stomach. Had the battery been in his esophagus, the situation would have been deemed an emergency.

X-ray images of so-called button batteries have become a familiar sight at Children's and at hospitals around the country, despite warning labels on the battery packages. Last year the hospital in Wauwatosa treated 14 children for ingesting the tiny lithium batteries. Nationwide, Christopher was one of 3,366 Americans to swallow a button battery in 2013; four would die as a result.

"They're easy for the child to pick up. They're easy to pop in the mouth and they're everywhere," said David Gregg, medical director of imaging at Children's and the Medical College of Wisconsin.

Leak and burn

The potential hazards from these batteries have received increased attention after news reports of an Arizona boy who has gone through 65 surgeries after swallowing a button battery in 2010. Cases causing major or deadly damage have risen as the batteries have become increasingly common, powering hearing aids, remote controls, calculators and even novelty greeting cards that sing or play music when you open them.

A study in the journal *Pediatrics* found 56,535 incidents of people swallowing button batteries across the United States between 1985 and 2009. Cases resulting in major or fatal injuries increased more than sixfold during the study period.

Although severe injuries are still rare, the National Battery Ingestion Hotline reported 16 deaths from button battery swallowing between 1985 and 2013. The batteries can obstruct the food pipe, and stomach acids can cause chemicals from the battery to leak and burn the lining of the esophagus.

The most troublesome of the button batteries are those over 20 millimeters in diameter, which pose a higher risk of getting stuck, and those made of lithium, which is linked to burns, said Farhat N. Ashai-Khan, a pediatric gastroenterologist at Children's and the Medical College of Wisconsin.

Tammy Zahn was fortunate that her son admitted swallowing the battery. Some don't.

Telltale signs that a child may have swallowed a battery include: refusing to eat, coughing, choking or drooling, said Ashai-Khan. If a child is suspected of having swallowed a battery, he or she should be examined and not given anything to eat or drink until the battery has been removed.

'Momma, it hurts'

In Christopher's case, doctors opted to wait overnight to see whether the battery would exit the body on its own. If not, surgeons would have to perform a brief procedure to remove it.

"Momma, it hurts," Christopher kept telling his mother that night as they waited to see whether the battery would pass through his body. Frightened, Tammy Zahn stayed at her child's side.

When morning came and the battery was still in the boy's stomach, doctors anesthetized him and threaded a tube called an endoscope down his throat and into his stomach. The endoscope carried a tiny camera, and doctors were able to follow its progress as it neared the battery. Attached to the end of the tube were small metal forceps, which the doctors used to pluck out the battery. The procedure took about seven minutes.

Tammy Zahn took her son home from the hospital the day after he'd been admitted.

"He was pretty much right back to his chipper self," she said. "He's a punky one, a true boy, that's for sure."

At home, she sat down and had a talk with Christopher. She said she was proud that he'd told the truth and admitted swallowing the battery.

Then she went over the lesson she wanted him to learn.

"Food and drink," she said, "are the only things that belong in your mouth."