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Expanding Ball Toy Poses Hazard to Children and Pets

By **ANAHAD O'CONNOR**

They are known as Water Balz, and at first glance they look like marbles: small and spherical, brightly colored. But these balls are made of superabsorbent polymer, and they are capable of rapidly expanding to the size of a racquetball when doused in water.

This unusual feature has made Water Balz a popular toy. But it is also the very feature that has prompted some pediatricians to warn parents that the toys can pose a unique hazard to small children.

In a report published this week in the journal *Pediatrics*, doctors in Texas documented the case of an infant who swallowed one of the toys and required surgery to have it removed. Although the object was the size of a small marble when it was swallowed, by the time it reached her digestive tract it had expanded enough to cause a blockage in her intestines.

"Kids swallow things all the time," said Dr. Oluyinka Olutoye, a pediatric surgeon at Texas Children's Hospital and an author of the report. "Most of the time, objects that are small enough to get into the stomach will pass through without causing any problem. But this type of material is made to absorb water, and over time it keeps growing and growing and gets to a size where it can't get through the digestive tract."

Many parents go out of their way to keep miniature objects that can be swallowed away from infants and toddlers. But sometimes even the most vigilant childproofing measures fail, and every year thousands of children are hospitalized after swallowing objects, usually after mistaking them for candy.

A [study published in May](#), for example, noted that about 66,000 children have swallowed button-size batteries in the last two decades. And [just last month](#), the Consumer Product Safety Commission took the rare step of filing an administrative complaint against the makers of a desktop toy called Buckyballs that are made from powerful rare-earth magnets that can be dangerous if ingested. The commission estimated that since 2009, there have

been 1,700 cases of ingestion of rare-earth magnets that resulted in emergency care.

In most cases in which a child swallows a foreign object, it is so small or innocuous that it does no harm. According to studies, up to 90 percent of foreign objects pass spontaneously, and less than 1 percent require removal through surgery.

But water-absorbing polymers pose a heightened danger because they grow once exposed to water, more than doubling in size within a couple of hours and then growing further as time passes, said Dr. Olutoye, who is also an associate professor of pediatrics at the Baylor College of Medicine.

Dr. Olutoye's report describes the first known case of a child swallowing a toy made from the material. The child, a 9-month-old girl, was playing with an older sister's polymer-ball set earlier this year when her mother saw her swallow what at first she thought might have been a piece of candy.

"Her thought was that it would pass through or that it would degrade and dissolve," he said. "But after several hours, the child was having trouble. She started to vomit and wasn't able to keep food down. It looked like things were not going to get better."

Over the 48 hours that followed, the girl's pain got worse, and her doctors could tell from imaging scans that there was an obstruction in her bowel, though the object itself, made of the specialized polymer, was not visible in X-ray scans. After inserting a camera into her abdomen, they could see the Water Balz stuck in her gastrointestinal tract.

"Something that was the size of a small marble had grown to the size of a golf ball and was obstructing the intestines," Dr. Olutoye said.

The girl's family had brought other balls from the set along with them to the hospital, which allowed her doctors to figure out what was stuck in her bowels. On its packaging is the claim that the balls grow up to 400 times their initial size.

"Fun to throw," the package states. "Watch them grow!"

Dr. Olutoye and his colleagues surgically removed the ball, and the girl has had a complete recovery.

According to their manufacturer, DuneCraft Inc., the balls are intended for children no younger than 4. But that may not stop much smaller children who get their hands on them from seeing them as candy and swallowing them, Dr. Olutoye said.

He added that similar materials are used in pottery and gardening because of their ability to absorb water. Though there are no other known cases of ingestion in humans, the case report pointed out two reports of birds suffering fatal intestinal obstructions after ingesting the superabsorbent material. Dr. Olutoye said it was a risk not just for children, but for pets as well.

"This report should serve to raise awareness of the hazards of accidental ingestion of these products, which pose a public health concern," Dr. Olutoye and his colleagues wrote. "We speculate that this problem may increase in incidence as a cursory look at department stores suggests that the use of superabsorbent polymer technology is becoming more prevalent in toys, gardening equipment and other household products."

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