



# SOAPPS



section of affiliated professionals in pediatric surgery

EDUCATION COMMITTEE PUBLICATION: APP Resources

## Foreign Body Ingestion: Water Beads

Developed by Abigail Walsh, DNP, CPNP-AC

Superabsorbent polymers beads (aka Water beads) are marketed as sensory toys. Sold in bulk, and as a “water bead blaster” water gun type toy. They start out as small beads (2-5mm typically) and expand up to 100 times their size when exposed to water.

Ingestion of beads may result in a bowel obstruction if the bead does not pass on its own.

A consumer product safety commission report was issued in September 2023 to highlight the danger of these beads if ingested.

A 2022 literature review identified 43 cases of bowel obstruction with the following patient characteristics and clinical presentation:

- Patient age: 6mo-36mo
- Symptoms present around 1 day after ingestion (vomiting, constipation, diarrhea, abdominal pain, dehydration).
- Clinical Exam: abdominal tenderness and/or distension. Mass rarely palpated.
- Radiographic Findings: Water beads are not radio-opaque. **KUB** can have obstructive pattern, no visible mass; **Abdominal US**: rounded intraluminal image; **Abdominal CT**: intraluminal mass seen

**Non-Operative Approach:** Possible if ingestion is known and water beads were recently ingested. Whole bowel irrigation has been documented as being successful (Jackson et al, 2015). If exact brand of water bead is known, non-operative attempt may be more reasonable (i.e. Orbeez maximum diameter 14mm, other generic brands expand 30-50mm).

**Surgical Management:** Enterotomy of resection of small bowel typically required. Bowel necrosis and patient death is documented in the literature.

**Patient Education:** Don't have water beads especially in households with kids under 3 years of age. Pets are also at risk for ingestion and obstruction.

### References:

Jackson, J., Randell, K. A. & Knapp, J. F. (2015). Two Year Old With Water Bead Ingestion. *Pediatric Emergency Care*, 31 (8), 605-607. doi: 10.1097/PEC.0000000000000520.

United States Consumer Product Safety Commission (2023, September). Water beads can be deadly if swallowed.

<https://www.cpsc.gov/Safety-Education/Safety-Guides/Toys-Crafts-Water-Beads/Water-Beads-Can-Be-Deadly-If-Swallowed>

Weniko Caré, Laurène Dufayet, Nathalie Paret, Jacques Manel, Hervé Laborde-Casterot, Ingrid Blanc-Brisset, Jérôme Langrand & Dominique Vodovar (2022) Bowel obstruction following ingestion of superabsorbent polymers beads: literature review, *Clinical Toxicology*, 60:2, 159-167, DOI: 10.1080/15563650.2021.1987452