Morbidity in an Infant by Superabsorbent Polymer Ingestion

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ABSTRACT

Superabsorbent polymer (SAP) ingestion is a potentially dangerous condition and may lead to morbidity and mortality. A 22-month-old girl presented with intestinal obstruction. At operation a SAP was found as a cause of intestinal obstruction. The child underwent second surgery for anastomotic leak and ileostomy was made.

Key words: Superabsorbent polymer; Intestinal obstruction; Intestinal perforation; Morbidity; Foreign body ingestion

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INTRODUCTION

Polyacrylmide, also known as SAP, absorbs water and expands.[1] On ingestion, the size of polymer increases as it passes through the gastrointestinal tract. This can result in intestinal obstruction and even perforation.[1-3] Herein, we report a case of intestinal obstruction caused by ingestion of SAP.

CASE REPORT

A 22-month-old girl presented with abdominal distension and vomiting for the last 4 days. There were no signs of peritonitis. X ray abdomen revealed dilated small bowel (Fig.1A). Child was resuscitated with IV fluids. Due to the lack of clinical improvement and increasing bilious aspirate, laparotomy was performed. A superabsorbent polymer ball was found lodged in the ileum approximately 30 cm proximal to the ileocaecal valve leading to intestinal obstruction. Small bowel proximal to the site of obstruction was distended, edematous and congested (Fig.1B). An enterotomy with primary repair was performed after removal of the polymer (Fig.1C).

Patient was again explored on 6th postoperative day due to anastomotic leak. A temporary ileostomy was made. Post-operative recovery was uneventful and a reversal of the ileostomy was performed six days after emergency re-laparotomy. Recovery after reversal of
ileostomy was uneventful and patient was discharged in a stable condition.

**DISCUSSION**

Most of the patients with SAP ingestion are infants. Diagnosis of an intraluminal rounded cystic structure has been reported on ultrasonography, CT scan and MRI abdomen.[1-8] SAP ball impaction usually reported in the small intestine. A mortality has been reported in literature due to SAP ingestion.[2] Since 2013, toys containing SAP are banned in Malaysia.

In our patient, the anastomotic leak was the main cause of morbidity. Another case of anastomotic dehiscence after primary closure of enterotomy after SAP retrieval has been reported in literature.[2] An in-vitro study which reenacts the same conditions after ingestion of SAP into the small intestines in a lab found that SAPs tend to expand maximally to almost 5 times its original diameter at 96 hours post ingestion.[3] In view of the expanding properties of SAP, expectant management is dangerous and if a positive history of SAP ingestion is present, an immediate endoscopic retrieval is recommended.[2,3]

**Consent:** Authors have submitted signed consent form from legal guardians of the patient for use of clinical material in this manuscript. The Consent form is available with Editorial office.

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**REFERENCES**