Phytobezoar causing intestinal obstruction in a neonate: A case report

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KEYWORDS
Neonate, Intestinal obstruction, Phytobezoar, Jatakarma

ABSTRACT

Background: Phytobezoars are concretions of non-digestible vegetative matter in the gastrointestinal tract and are a rare cause of intestinal obstruction in children.

Case presentation: We report a case of intestinal obstruction in a 2-day-old neonate with no specific radiological features pointing to any common etiology. On exploratory laparotomy, a swollen raisin was found impacted in the ileum causing intestinal obstruction. The history taken in retrospect revealed that the elder sibling had witnessed her father perform a traditional ritual of putting a drop of honey into the mouth of the newborn and she imitated the same with a raisin, which led to the obstruction.

Conclusion: A careful detailed history of local traditional rituals is at times, the most important pointer towards the etiology of a clinical condition. The basic clinical skill of history taking is still very important, despite the availability of advanced radiological investigations.

INTRODUCTION

Neonatal intestinal obstruction is commonly caused by small bowel atresia, intestinal malrotation, Hirschsprung’s disease, or meconium ileus, with subtle differences in clinical and radiological findings. Foreign bodies in the intestinal lumen of newborns are very uncommon events. In older children, most of the foreign bodies are swallowed accidentally.[1] In most instances, a foreign body does not cause complete obstruction, and after it has passed through the esophagus, it will pass the entire gastrointestinal tract.[2] However, there is almost no information about intestinal foreign bodies in newborns. [3]

Intestinal bezoars are a rare cause of intestinal obstruction in children. It is even rarer in a newborn. Bezoar as the etiology of intestinal obstruction is not usually considered in the neonatal and early infancy. Herein, we report a case of intestinal obstruction in a neonate caused by a raisin impacted in the distal ileum.

CASE REPORT

A term male baby, with a birth weight of 3.2kg, was born by normal vaginal delivery to a gravida-3 mother. Feeds were started and the baby was well till about 30 hours of life when the child developed vomiting which was initially nonbilious, and later turned bilious in nature. The child was reviewed by a Pediatric Surgeon at another center, where the child was admitted and started on IV antibiotics and IV fluids. Upper GI contrast study was done which showed dilated proximal small bowel loops and absence of distal bowel gas. The patient was referred to our center; on arrival, the patient’s heart rate was 140 beats per minute, and respiratory rate of 42 breaths per minute.

Oxygen saturation was 97% on ambient air and nasogastric output was bilious. The abdomen was distended, soft, the hernial sites were normal, and the anal opening was normally located. On auscultation, bowel sounds were exaggerated. A supine radiograph of the abdomen showed dilated central small bowel loops but no air shadows in the pelvis (Fig.1). Ultrasound of the abdomen showed dilated gas-filled bowel loops and Doppler showed normal orientation of superior mesenteric vessels. Laboratory examination showed a normal CBC and serum electrolytes.
A diagnosis of intestinal obstruction was made; however, the clinical and radiological features did not point at any likely etiology. As the patient had acute intestinal obstruction, he was taken up for emergency exploratory laparotomy. The intraoperative findings showed dilated small bowel loops with an intraluminal soft, globular foreign body impacted in the distal ileum (Fig.2). The bowel was opened longitudinally over the foreign body which was found to be a swollen raisin that had imbibed fluid and swollen up and was completely obstructing the narrow lumen of the terminal ileum (Fig.3). The raisin was removed and the enterotomy was closed. On re-inquiry, it was found that the elder sister who was five years old, playfully put a raisin into the mouth of the newborn, which went unnoticed by the parents. Postoperative recovery was uneventful, and the patient was discharged in good clinical condition. The child was initially on 3 monthly follow up for one year. During the last follow-up, he was 2 years old, asymptomatic, and had normal developmental milestones.

**DISCUSSION**

Our patient developed features of intestinal obstruction on the second day of life, though the baby passed meconium spontaneously on the first day of life and tolerated breastfeeding initially, thus minimizing the possibility of congenital causes of neonatal intestinal obstruction. The abdominal radiograph showed dilated central small bowel loops but the absence of gas shadows in the pelvis indicating a small bowel obstruction. The malrotation was also ruled out in our patient based on history, x-ray, and doppler findings.

The operative findings were surprising and brought forth an unusual cause of the neonatal intestinal obstruction. The newborn Hindu ritual of putting a drop of honey and ghee (clarified butter) is known as “Jatakarma.”[4] The elder sibling tried to imitate the father with a raisin and, it is likely that a small raisin was swallowed easily by the neonate without choking. During the time taken for its transit in the gut, the raisin had imbibed fluids and swollen up to cause intestinal obstruction.

The occurrence of a swallowed foreign body in a neonate is rare with only a few cases reported. If the incident has not been witnessed and the ingested object is radiolucent, the diagnosis of foreign body ingestion can be very tricky in neonates.[5] Patients and their families are rarely aware of swallowed foreign bodies, which could cause complete intestinal obstruction or even intestinal perforation.[4] The literature on ingested foreign bodies in neonates is limited to case reports which have been tabulated in Table 1. The most-reported esophageal foreign body in a neonate is a swallowed endotracheal tube (ETT).[5] Other ingested foreign bodies reported are stones, button, nail, thumbtack, marble, bean, etc. as mentioned in Table 1.[3],[5-21] Sharma et al, [9] in 1993 reported a case of a cotton ball phytobezoar in a neonate, wherein the neonate accidentally swallowed a cotton ball which was being used to administer sweetened water as part of a ritual in north India.

Bezoars are rare in neonates. Based on their composition, they are classified into phytobezoars (concretions of vegetable matters), trichobezoars (hair), lactobezoars (concentrated milk formulas), pharmacobezoars (drugs), and food bolus bezoars. Phytobezoars are con-
cretions of indigestible fibers derived from ingested vegetables and fruits. They have been ascribed to the ingestion of mainly persimmon, coconut fibers, celery, skin, and stems of grapes, prunes, raisins, leek, mallow, and wild beets.[22] The mechanism of phytobezooar formation from plant substances is probably mechanical and depends upon the insoluble and indigestible fiber content.[22] They are commoner in adults and rarely reported in the pediatric age group.[23] The most common site of formation is the stomach and it is not unusual to find parts of phytobezooar in the small bowel.[24] Primary small bowel phytobezooars are rare and are almost always obstructive. They usually become impacted in the narrowest portion of the small bowel, the commonest site being the terminal ileum followed by the jejunum. [25] In our patient, the raisin had gradually swollen up and got impacted in the terminal ileum causing the obstruction, which could be discovered only after an enterotomy.

Table 1: Literature on ingested foreign bodies and bezoars in neonates.

<table>
<thead>
<tr>
<th>Sr #</th>
<th>Author</th>
<th>Year</th>
<th>Age</th>
<th>Foreign body</th>
<th>Location</th>
<th>Clinical presentation</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dogruyol H et al [6]</td>
<td>1989</td>
<td>4 days</td>
<td>Bean</td>
<td>Esophagus</td>
<td>Vomiting</td>
<td>Turkey</td>
</tr>
<tr>
<td>2</td>
<td>Chowdhury CR et al [7]</td>
<td>1992</td>
<td>3 weeks</td>
<td>Button</td>
<td>Esophagus C7 level</td>
<td>Episode of cyanosis followed by a persistent cough</td>
<td>Germany</td>
</tr>
<tr>
<td>3</td>
<td>Thapa BR et al [8]</td>
<td>1993</td>
<td>13 days</td>
<td>Stone</td>
<td>Upper esophagus</td>
<td>Elder sibling inserted. Symptoms mimicked TEF</td>
<td>India</td>
</tr>
<tr>
<td>4</td>
<td>Sharma LK et al [9]</td>
<td>1993</td>
<td>6 days</td>
<td>Cotton ball</td>
<td>Lower esophagus</td>
<td>Frothy salivation, simulating Esophageal atresia. Diagnosed on esophagoscopy</td>
<td>India</td>
</tr>
<tr>
<td>5</td>
<td>Tander et al [3]</td>
<td>1999</td>
<td>4 days</td>
<td>Fresh grape</td>
<td>Ileocecal junction</td>
<td>Small bowel obstruction</td>
<td>Turkey</td>
</tr>
<tr>
<td>7</td>
<td>Tasneem Z et al [5]</td>
<td>2004</td>
<td>3 days</td>
<td>Finger ring</td>
<td>Upper esophagus</td>
<td>Witnessed accidental ingestion Premature baby, accidental esophageal intubation</td>
<td>Pakistan</td>
</tr>
<tr>
<td>9</td>
<td>Tarnowska et al [12]</td>
<td>2010</td>
<td>8 days</td>
<td>Cotton buds</td>
<td>Lower esophagus</td>
<td>Esophageal atresia</td>
<td>Poland</td>
</tr>
<tr>
<td>10</td>
<td>B Mirza et al [13]</td>
<td>2010</td>
<td>2 days</td>
<td>Silicone suction catheter</td>
<td>Esophagus</td>
<td>Witnessed accidental ingestion during suctioning</td>
<td>Pakistan</td>
</tr>
<tr>
<td>11</td>
<td>Ranju Singh et al [14]</td>
<td>2012</td>
<td>12 days</td>
<td>Button battery</td>
<td>Upper esophagus</td>
<td>Vomiting, drooling of saliva</td>
<td>India</td>
</tr>
<tr>
<td>12</td>
<td>Baldev Singh et al [15]</td>
<td>2013</td>
<td>30 days</td>
<td>Glass marble</td>
<td>Upper esophagus</td>
<td>Vomiting, drooling of saliva</td>
<td>India</td>
</tr>
<tr>
<td>13</td>
<td>Ehtesham HS et al [16]</td>
<td>2015</td>
<td>21 days</td>
<td>Marble</td>
<td>Cervical esophagus</td>
<td>Respiratory distress due to compression of trachea by marble</td>
<td>India</td>
</tr>
<tr>
<td>14</td>
<td>Kazi et al [17]</td>
<td>2015</td>
<td>7 days</td>
<td>Nail</td>
<td>Upper esophagus</td>
<td>History of elder sibling putting a nail in the neonate’s mouth to keep him quiet</td>
<td>Pakistan</td>
</tr>
<tr>
<td>15</td>
<td>Srikanth KP et al [18]</td>
<td>2016</td>
<td>4 days</td>
<td>Medicine dropper</td>
<td>Mid esophagus</td>
<td>Witnessed accidental swallowing Simulating Esophageal atresia</td>
<td>India</td>
</tr>
<tr>
<td>16</td>
<td>Prashant Patil et al [19]</td>
<td>2016</td>
<td>5 days</td>
<td>Finger ring</td>
<td>Cricopharynx</td>
<td>Right pneumothorax</td>
<td>India</td>
</tr>
<tr>
<td>17</td>
<td>Vijay Pujar et al [20]</td>
<td>2019</td>
<td>6 days</td>
<td>Betel nut pieces</td>
<td>Mid esophagus</td>
<td>Homicidal, Simulating Esophageal atresia</td>
<td>India</td>
</tr>
<tr>
<td>18</td>
<td>Md Kamran et al [21]</td>
<td>2020</td>
<td>25 days</td>
<td>Pencil spring</td>
<td>Cecum</td>
<td>Cecal perforation</td>
<td>Pakistan</td>
</tr>
</tbody>
</table>
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To conclude, rare causes of neonatal intestinal obstruction need to be considered when the clinicoradiological features do not point to a specific etiology. Knowledge of local traditional practices and rituals is at times the most important pointer towards the etiology of a clinical condition. The basic clinical skill of history taking is still so important despite the availability of advanced radiological investigations.

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REFERENCES


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