CASE REPORT

Wild Banana Seed Phytobezoar Rectal Impaction Causing Intestinal Obstruction

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Abstract Wild banana (*Musa acuminata* subsp. *microcarpa*) seed phytobezoar rectal impaction in adult is a rare entity. Here, we report a 75-year-old male with dementia who presented with lower abdominal pain, per-rectal bleeding and overflow faecal incontinence. Our investigation discovered a large wild banana seed phytobezoar impacted in the rectum causing intestinal obstruction, stercoral ulcer and faecal overflow incontinence. In this article, we discuss the patient's clinical findings, imaging and management. The culprit plant was identified and depicted. This may be the first report of its kind. Public consumption of these wild bananas should be curtailed. It is hoped that this report would increase the awareness of such condition and its identification.

Keywords Intestinal obstruction · Faecal impaction · Bezoar · *Musa* sp. · Borneo · Malaysia

Introduction

Phytobezoar is a rare cause of mechanical intestinal obstruction. Although there have been several reports on sunflower, prickly pear and pumpkin seed phytobezoar impacted in the rectum [1, 2], to the best of our knowledge, wild banana (*Musa acuminata*) seed phytobezoar has not been reported to be impacted in the rectum, leading to faecal overflow incontinence, stercoral ulcer and gross intestinal obstruction.

Case Report

A 75-year-old man with mild dementia presented with 1-day history of severe urge to defecate, lower abdominal colic and per-rectal bloody liquid stool. There was no history of similar episode, loss of appetite, weight loss or fever prior to this. His medical, surgical and medication history was unremarkable. Further history from his son revealed that patient had been consuming large amount of wild bananas (*M. acuminata* subsp. *microcarpa*) (Fig. 1a) in the past 6 months whenever he was hunting in the jungle. He swallowed all the bananas with its seeds.

On his physical examination, his vital signs were normal with no dehydration or fever. His abdomen was distended and tender at the lower abdomen, without peritonism, organomegaly or any mass felt. The bowel sound was hyperactive. Per-rectal examination found a large hard lump in the rectal vault with irregular and rough surface.

Fig. 1 a *Musa acuminata* subsp. *microcarpa* and its seeds within. b The seed phytobezoar evacuated from the rectum by digital disimpaction

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Proctoscopy revealed multiple small stone-like objects tightly packed in the rectal vault causing surrounding mucosal erosions with minor oozing. His laboratory investigation results were unremarkable. Later, a plain supine abdominal radiograph showed multiple loops of dilated large and small bowel and a mass shadow in the rectum (Fig. 2).

We performed per-rectal examination under general anaesthesia and manually evacuated the hard irregularly shaped seed phytobezoar with digital disimpaction. Around 500 g of seeds was evacuated (Fig. 1b).

The patient recovered well post procedure. He was discharged after 2 days of hospital observation. A follow-up colonoscopy at 1 month after discharge was normal.

Discussion

There have been very limited data of rectal phytobezoar in the literature. Specifically, we are unable to identify any report on wild banana (*M. acuminata* subsp. *microcarpa*) seed phytobezoar impaction in the rectum which leads to faecal overflow incontinence, stercoral ulcer and gross intestinal obstruction. This may be the first report of its kind. It is hoped

Fig. 2 Abdominal x-ray showed dilated large and small bowel. White solid arrow indicates the seed bezoar shadow

that this report would increase the awareness of such condition and its identification.

Phytobezoar is a concretion of indigestible material of plant origin found in the gastrointestinal tract. Its formation is mechanical, depending on its insoluble and indigestible content mixture. Its size may grow with the persistent ingestion of food rich in cellulose and the indigestible materials. Its impaction is most common at terminal ileum and before ileocaecal valve [3].

Colorectal phytobezoar impaction is rare due to the larger diameter of the large intestine lumen. The composition of rectal phytobezoar varies greatly with geography, with the watermelon seeds and prickly pear seeds being the most common in the Middle East [2], whereas the wild bananas (*M. acuminata* subsp. *burmannica*) seed phytobezoars being most commonly seen in Laos [3, 4]. This is due to the distribution of the plants and dietary habits of the local community.

Bananas (*Musa* sp.) contain tannins, a type of water-soluble phenolic that gives the astringent taste of unripe bananas. Tannin has the ability to interact with pectins and form insoluble complexes [5]. When ripe, there is an inactivation of tannin in the cultivated bananas. In contrast, wild bananas (*M. acuminata*) keep their astringency and tannin even when ripe [3]. In combination with its abundant hard and indigestible seeds, tannin became the medium that congregated the seeds.

Therapy of phytobezoar is based on its location in the gastrointestinal tract. It needs to be evacuated, particular in cases where it is associated with intestinal obstruction or perforation. Current available options are chemical dissolution, endoscopy, surgery and digital disimpaction [2, 3, 6]. Rectal phytobezoars are commonly within reach by digital disimpaction [2], while phytobezoars in the colon may be removed endoscopically or surgically and phytobezoars in the small intestine are commonly evacuated surgically [1, 3, 4].

The public needs to be educated regarding the risk of consuming wild bananas together with its seeds, especially during fasting season for cultural practice, and dehydration due to lack of water intake during hunting or agriculture work. This is especially so in the Asia continent, where these wild bananas grow abundantly and is easily accessible.

Conclusion

Wild banana (*M. acuminata*) seeds can form bezoar if consumed in a large amount. It is a preventable cause of intestinal obstruction. Public and medical awareness on such complication should be raised to prevent its occurrence and promote early recognition.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no competing interests.

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