

Incidental Detection of Foreign Body (bezoar) inside the Stomach in Fatal Poisoning Cases: Reporting of a Series of Cases with Rare and Unusual Autopsy Findings

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Abstract

A bezoar is an accumulation of undigested foreign material in the gastrointestinal tract, which can lead to serious, life-threatening conditions. While bezoars are often associated with mental disorders such as pica, they are also found in individuals without such histories. In many cultures, including rural India, bezoars are believed to possess medicinal properties, such as the ability to neutralize poisons, including snake venom. Traditional healers, known as "Ojha," use bezoars as a form of treatment despite the lack of scientific evidence supporting their efficacy.

This case series presents two incidents where bezoars were discovered postmortem. The first case involves a 9-year-old boy who succumbed to snakebite poisoning, and the second case involves a 1-year 6-month-old child who died from paraquat poisoning. Both deaths occurred at a government hospital, and during the autopsy, bezoars were unexpectedly found in the stomachs of both individuals. This finding highlights the continued belief in the curative properties of bezoars despite their lack of medicinal value in modern medicine.

Keywords: bezoar, gastroenterology, postmortem examination, ancient toxicology.

Introduction

Bezoars are conglomerates of indigestible materials that accumulate within the gastrointestinal tract^{1,2}. Historically, they were esteemed in various cultures for their purported medicinal properties, particularly as universal antidotes against poisons, including snake venom. However, contemporary

medical understanding recognises that bezoars, typically composed of substances like hair, fibres, or plant material, lack scientific efficacy in neutralising toxins^{3,4,5}. The standard treatment for venomous snake bites is the prompt administration of antivenom, accompanied by supportive care in a medical facility. Similarly, paraquat poisoning necessitates immediate

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medical intervention due to its high toxicity^{6,7}. This report discusses two rare cases where bezoars were incidentally discovered in the stomachs of deceased individuals who succumbed to snakebite and paraquat poisoning, respectively.

Case histories:

Case 1: A 9-year-old boy was bitten on his left ankle by an unidentified snake while playing in a field. He was initially treated at Srerampore Walsh Super Speciality Hospital and subsequently transferred to the Medical College and Hospital, Kolkata, on the same day. Despite medical efforts, he expired four days later, and a post-mortem examination was conducted at the Kolkata Police morgue. In this case, a relative of the deceased stated that before being taken to the hospital for treatment, the deceased was initially taken to a local traditional healer or Ojha. It was only when his condition deteriorated that he was taken to the hospital.

Case 2: A 1-year-6-month-old male child was admitted to the Medical College and Hospital, Kolkata, following the homicidal ingestion of paraquat poison administered by his mother. The child was brought to the hospital by his father, but unfortunately passed away five days later. A post-mortem examination was performed at the Kolkata Police morgue. In this case, such history like taken to local traditional healer or Ojha was unclear and incomplete.

Autopsy findings:

Case 1:

External Examination:

Peripheral intravenous lines were present on the dorsum of both wrists and in both cubital fossae, with a central line in the right internal jugular vein.

A stitched wound with two sutures was located 2 cm below the umbilicus along the midline of the anterior abdomen, likely indicating a peritoneal dialysis port.

Two puncture wounds, spaced 1.5 cm apart vertically, were observed medially on the left ankle, situated 3.5 cm proximal and anterior to the tip of the left medial malleolus.

Both conjunctivae were congested, and the pupils were fixed and dilated.

Bluish discoloration was noted on the fingertips and nail beds bilaterally.

Internal Examination:

Diffuse blood extravasation surrounded the puncture wounds over the left medial malleolus.

Extensive blood extravasation was present in the retropharyngeal and prevertebral spaces of the neck, as well as the retroesophageal space.

Diffuse blood extravasation was noted around the lesser curvature of the stomach.

All organs exhibited significant congestion, with marked medullary haemorrhage in both kidneys.

The brain was congested and oedematous.

Yellowish-brown fluid was found in both pleural cavities, indicating pleural effusion.

Upon dissecting the stomach, a 300-gram greenish-yellow, solid yet soft, roundish mass was discovered, seemingly composed of mud, sand, and fibrous plant material.



Fig. 1: Showing the body of the deceased in case-1





Case 2:

External Examination:

Peripheral intravenous lines were present on the dorsum of both wrists, with a central line in the left femoral vein.

Erosion and ulceration were noted on the inner aspects of the lips, gums, and tongue.

Both conjunctivae were congested, and the pupils were fixed and dilated.

Bluish discoloration was observed on the fingertips and nail beds bilaterally.

Internal Examination:

All organs were congested, with fibrosis noted in both lungs and cortical haemorrhage in both kidneys.

Oesophageal corrosion was evident.

Upon dissecting the stomach, a 200-gram yellowish, solid yet soft, roundish mass was found, seemingly composed of mud and sand, accompanied by gross submucosal haemorrhage.



Fig 8: showing the body of the deceased of case -2

Fig 9: shows the corrosion of the lips and gum.

Fig 10: subcapsular haemorrhage on the diaphragmatic surface of liver

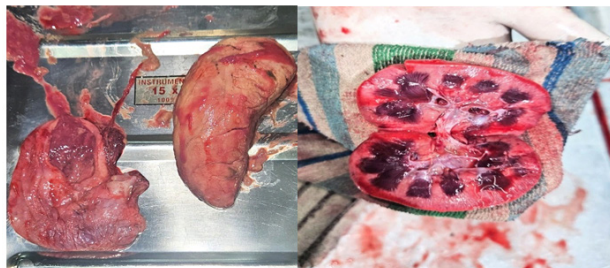


Fig 11: shows a corticomedullary haemorrhage on the kidney. Fig 12: shows the stomach with the whole bezoar



Fig 13: weights of the Bezoar. Fig 14: shows the cross-section of the Bezoar.

Microscopic Examination:

Under an optical microscope, the bezoar revealed the presence of glass particles, which appeared as transparent, irregularly shaped, and highly refractive structures. The glass particles exhibited varying thickness and texture, reflecting light in distinctive patterns. Their presence suggests possible ingestion of glass-containing materials, either accidentally or intentionally. This unusual finding necessitates further investigation into the patient's medical history and potential exposure to foreign materials.

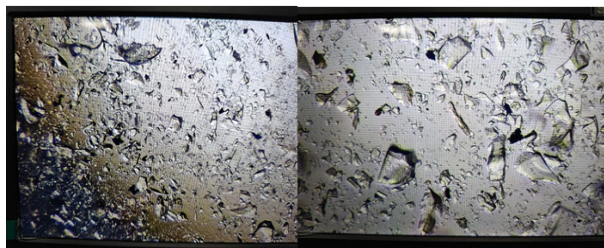


Fig. 15 & Fig 16, show varying thicknesses, irregular shapes, and highly refractive glass particles.

Discussion

In these cases, the incidental discovery of bezoars during post-mortem examinations suggests the possible ingestion of herbal concoctions or traditional remedies, possibly administered in an attempt to counteract the effects of snake venom or paraquat poisoning. Bezoars are typically classified based on their composition³:

Phytobezoars: Composed of indigestible plant fibres.

Trichobezoars: Comprised of hair.

Pharmacopoeias: Formed from medications.

Foreign Body Bezoars: Resulting from the ingestion of foreign materials.

The presence of materials such as mud, sand, and fibrous plant matter in the bezoars of both cases aligns with the characteristics of phytobezoars and foreign body bezoars. The formation of such bezoars can lead to gastrointestinal complications, including obstruction, ulceration, or perforation⁸⁻¹².

Cultural practices in various regions, including parts of India, involve the use of traditional remedies believed to neutralize poisons. These remedies may consist of plant-based concoctions or other substances administered orally. However, the efficacy of such treatments is not supported by scientific evidence and may delay the administration of appropriate medical care, thereby exacerbating the patient's condition⁵.

The ingestion of indigestible materials as part of these traditional practices can lead to bezoar formation. In the context of acute poisoning, the presence of a bezoar may complicate the clinical picture, potentially diverting attention from the primary toxicological emergency. This underscores the importance of healthcare.

Conclusion

Bezoars, historically believed to possess medicinal and detoxifying properties, continue to be associated with traditional healing practices in certain cultures. However, their efficacy in treating snake

bites or poisoning lacks scientific validation. In these rare post-mortem cases, bezoars were incidentally discovered in the stomachs of the deceased, suggesting the possible ingestion of traditional remedies containing indigestible materials. The presence of glass particles within the bezoar further indicates the potential consumption of foreign substances, either accidentally or intentionally.

These findings highlight the risks associated with superstitious treatments, which may not only be ineffective but also contribute to additional health complications. Delayed medical intervention due to reliance on such remedies can worsen the prognosis in cases of envenomation or toxic ingestion. This underscores the need for increased public awareness regarding the importance of evidence-based medical treatments and the potential dangers of traditional but scientifically unproven antidotes.

Consent: Written informed consent for publication of clinical details, post-mortem findings, and microscopical images was obtained from the autopsy surgeon, investigating police personnel, and the relative of the deceased.

Conflict of interest: The authors have no conflict of interest in this case report

Ethical clearance: Ethical clearance is obtained from the Institutional Ethics Committee. Date: 17/06/2025

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