# GASTROINTESTINAL BEZOARS

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## INTRODUCTION

A Bezoar is tightly packed mass of foreign material in the gastrointestinal tract of man and animals. The mass may originate from fruit, vegetable matter, hair and other materials that form in G.I.T.[1,2] Both human and animal bezoars are known since antiquity.[1] Originally worn as charms and promoted as remedies to prevent diseases, bezoars were also grounded into portions for use as antidotes; hence the origin of word from the Arabic (badzehr), Persian (padzahr) and Turkish (panzehir), root meaning "Counter poison".[1] In more modern times the presence of bezoar stone found amongst the crown jewels of queen Elizabeth-I not withstanding, the possession of a bezoar is no longer regarded as bestowing magical power of regal statute.

## CASE REPORT

A young lady aged 25 years was admitted to surgical unit of PGMI/LRH with upper abdominal pain of three months and hemetemesis of one day duration. She was psychologically unwell and had been under care of psychiatrist now and then. On clinical examination she was pale looking, had rapid pulse and blood pressure of 90/60. She was tender in upper abdomen and had a vague mass in upper abdomen especially in left hypochondrium. Her hemoglobin was 9.0 gm%. Other routine investigations were within normal limit. She was scoped the same day and was diagnosed to be having a trichobezoar in the stomach causing massive ulceration. She was given blood transfusion preoperatively and operated next day. The trichobezoar which was filling the whole stomach was removed through anterior oblique gastrotomy. (Fig-I) The bezoar had caused extensive ulceration of gastric mucosa. She had uneventful recovery and was discharged home after one week.

## DISCUSSION

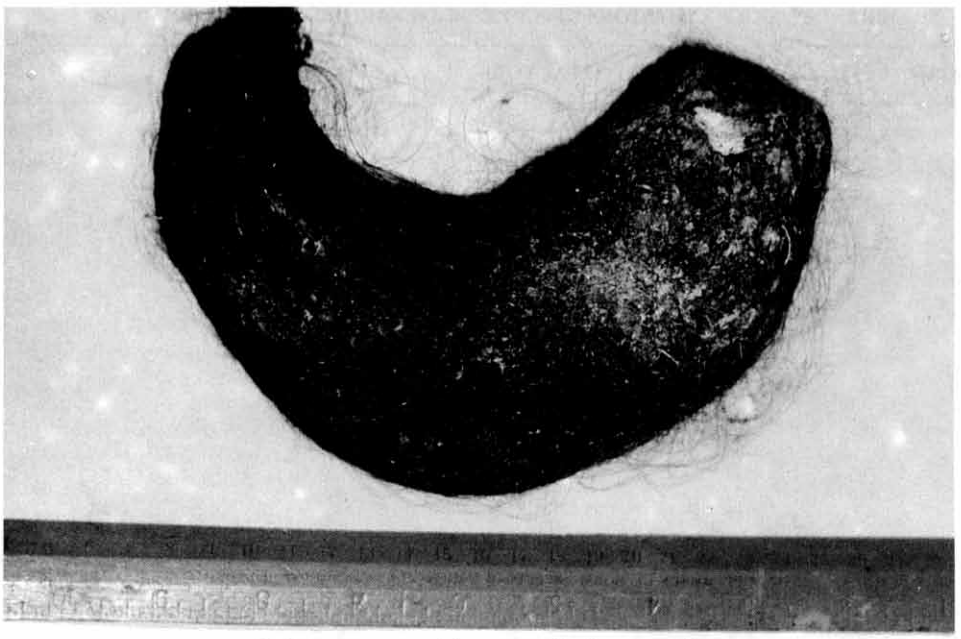
Majority of the cases of bezoar occur before the age of 30 years with peak incidence in second decade. Trichobezoars are rarely seen in children and more than 90% are reported in female especially with long hair as in our case.[2,10] There is history of trichotillomania or trichophagy with underlying psychological disturbance. Patient will present with upper G.I. disturbances like nausea, vomiting, weight loss, malaena and hemetemesis as in our case which is not frequently reported in literature. Hemetemesis is because of pressure necrosis of gastric wall especially lesser curvature ulceration. It may lead to free perforation and peritonits.[27] Cases of B-12 deficiency anemia, extension in to the duodenum

**PREDISPOSING CONDITIONS GIVING RISE TO VARIOUS TYPES OF BEZOARS**

| BEZOAR TYPE | PREDISPOSING FACTORS |
|---|---|
| Phytobezoar | Prior Gastric Surgery[1,4,5,26,29] |
| | Loss of pyloric function |
| | Vagotomy leading to reduce gastric acidity & gastric stasis |
| | Inadequate mastication edentulism |
| | Gastric Atony (diabetic gastroparesis, Mytonic dytrophy) |
| | Diffuse esophageal spasm[15,17] |
| | Persimmons ingestion (Shiboul tannin) |
| | Sunflower seed bezoar[18] |
| | Excessive orange pulp ingestion |
| | Mechanical & enzymatic fragmentation of bezoar |
| | Small bowl diverticulum |
| | Late result of neonatal jejunal atresia[8] |
| | Zenker's bezoar (in zenker's diverticulum),[15] |
| | Trichobezoar Trichophagia, ingestion of carpet fibres toy industry, doll's hair[1] |
| Lactobezoar | Premature infant with delayed gastric emptying & respiratory distress syndrome, |
| | Concentrated infant formula, |
| | Dehydration.[1,10,23] |
| Medication Bezoar | Cholestyramine, Kayexalate resin |
| Pharmacobezoar[1,11] | Aluminium hydroxide gel & sucralfate[1,10,17] |
| | Vitamin C tablets, antacid tablets, iron tab.[1,16] |
| | Psyllium seed husk[3] |
| | Ginger[11] |
| | Nefidipine GITS bezoar[14,19,31] |
| | Caecal vitamin bezoar[21] |
| | Lecithin[20] |
| | Cimetadine therapy[4] |
| Food bolus bezoar | Candy bezoar[24] |
| | Incomplete mastication, rapid deglutition, international swallowing of large nuts and orange pits. |
| | Intestinal narrowing due to adhesions and congenital bands stricture or physiologically narrow segment. |

Bezoars have also been reported in extra gastrointestinal situations like urinary tract. They are mostly Fungal Bezoar .[7,22,25]

leading to obstructive jaundice and pancreatitis have also been reported.[2] It can also lead to small bowel obstruction alone or with perforation. Pathologically initially the hair strand become retained in the folds of gastric mucosa because their slippery surface prevent propulsion by peristalsis. As more and more hair are added peristalsis cause it to be enmeshed until a ball forms too large to leave the stomach (Fig-1). The large quantity of hair become firmly matted together to assume shape of stomach (Fig). Usually the diagnosis is confirmed on plain X-ray and gastroscopy. Phytobezoars are



Trichobezoar removed from stomach of a young lady
The bezoar showing hair has assumed the shape of stomach

usually seen in elderly people and majority of them are due to unripe persimmons but orange peel, cabbage roots skin of plum, seeds and leaves can mould to form compact mass.[9] They are soft when fresh but later on crumble easily. They become foul smelling and dark brown in color due to fermentation and decomposition of fats trapped in the interstices and cause characteristic putrid smell.[2] The possible explanation for the formation of these types of bezoars is presence of soluble chemical substances present in unripe persimmons which under the influence of gastric juice is transformed into sticky coagulum cementing into a ball which contain insoluble and indigestible pieces of skin, seeds, vegetable fibers etc.[9] Various types of bezoars and their predisposing factors are given in the table. The major cause of phytobezoars is previous G.I. surgery though they have been reported in intact G.I.T.[12] Various methods of treatment of bezoar have been reported in literature like endoscopic fragmentation, open surgical procedure, chemical/enzymatic dissolution and extracorporeal shock wave lithotripsy. Most of the trichobezoars due to entangled hair will not respond to endoscopic fragmentation or other modes of treatment and so preferable treatment would be an open surgical procedure in all cases and specially when the bezoar is palpable clinically and is large and hard to avoid complications. Most of other type of bezoars are being treated conservatively by enzymatic solutions.[32] Other used solution containing acetylcystine in normal saline, cellulose and papsin.[9] Stafford et al and many other do not advocate endoscopic fragmentation because of potential serious complications due to daughter balls[2,4,6] but Chung SCS et all favour endoscopic treatment if in stomach or upper intestine.[30] However we are of the opinion that open surgery should be under taken in all cases to avoid possible complication. Gastric bezoars have also been treated by extracorporeal shock wave lithotripsy (ESWL).[28]

Bezoars have also been reported in extra gastrointestinal situations like urinary tract. They are mostly fungal bezoar.[7,22,25]

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