

## Incidence and Types of Herbal Remedies as a Cause of Bowel Perforation

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**Abstract: Objective:** To study the incidence and types of herbal remedies as a cause of bowel perforation. **Method:** This is a retrospective review of all patients who were diagnosed with bowel perforation at King Abdulaziz University Hospital between January 2005 and November 2013. The patients' medical records were reviewed for demographic data, causes of the bowel perforation, types of foreign bodies if any, clinical picture and management. The data were entered and analyzed using the statistical package for social sciences (SPSS Inc, Chicago, IL, USA), version 20.00. **Results:** Total of 36 cases of bowel perforation, 20 were males (55.6%) and 16 were females (44.4%). The mean age was 45.17±15.95 years old (range 13-85). The most common cause of bowel perforation was foreign body ingestion as it was found in 13 patients (36.1%); it was followed by intestinal obstruction in 6 patients (16.8%), diverticular disease in 5 patients (14.0%), iatrogenic in 4 patients (11.1%), Crohn's disease in 3 patients, blunt injury in also 3 patients (8.3%), and the least common cause was malignancy in 2 patients (5.6%). The most common foreign body was herbal remedies in 8 patients (22.3%); Ginger in 4 patients (11.1%); Anise in 2 patients (5.6%); Ginseng in 1 patients (2.8%) and Liquoric in 1 patient (2.8%). There was no association between age nor gender and bowel perforation secondary to herbal remedies ingestion ( $p$ -value = 0.1). Other foreign bodies were fish bones in 3 patients (8.4%), chicken bone in 1 patient and plastic piece in 1 patient (2.8%). **Conclusion:** Herbal remedies ingestion formed 22.3% of our bowel perforation cases. Ginger was the most common herb. At national level, patient's education about complications of herbal remedies ingestion and risks of bowel perforation is needed to increase the community awareness regarding this problem and take the proper precautions before taking such remedies in order to avoid bowel perforation.

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**Keywords:** Bowel perforation, intestinal perforation, herbal remedies ingestion, foreign body, Ginger.

### 1. Introduction:

Bowel perforation is a surgical emergency that needs emergent proper intervention in most of the cases to avoid many serious complications (1). Common causes are intestinal obstruction, inflammatory bowel disease, diverticular disease, bowel malignancy and bowel infection (2). Less common cause is trauma either caused by external blunt injury or foreign body ingestion (3).

Foreign body ingestion is more common in children but also reported in mentally ill adults or happened accidentally in normal ones (4). Many studies in the literature reported cases of foreign body ingestion that were complicated with bowel perforation in about 1%. Most common foreign bodies that observed were fish bone, chicken bone, toothpicks and dentures (5).

Among Saudi population, oral herbal remedies are commonly consumed for medical or health enhancing purposes. Sometimes, these herbal remedies contain sharp end sticks which may perforate the bowel wall if proper precautions were not taken. This study was

conducted to determine the incidence and types of herbal remedies as a cause of bowel perforation.

### 2. Method

A retrospective study of all patients who were diagnosed with bowel perforation at King Abdulaziz University (KAUH) between January 2005 and November 2013 (total of 36 patients both males and females) was undertaken. Patients younger than 10 years old were excluded. KAUH is the only university teaching hospital and one of four tertiary hospitals in the western region of Saudi Arabia, with capacity of 754 beds.

Patients' medical records were reviewed after we obtained approval from the local ethics committee. Data sheet was designed and divided to include patient's age, gender, cause of the bowel perforation, types of foreign bodies if any, clinical picture and management.

The data were entered and analyzed using the statistical package for social sciences (SPSS Inc, Chicago, IL, USA), version 20.00. The quantitative data were presented in the form of mean, standard

deviation and range. Chi-square test was done to compare qualitative data. We considered statistical significance when  $P$  value  $> 0.05$  and confidential interval of 95 percent.

### 3. Results

Total of 36 cases of bowel perforation, 20 were males (55.6%) and 16 were females (44.4%). The mean age was  $45.17 \pm 15.95$  years old (range 13-85). Table (1) shows the demographic data of the patients with bowel perforation.

**Table (1): Demographic data of the bowel perforation's patients**

	Frequency (n=36)	Percentage (%)	Age
<b>Male</b>	<b>20</b>	<b>55.6</b>	<b>Mean=43.75±16.55 Range (13-85)</b>
<b>Female</b>	<b>16</b>	<b>44.4</b>	<b>Mean=46.94±15.52 Range (23-77)</b>
<b>Total</b>	<b>36</b>	<b>100</b>	<b>Mean=45±15.95 ange (13-85)</b>

**Table (2): Causes of bowel perforation**

Cause	Frequency (n=36)	Percentage (%)
<b>Foreign Bodies</b>	<b>13</b>	<b>36.1</b>
Male	5	14.0
Female	8	22.3
<b>Intestinal Obstruction</b>		
Male	<b>6</b>	<b>16.8</b>
Female		
	3	8.3
	3	8.3
<b>Diverticular Disease</b>	<b>5</b>	<b>14.0</b>
Male	2	5.6
Female	3	8.3
<b>Iatrogenic</b>	<b>4</b>	<b>11.1</b>
Male	3	8.3
Female	1	2.8
<b>Crohn's Disease</b>	<b>3</b>	<b>8.3</b>
Male	2	5.6
Female	1	2.8
<b>Blunt Injury</b>	<b>3</b>	<b>8.3</b>
Male	3	8.3
Female	0	0.0
<b>Malignancy</b>	<b>2</b>	<b>5.6</b>
Male	1	2.8
Female	1	2.8

The most common cause of bowel perforation was foreign body ingestion as it was found in 13 patients (36.1%); it was followed by intestinal obstruction in 6 patients (16.8%), diverticular disease in 5 patients (14.0%), iatrogenic in 4 patients (11.1%), Crohn's disease in 3 patients, blunt injury in also 3 patients (8.3%), and the least common cause was malignancy in 2 patients (5.6%). These causes are described in Table (2).

The most common foreign body was herbal remedies in 8 patients (22.3%); Ginger in 4 patients (11.1%); Anise in 2 patients (5.6%); Ginseng in 1 patients (2.8%) and Liquorice in also 1 patients (2.8%). There was no association between age nor gender and bowel perforation secondary to herbal remedies ingestion ( $p$ -value = 0.1). Table (3) shows incidence of bowel perforation secondary to herbal remedies ingestion.

**Table (3): Incidence of bowel perforation secondary to herbal remedies ingestion.**

Type of herbal remedy	Frequency (n=36)	Percentage (%)
<b>Ginger</b>		
Male	4	11.1
Female		
	1	2.8
	3	8.3
<b>Anise</b>	2	5.6
Male	1	2.8
Female	1	2.8
<b>Ginseng</b>	1	2.8
Male	0	0.0
Female	1	2.8
<b>Liquoric</b>	1	2.8
Male	0	0.0
Female	1	2.8

Other foreign bodies found were fish bones in 3 patients (8.4%), chicken bone in 1 patient and plastic piece in also 1 patient (2.8%) as shown in Table(4).

**Table (4): Incidence of bowel perforation secondary to foreign body ingestion.**

The Foreign Body	Frequency (n=36)	Percentage (%)
<b>Herbal Remedies</b>	8	22.3
Male	2	5.6
Female	6	16.8
<b>Fish Bone</b>	3	8.4
Male	2	5.6
Female	1	2.8
<b>Chicken Bone</b>	1	2.8
Male	0	0.0
Female	1	2.8
<b>Other (Plastic Piece)</b>	1	2.8
Male	1	2.8
Female	0	0.0

Clinical Picture of bowel perforation varies but acute abdominal pain was found to be the most common presenting symptom, it was reported in 33 patients (91.7%) followed by vomiting in 22 of patients (61.1%). Bowel perforation was managed by laparotomy in 33 patients (91.7%), and endoscopically in only 3 patients (8.3%).

#### 4. Discussion

Bowel perforation is not uncommon surgical problem with an incidence varies between 0.8 and 18 % (6). If proper intervention were not taken, serious complications will be developed such as abscess formation, peritonitis, inflammatory mass, bowel obstruction and sepsis which lead to high morbidity and mortality rates (7).

In our study, we found 36 cases of bowel perforation over 8 years period; 13 cases of them were caused by foreign body ingestion. In a study by Goh et al, 62 patients were reported to have bowel perforation

secondary to foreign body ingestion between 1990 and 2005 (8). Another study by Versaci et al, reported only 5 cases of bowel perforation secondary to foreign body ingestion over 10 years period (9).

Regarding the common causes of bowel perforation, Eid et al, reported that the most common cause of bowel perforation in developing countries is typhoid fever which is similar finding reported by Sumer et al. On the other hand, the most common causes in developed countries are Crohn's disease and bowel malignancies (14, 15). In contrast, we found that the most common cause of bowel perforation was secondary to foreign body ingestion followed by intestinal obstruction and diverticular disease.

In regard to foreign bodies, fish bones, chicken bones, tooth picks and dentures were observed to be the most common ingested objects that cause bowel perforation (10-13). This is different from our findings as we found that herbal remedies ingestion is the most common foreign body that cause bowel perforation.

Herbal remedies, sometimes, contain sharp end sticks which may perforate the bowel wall if proper precautions were not taken. According to our knowledge, there were no other studies reported bowel perforation secondary herbal remedies ingestion.

#### Conclusion:

Herbal remedies ingestion formed 22.3% of our bowel perforation cases. Ginger was the most common herb. At national level, patient's education about complications of herbal remedies ingestion and risks of bowel perforation is needed to increase the community awareness regarding this problem and take the proper precautions before taking such remedies in order to avoid bowel perforation.

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