

Case Report



Sigmoid Resection and Primary Anastomosis Without Any Diversion or Exteriorization for Impacted Foreign Body in Sigmoid Colon

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Abstract

Colorectal Resections are very often required as an essential surgical procedure for various diseases. These resections are usually accompanied with various forms of diversions with or without primary colo-colonic or colorectal anastomosis. Classically, these are usually preceded by a standard form of bowel preparation. Here, a different form of colorectal surgery without preceding bowel preparation, colorectal resection and primary anastomosis were done, without any covering or defunctioning ileostomy or any other form of diversion or exteriorization and envisaged no complication. A psychiatric adult patient presented with self-introduction of a large foreign body (bobbin) through his anus. On laparotomy, FB (bobbin) impacted at the apex of the loop of sigmoid colon. It was so intensely impacted that milking towards the rectum without serious injury was totally impossible. Sigmoid resection and primary colorectal anastomosis without any form of ileostomy or similar type of diversion or exteriorization was performed. Just before anastomosis, faecal matters were removed as far as possible all from remaining both proximal and distal segments. Then digital anal stretching was done and put a transanastomotic flatus tube through anus. The flatus tube was removed on the 7th post operative day. The outcome was smooth and uneventful.

Keywords: Colo-rectal (CR), Foreign Bodies (FBs), Extraction.

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Introduction

Colorectal foreign bodies (CRFBs) are usually large foreign objects found in the colon or rectum that can be assumed to have been introduced through the anus, rather than reaching the colon and the rectum via the mouth and alimentary tract.¹ However orally swallowed fish bones and meat bones are not uncommon as these are when being unable to pass crossing the spasmodic anal canal (overlying mucosa of sphincters being irritated by the their sharp points). Anal sphincteric spasm or normal sphincteric tone makes the anal canal normally the narrowest part of the alimentary tract. CRFBs may be classified as. High-lying FBs that are above recto-sigmoid

junction. These are difficult to visualize and remove.² Low-lying FBs that are below the recto-sigmoid junction and normally palpable on DRE and easier to visualize and remove. Patients with CRFBs are usually aware of their presence and often present requesting removal.² and usually present with rectal pain, per rectal bleeding, constipation and pain in the abdomen. More serious complaints are indicative of perforation causing peritonitis, fever, vomiting, or severe pain etc. Assessment initially is by history taking and general examination with special attention to vital signs like Pulse, blood pressure, temperature, respiration etc. Large or high-lying FBs can occasionally be palpated abdominally.³

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Absent bowel sounds, abdominal rigidity and distension suggest perforation. Low lying foreign body may be palpated on DRE. Examining finger may be blood stained. Routine laboratory investigations are done to detect the general fitness of the patient. Plain X ray abdomen A/P, lateral and oblique views may show the position and nature of radio-opaque FBs. Free gas shadow under the domes of diaphragm indicates perforation. Invasive rigid or flexible proctosigmoidoscopy, colonoscopy may be indicated.⁴ Fluid and electrolyte resuscitation is indicated in cases of hypotension caused by perforation, sepsis or hemorrhage. The presence of frank blood is an indication of laceration or perforation, and warrants emergency surgical treatment. Methods of Extraction are 1. Trans-anal, 2. Endoscopic, 3. Laparotomy. Low-lying smooth, unbreakable, and non-friable FBs are amenable to trans-anal removal in the ED. Thin glass objects like light bulbs are not suitable for trans-anal extraction. Colonic FBs are much more likely to require operative intervention. Indications of laparotomy and extraction are -1 laceration, perforation or infection, 2. High-lying FB that cannot be moved to a low-lying position because of impaction, 3. The FB is made of glass, breakable or friable, 4. The FB is sharp or rough.⁵ The FB is otherwise dangerous.⁶ Extraction attempts in the ED have been unsuccessful.

Case Report

A Psychiatric male businessman, hailing from Belkucchi, Sirajganj presented with history of self-introduction of a conical plastic pipe (Bobbin) through his anal canal followed by rectal and abdominal pain, per rectal bleeding and difficulty in defecation for three days. The patient was mildly dehydrated, BP 135/75 mmHg, pulse 88/min and regular, nondiabetic with well body physique and no anaemia, no jaundice. Heart, Lungs, Skin, Lymph Nodes examinations revealed no abnormality. The abdomen was slightly distended, soft, tender (more over the hypogastrium) with no palpable mass and no ascites. Bowel sound was sluggish. Liver, Spleen, Kidneys were not palpable. DRE revealed empty rectum, no palpable foreign body and the examining finger was slightly blood stained. On laboratory investigation Hb (Haemoglobin) was 14.9 gm/dl, WBC 14.04×10^9 /L, with Polymorph 78%, Lymphocyte 18%, Monocyte 3%, Eosinophil 1%, Basophil 0%, peripheral blood film Normal, platelet count 208×10^9 /L. His blood group was A + ve, Random blood sugar (RBS) 5.02 mmol/L, S. Creatinine 88.90 micromol/L, S. Electrolytes : Sodium- 140.20 mmol/l, Potassium- 4.50 mmol/l, Chloride- 102.30mmol/l, Bicarbonate- 24.50mmol/l with Normal chest skiagram and normal ECG. Plain x-ray abdomen in erect posture A/P view showed a horizontally placed radio-lumut shadow of Bobbin just at the level of fourth lumbar vertebral body with no shadow of free gas under the domes of diaphragm, no abnormally distended bowel loops, no abnormal calcification and no air fluid level.



Figure 1. Plain X-ray showing horizontally placed foreign body at the level of 4th lumbar vertebral body.

Possibility of colonoscopic removal was consulted but the relatively large sized FB was deemed unsuitable for removal by fibre-optic flexible colonoscope. Initially the patient was treated by NPO (Nothing Per Oral), IV fluid, antibiotics etc. Then surgical intervention was contemplated to remove the foreign body. on next day admission under general anaesthesia, laparotomy was done through left lower paramedian incision. The bobbin was found at the apex of the loop of sigmoid colon with its relatively sharp and widest end pointing distally and the narrowest conical end pointing proximally. The bobbin was firmly impacted within the sigmoid colon and was not negotiable to manipulation distally (the sharp widest distal part impinging onto the sigmoid mucosa and sub-mucosa). The bobbin appeared to immovable having its intimate impaction and adherence with the mucosa and submucosa of the sigmoid colon. Then the loop of the sigmoid colon containing the bobbin was resected and primary (end to end colorectal) anastomosis was done. The large gut was not found loaded with much fecal matter. Before anastomosis, all fecal matters from the remaining proximal and distal parts was removed as much as possible manually and by sucker.



Figure 2. Showing resected segment of Sigmoid Colon and the large conical bobbin (FB).

No covering (defunctioning) ileostomy or colostomy or any other form of diversion or exteriorization was performed. Then anal stretching was done and a trans-anastomotic flatus tube was kept in situ (fixing externally with the gluteal skin). There was very mild fecal contamination during resection and anastomosis. The peritoneal cavity was thoroughly washed and cleaned with normal saline. Two abdominal drains were placed, one in the Hepatorenal pouch of Morrison and another in the pelvic cavity abutting the anastomotic site. Abdomen was closed in layers and skin by skin stapler. Postoperatively the patient was kept on NPO for 5 days with broad spectrum antibiotic coverage including anaerobic bacteria, analgesics and PPI (Proton Pump Inhibitor), intravenous fluid and electrolytes etc. Drain outputs were insignificant. From the 5th POD, oral intake was permitted first with sips of water, Oral Rehydration Salt fluids and then gradually semisolid followed by normal diet. Flatus tube and abdominal drains were removed on the 7th POD. Alternate skin stapler pins were removed on the 8th POD and the rest on the 9th POD. There were no infection and no abnormal discharge from anywhere (Incision and drain wounds). Then the patient was discharged from the hospital and advised for coming for follow up at Out Patient Department after two weeks.

Discussion

Colo-rectal FBs represent a difficult and different field. The first report on the treatment of Colo-rectal FBs dates back to the 16th century and the first case reports of the modern age were published in 1919. Male to female ratio is about 28:1 to 40:1. It may have been increased in the long terms as it is very often seen nowadays.⁴ A metastudy in the year 2010 found median age of the patients was 44.1 years, with a standard deviation of 16.6 years. These are of utmost clinical significance when patients cannot remove them in the way they intend. The age distribution is bimodal, with peaks in the 20s (thought to be due to anal erotism) and 60s (thought to be secondary to the use of foreign objects for prostatic massage). CRFBs are not an unusual occurrence in hospital EDs.⁶ The cause of CRFBs vary widely, but in many cases they are of erotic or criminal motivation apart from psychiatric self-introduction through the anus. The foreign body is administered voluntarily in the most cases that result from erotic activity, when the FBs may be typically dildoes, vibrators, light bulbs, candles, shot glasses, and odd or unusually large objects such as soda bottles or beer bottles. Some rectal foreign bodies like toothpicks, popcorn, bones, sunflower seeds, camera pills are initially swallowed and then transit through the GI (GastroIntestinal) tract reach the colo-rectum. Less commonly, through bodypacking, FBs like drug packets as yaba, weapons as knives, ammunition etc. are carried rectally in an attempt at concealed transport. In aged patients, rectal FBs may be used to break up impacted faeces and are being lost in the rectum during this maneuver. In accordance to one study, sexual stimulation was responsible for 80% of clinically relevant rectal CRFBs and about 10% were due to sexual assault. In so called rare Munchausen's syndrome, the patient himself or herself administers the FB into the rectum to draw the sympathy and attention from doctors

and nurses. Another cause is attempted self-treatment of diseases as to treat chronic diarrhea by administering an ear of maize into the rectum or attempting to soothe the itching hemorrhoids.⁷ (Pruritus ani) with a stick or toothbrush. The stick or toothbrush goes out of control and disappears inside the rectum. Accidents or torture sometimes causes an involuntary administration of a FB. A mercurial clinical thermometer administered through the anus to measure the temperature may have got broken off while inside exemplifies a rectal FB due to an accident. Ancient Greece knew the Rhaphanidosis as a punishment for male adulterers by introducing a radish through the anus. Many self-introduced rectal FBs are stated as accidental by the patients due to shame. There are lot many causes contributing to the jamming of rectal FBs inside the rectum. Many of the objects used for sexual stimulation have a conical apex to facilitate better penetration, while the base is flat. In order to receive a greater stimulation. The object may be applied deeper than expectation, when spasm the ano-rectal involuntary sphincter prevents its spontaneous expulsion.⁸ Still other recorded and documented objects of CRFBs are razor, screw, screwdriver, small rolled tool bag, hairpin, milk can opener, fish and meat bones, bone splinters, variable drug containers, Short staffs like chair leg, spade handle, broken off broom handle, extension parts for a vacuum cleaner, containers like sparkling wine bottles, bottles of Coca-Cola, jam pots, small beer glasses, cups, spray can, light bulb, vacuum tube, candle, table tennis ball, Boccia ball, ammunition, firecracker, Cucumber, carrot, maize ear, banana, apples, onion, carved pieces of ginger, rolled newspaper, frozen pig-tail, vibrator, rubber rod, dildo, knife sharpener, flashlights, wire spring, toy car, snuff box, oil can with potato stopper, fruits, vegetables and other foodstuffs, jeweler's saw, tin cup, beer glass, spectacles, suitcase key, tobacco pouch and magazine, plastic tooth brush case.⁹ Not all foreign objects are solid. In 1987, a patient self-administered a cement enema into the rectum. It got then solidified and impacted. The resulting block had to be surgically removed. Another extreme case occurred in November 1953. A depressed man inserted a 15 cm long cardboard tube into his rectum and tossed a lighted firecracker into the tube's opening, resulting in a large hole in his rectum.¹⁰ Many patients get ashamed during the recollection and give information unwillingly. Thus missing valuable information, it may become difficult to provide the correct treatment in correct time. For the same reason, patients do not visit a doctor until very late, like our case. Proper management of the ashamed, uncomfortable or non-cooperative patients is of paramount significance for successful outcome including the lifesaving ones. Generally, several x-ray (plain or contrast or CT) images from different planes and angles are taken to pinpoint the precise location of the FB. Low contrast foreign bodies like plastics need medical ultrasound or CT scan. Magnetic resonance imaging (MRI) is contraindicated, especially if the nature of the FB is unknown.¹¹ CRFBs may penetrate deep into the colon, in certain circumstances up to the right colic flexure. An endoscopy may also be of useful for diagnosis (localization) and treatment. There are diverse methods to remove CRFBs. In many cases, the foreign bodies

consist of fragile materials like glass. Most patients wait for several hours and even days to weeks until they visit a doctor. Before they do, they often repeatedly try to remove the object themselves or by a layperson. This often worsens the problem complicating extraction. In many cases, the foreign body can be removed endoscopically, mostly using a rigid endoscope. Vibrators, for example, can be often removed using a large sling that is used to remove polyps during colonoscopy. Smaller objects like a medical thermometer can be removed by a biopsy forceps.¹² A flexible endoscope is usually of no help when to remove large and jammed objects. It may be preferable to use rigid endoscopes in those cases. There have been several cases where instruments used in child birth like forceps, suction caps have been used for removal of those CRFBs. Wooden objects have been retrieved with corkscrews and drinking glasses, after filling them with plaster. A spoon can be used as an "anchor" by leaving it inside the glass during the plaster filling, removing it together with the glass. Light bulbs are encased in a gauze cover, shattered inside the rectum and extracted. There have been successful cases using argon-plasma coagulation. The object in question was a green apple wrapped in cellophane inside the rectum of a 44-year-old patient. The argon-beam coagulation shrunk the apple by more than 50%, enabling its removal. Previous extraction attempts using endoscopic tools failed due to the flat surface of the object. If the object is too far up, in the area of the sigmoid colon and cannot be removed using one of the methods described above, bed rest and sedation can cause the object to descend back into the rectum, where retrieval and extraction are easier. In difficult cases, a laparotomy is required. Statistically, this is the case in about 10 percent of patients. The large intestine can be manipulated inside the abdominal cavity, making it possible for it to wander in the direction of the anus and be grabbed there. A surgical opening of the large intestines may be required in very difficult cases, especially if the manipulation of the object deemed risky. This may be the case with a jammed drug condom or otherwise impacted large FB. Too big foreign body prevents feces from the colon to pass leading to a mechanical intestinal obstruction. Rectal distension and inadequate peristalsis aggravate this effect. The foreign body may get infected destroying the intestinal wall and leading to perforation, peritonitis, retroperitoneal or intraperitoneal abscesses.¹³ Smaller objects injuring the intestinal wall, but not causing perforation, may get encapsulated by a foreign body granuloma. They may remain in the colon or rectum as a pseudotumor with or without any other effect. 'Perforation' cases are operated immediately by removing or suturing of the perforated area. Antibiotics are given. Often, a temporary ileostomy may be needed. Some deaths may follow complicated colo-rectal foreign bodies, but they are very rare and usually classified as autoerotic fatality. Acute Respiratory Distress Syndrome (ARDS) and systemic inflammatory response syndrome (SIRS) may result in multiple organ dysfunction syndrome (MODS) and multi system organ failure (MSOF) and death. In absence of comorbidities [like Diabetes, Hypertension, IHDs (Ischaemic Heart Diseases), CVDs (Cerebrovascular Diseases), Metabolic

Syndromes, Kidney Diseases, Liver Diseases etc.] and Complications (like infection, sepsis, perforation and peritonitis etc.), if treated properly, outcome is excellent.¹² Otherwise, morbidity is considerable, and if untreated or maltreated the patient may die. But no data is available from any study. The evaluation of the patient with a CRFBs needs to progress in an orderly fashion, with appropriate examination, laboratory and radiographic evaluation and resuscitation with intravenous fluids and antibiotics. In nonperforated stable patients, the object should be removed in the emergency department with a local block and/or conscious sedation via the transanal approach. If this fails, then the patient should go to the operating room for a deeper anesthetic and attempt at transanal extraction. Surgery with a laparotomy should be reserved for patients with perforation or ischemic bowel or cases of failed transanal attempts. After removal of the foreign body, the patient should be observed for a period of time by rigid or flexible endoscopy to evaluate for rectal injury, and repeat plain films to examine for evidence of injury and perforation that may have occurred during the extraction process. After extraction, the patient is to be referred to the psychiatrist to treat perversion disorder, thus to prevent recurrence also.¹³ In our case, the male adult patient was a psychiatric (schizophrenic) subject who presented a bit late with no serious gross complication excepting its migration high up due to reverse peristalsis and then getting impacted at the apex of the loop of sigmoid colon and mild bleeding from mucosal injuries. Because of intimate impaction at the apex of the loop of sigmoid colon, we deemed better to excise the affected segment of sigmoid colon along with the bobbin (large FB), rather than to incise it for removal. Thus we could avoid the impending morbidities and complications of incision and repair of bleeding (relatively unhealthy) segment of colon. Sigmoid colon is not an essential part of alimentary tract. It is noteworthy that removal of sigmoid colon for treatment purposes does not affect nutrition, health and life of patients. We had no scope of having preceding bowel preparation. But during operation, we removed faecal matters from the remaining proximal and distal segments as far as practicable. This sort of on table preoperative bowel cleansing had not hampered our expected outcome of performing end to end primary colorectal anastomosis without any diversion or exteriorization.

Conclusion

Colo-rectal foreign bodies need to be managed in a well-organized way. Resection of sigmoid colon and primary colorectal anastomosis without any ileostomy or some other form of exteriorization (of anastomotic segment) are quite successful in avoiding the morbidities of diversion or exteriorization provided the pre-operative, paroperative and postoperative managements are done properly.

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