

Case Report

An Unusual Intra-Vesicle Foreign Body Following Fall off a Tropical Fruit Tree

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Abstract

Penetrating injuries to bladder occur in 20 % of cases. Synchronous bladder and rectal perforation occur in 30-64 % of cases. The management of rectal and bladder injuries depend on whether it is an extra-peritoneal or intra-peritoneal injury. We hereby, report a case of penetrating trauma in a 13 year old boy who fell off a tropical fruit (Rambutan - *Nephelium lappaceum*) tree. He sustained an extra-peritoneal rectal injury with intra-peritoneal bladder injury. The rectal injury was repaired primarily via per anal route while the bladder injury needed an open repair following laparotomy. Upon removal of bladder clots, a leaf of the 'Rambutan' tree was found intra-vesically. It was removed and bladder repaired as per standard method. We review the literature on rare intra-vesicle foreign bodies and discuss the treatment of synchronous rectal and bladder injuries.

Keywords: Bladder, foreign body, intra-vesicle, penetrating, injury, rectum

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Introduction

Penetrating injuries of the bladder may result in intra or extra-peritoneal rupture. This condition demands surgical exploration to determine the diagnosis, eliminate possible sources of infection and perform immediate repair. These penetrating injuries usually result from missiles, bullets and direct knife stabbings. However, rarely it occurs from a penetrating object via the ano-rectal canal and into the bladder. Synchronous bladder and rectal injury occur in 30-64% of all rectal injuries (1). Majority of these results during fall from height with subsequent impaction of a sharp object into the ano.-rectal canal. Hereby, we describe a case of similar circumstances in a 13-year-old boy. He had fallen off a 'Rambutan' (*Nephelium lappaceum*) tree which resulted in a branch penetrating via his rectum and into the

bladder. He underwent surgical exploration which revealed a surprising intra-vesicle finding.

Case Report

A 13-year-old boy had fallen off a 'Rambutan' (*Nephelium lappaceum*) tree while trying to pluck the fruits after the branch he stepped on, gave way. He fell ten feet high and landed on his buttocks. There was no loss of consciousness or neurological deficit. He was brought to the hospital after complaining of lower abdominal pain and urine retention. He was haemo-dynamically stable. The abdomen was soft with suprapubic tenderness due to distended bladder. There was moderate haematuria upon bladder catheterization. Digital rectal examination revealed a rectal defect which was visualized via proctoscopy at 12 o' clock position 3 cm

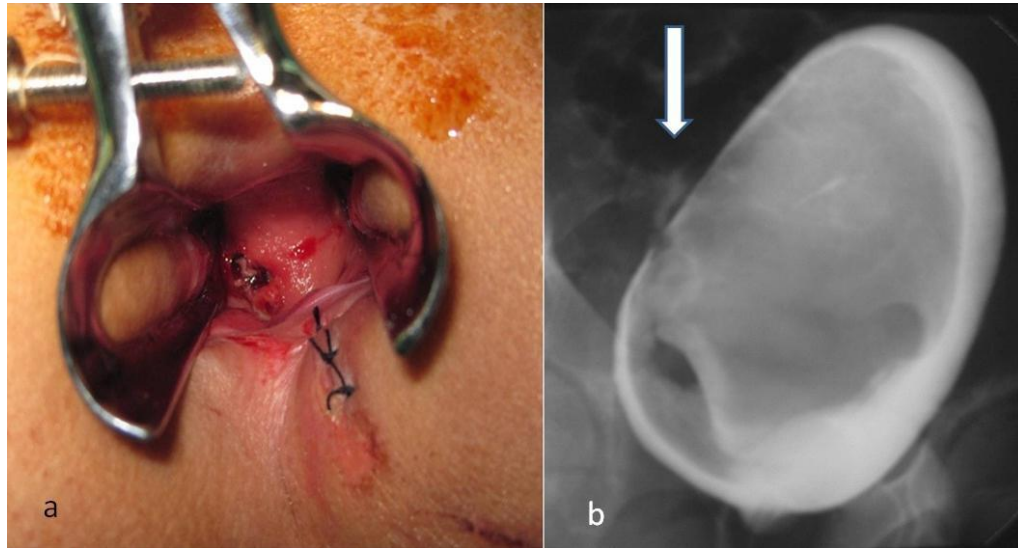


Figure 1: (a) Rectal perforation seen via proctoscopy at 12 o'clock position (b) Intraperitoneal contrast leak from bladder

cm from anal verge (Fig. 1a). On further questioning, the patient revealed that a small tree branch had penetrated his buttocks during his fall, in which he had immediately removed. Computer tomography of abdomen and pelvis was performed. It showed free air at the recto-vesicle space while cystogram showed an intra-peritoneal bladder rupture (Fig. 1b). With a diagnosis of rectal and intra-peritoneal bladder perforation, an immediate cystoscopy and laparotomy was performed.

Cystoscopy showed clots within bladder with puncture wounds above the level of inter-ureteric crest and at bladder dome. Laparotomy revealed minimal clear ascites without pus or bowel contents within the peritoneal cavity. The bladder was opened vertically. Clots were removed and to everyone's surprise, a leaf of the rambutan tree was found intra-vesically (Fig. 2). It was removed. The puncture wounds were debrided and closed primarily with absorbable sutures. Per urethra and suprapubic drains were placed. In view of minimal peritoneal contamination and without intra-peritoneal bowel injuries, the rectal perforation was sutured primarily per anal with absorbable sutures. There was no pre sacral drainage or diverting colostomy employed. He was administered with intravenous Metronidazole and Augmentin for total of 7 days. His recovery was uneventful. A cystogram on day 14 showed healed bladder and the suprapubic and per urethral catheter was removed.

Discussion

Malaysia is a country blessed with a bountiful of tropical fruits. During peak season, the people anxiously

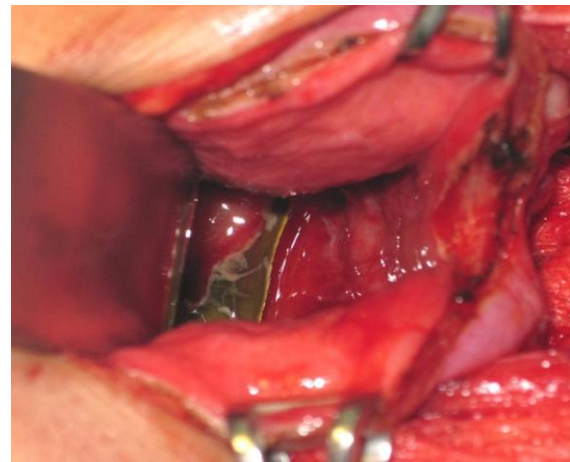


Figure 2: Rambutan leaf within bladder

wait for the harvest. Most fruits grow on trees and fall to ground once it is ripe. This natural event surprisingly gives rise to a number of casualties such as extra-dural haemorrhages from large fruits falling on a person's head or people falling off the tree while attempting to pluck the fruit. As illustrated above, this is a case of synchronous bladder and rectum penetrating injury as a result of a fall from a Rambutan tree.

Penetrating injury constitutes 20-30% of all bladder injury while 30-64% of all rectal injuries have a synchronous bladder injury (1). Common objects causing penetrating injuries include missiles, bullets, shrapnel from explosions and knife stabs. All penetrating injuries should be investigated thoroughly, preferably CT scan or fluoroscopy to determine sites of injury, the trajectory of penetration and in planning for surgery.

All penetrating bladder injuries require surgical exploration. Upon identification they are then classified to intra-peritoneal or extra-peritoneal. Intra-peritoneal injuries of bladder necessitates immediate repair to prevent peritonitis. Extra-peritoneal bladder injuries however can be managed conservatively with an indwelling catheter for a period of 10 to 14 days. An estimated 87% of injury will heal in 10 days while almost 100% will heal by 3 weeks. (2). The importance of exploration of a penetrating bladder injury is highlighted in this case where a residual foreign object is seen intra-vesicle despite knowing that the penetrating object had been completely removed. Exploration also allows debridement of devitalized tissue and opposition of healthy mucosa, thus preventing wound breakdown and fistula formation. In a review of penetrating bladder injuries, Petros et al noted that 22% of patients had an associated rectal injury. All patients whom underwent surgical repair had healed without further complications. There were 4 cases of either missed or conservatively treated penetrating bladder injuries. Among them three had developed vesico-rectal fistula. However, all fistula eventually healed after a prolonged period faecal and bladder diversions. (3)

The presence of foreign bodies in the bladder may be a result three possible factors. They are either from iatrogenic placement of materials into bladder, migration of foreign body into bladder from adjacent cavity or self inflicted/ accidental (4). Among the reported accidental / self inflicted objects includes gold chains, dead fish, carrot, parts of fire works, hair clips and wires (4,5). This case to our knowledge is the first where a leaf (remnant of a pulled out branch) is seen in the bladder.

Removal of smaller objects can be done via a cystoscope while open vesicostomy is needed to remove larger or sharp objects (5). In this case, an

open surgery was warranted to remove the bladder clots and foreign material, debride the bladder wall and ensure haemostasis with water-tight closure.

In summary, penetrating rectal and bladder injury must be examined and investigated thoroughly with proper history taking, examination and imaging. Immediate surgical exploration is needed for intra-peritoneal bladder injuries. Regarding intra-vesicle foreign bodies, this case adds to another bizarre material reportedly found in the bladder.

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