

# Non-operative Management of Non-destructive Extra-peritoneal Rectal Injury

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## ABSTRACT

*This is a case report of extra-peritoneal rectal injury, secondary to a gunshot, that was managed non-operatively. A 57-year old male presented with a single gunshot to the right buttock and had blood per rectum. Extra-peritoneal rectal injuries were seen on proctoscopy and he had no genitourinary injury. He was managed successfully without rectal injury repair or faecal stream diversion.*

**Keywords:** Extra-peritoneal, non-destructive injury, non-operative management, rectum

# Tratamiento no Operatorio de la Lesión Rectal Extra-peritoneal no Destructiva

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## RESUMEN

*Éste es un reporte de caso de una lesión rectal extra-peritoneal, secundaria a una herida por disparo, tratada de forma no operatoria. Un hombre de 57 años acudió con una herida de bala en la nalga derecha y presentaba sangramiento por vía del recto. Las lesiones rectales extra-peritoneales fueron vistas con proctoscopia, pero no presentaba lesión genitourinaria. Fue tratado exitosamente sin reparación de la lesión rectal o diversión de la corriente fecal.*

**Palabras claves:** Extra-peritoneal, lesión no destructiva, tratamiento no operatorio, recto

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## INTRODUCTION

The management of civilian rectal injuries has evolved from principles generated during wartime experiences. These include diversion of faecal stream, debridement and closure of rectal injuries when possible, presacral drainage (PSD) and distal rectal washout (DRW) (1). However, in recent times, all of these tenets have come under scrutiny as to their benefit and efficacy in the management of civilian extra-peritoneal rectal injury (2).

## CASE REPORT

A fifty-seven-year old man presented to the emergency room at the Kingston Public Hospital thirty minutes after receiving a single gunshot wound (GSW) to the right buttock. He complained of pain and bleeding from the wound. There was no syncope or abdominal pain.

Physical examination revealed an alert and comfortable male with pulse rate (PR) 89/min and blood pressure (BP)

135/70 mmHg. There was an entry GSW to the upper inner quadrant of his right buttock and an exit wound to the left groin below the midpoint of the inguinal ligament. The wounds were not actively bleeding and the pulses in the left lower limb were normal and the arterial pressure index (API) was greater than 0.9. The abdomen was soft and non-tender. On digital rectal examination there was good anal tone, the prostate was normal, but blood was noted on the gloved finger. Urine dipstick was negative for blood. A clinical diagnosis of a trans-pelvic GSW with extra-peritoneal rectal injury to rule out urogenital injuries was made.

On proctoscopic examination, 1cm lacerations were seen at 7 and 2 O'clock positions, 6 cm from the anal verge and there was no active bleeding. Intravenous urogram, cystogram and urethrogram were normal.

The diagnosis was revised to a trans-pelvic GSW with non-destructive extraperitoneal rectal injury.

Single doses of broad-spectrum antibiotic (Rocephin® and metronidazole) were given and he was admitted to the surgical floor. He was closely monitored for signs of intra-abdominal injury and perineal infection. There was no operative intervention (*ie* no faecal stream diversion or rectal injury repair).

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The serial complete blood counts were: (on presentation) haemoglobin (Hb) 12.6g/dL, white blood cell (WBC)  $7.2 \times 10^9/L$ , platelet (Plt)  $227 \times 10^9/L$ ; (after 6 hours) Hb 11.2 g/dL, WBC  $16.4 \times 10^9/L$ , platelet (Plt)  $152 \times 10^9/L$ ; (after 12 hours) Hb 11.6 g/dL, WBC  $13.2 \times 10^9/L$ , platelet (Plt)  $144 \times 10^9/L$ ; (after 24 hours) Hb 10.7 g/dL, WBC  $8.3 \times 10^9/L$ , platelet (Plt)  $172 \times 10^9/L$ . The physical examinations which were done every six hours for 24 hours were normal.

He passed flatus and tolerated liquid diet after 24 hours. The liquid diet was maintained for six days and he passed normal stool on day 2. A barium enema done on day 6 showed no extravasation of contrast. The wounds remained healthy, and normal diet was started and tolerated on day 7 and he was discharged on day 9. He was doing well and had no complaints at three months post injury.

## DISCUSSION

Trauma and interpersonal violence are escalating in many countries, a situation referred to as the neglected epidemic. Jamaica's homicide rate per capita is 0.324 per 1000 people, ranking third in the world (3).

Primary repair of extra-peritoneal rectal injuries is not always technically feasible. It is often difficult because of the confined pelvic space, the adjacent sacral venous and hypogastric nerve plexus and the adjacent urogenital structures (4). Many series report no advantage to repair of these injuries (2, 4, 5). It is the main author's view that these injuries should not be repaired, as an open wound allows for any collection to drain per rectum.

Presacral drainage (PSD) was popularized during the Second World War and became an important adjunct in the management of rectal injuries after Lavenson and Cohen reported their results in 1971 (6). In the only randomized study that evaluated PSD in civilian rectal trauma, Gonzalez *et al* found that PSD without DRW did not reduce infectious complications (1). Thus, the evidence to support PSD for non-destructive extra-peritoneal injuries is not very convinc-

ing. Also, present-day experience with management of non-destructive extra-peritoneal rectal injuries showed no benefit from DRW (4).

It is well recognized that extra-peritoneal rectal injuries heal rapidly and it was based on this fact that the same admission colostomy closure was advocated (7). Therefore, even if there was soiling from a non-destructive extra-peritoneal rectal injury, it would occur for a short time. Gonzalez *et al* reported on 14 patients with non-destructive (< 25% circumference) extra-peritoneal rectal injuries managed without repair, faecal stream diversion, DRW and PSD, with no infectious complications (2). This was similar to how the index case was managed and no infectious complications occurred. The severe socio-economic impact of wearing a colostomy was avoided in the index case. It is our belief that as the evidence for the management of non-destructive extra-peritoneal rectal injuries increases, non-operative management will become the standard of care. However, the current principles related to the management of destructive rectal injuries remain applicable.

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