



# Outcomes of Concomitant Bladder and Rectal Injuries: Results from the AAST Multi-Center Rectal Injury Study Group

\* E. Charles Osterberg,<sup>1</sup> Jacob Veith,<sup>1</sup> Carlos VR Brown,<sup>1</sup> John P Sharpe,<sup>2</sup> Tashinga Musonza,<sup>3</sup> John Holcomb,<sup>4</sup> Eric Bui,<sup>5</sup> Brandon Burns,<sup>6</sup> Andrew Hopper,<sup>1</sup> Michael Truitt,<sup>7</sup> Clay Burlew,<sup>8</sup> Morgan Schellenberg,<sup>9</sup> Jack Sava,<sup>10</sup> John Vanhorn<sup>11</sup>

## Objective

- Traumatic combined injuries to the rectum and bladder are uncommon
- We hypothesized that the combination of bladder and rectal injuries would have worse outcomes vs. a rectal injury alone

## Methods

- American Association for the Surgery of Trauma (AAST) multi-institutional retrospective study from 2004-2015
- 22 participating centers
- Cohorts - Rectal injury alone vs. combined injury to the bladder and rectum
- Primary outcome - abdominal complication (i.e. abdominal abscess, pelvic abscess, or fascial dehiscence)
- Secondary outcome - mortality and length of stay

## Results

- 424 patients who sustained a traumatic rectal injury
- 117 (28%) had a combined injury to the bladder and rectum
- No differences in admission demographics, admission physiology, injury severity score, or surgical management between groups
- Combined bladder/rectal group more often sustained penetrating trauma (85% vs. 66%,  $p=0.0002$ )
- Colostomy was performed more often following penetrating trauma (91% vs. 60%,  $p<0.0001$ )
- No differences in abdominal complications (13% vs. 16%), mortality (3% vs. 2%), or length of stay (17 days vs. 21 days) between groups
- Addition of a colostomy did not decrease the rate of abdominal complications mortality, or length of stay

Comparison of Management Strategies	Bladder Injury N (%)=117	No Bladder Injury N (%)=307 **
Exploratory Laparotomy	112(96)	284(93)
Primary repair of wound	5(4)	15(5)
Hartman's Diversion	25(21)	60(20)
Primary Transrectal resection	7(6)	18(6)
Primary Transabdominal resection	34(29)	68(22)
Resection with primary anastomosis	5(4)	15(5)
Proximal diversion without repair	45(38)	129(42)
Diverting ileostomy	2(2)	7(2)
Diverting colostomy	65(56)	177(58)
Proximal Diversion	67(57)	184(60)
Rectal washout	19(16)	59(19)
Presacral drainage	8(7)	25(8)
Pre sacral drainage alone	0	1(0.33)
Laparotomy without rectal intervention	5(4)	17(6)
Non-Operative	0	6(2)

## Conclusions

- Traumatic rectal injury and a concomitant bladder injury does not increase the rates of abdominal complications, mortality, or length of stay
- A diverting colostomy did not impact the aforementioned outcomes

\*\*No significant differences in management between Rectal Injury alone versus Combined Rectal and Bladder Injuries



### \* AUTHOR INSTITUTION

- 1) Dell Medical School at The University of Texas Austin
- 2) The University of Tennessee Health Science Center
- 3) Baylor College of Medicine
- 4) McGovern Medical School at The University of Texas Health Science Center Houston
- 5) University of California, San Francisco
- 6) University of Maryland School of Medicine
- 7) Methodist Dallas Medical Center
- 8) University of Colorado School of Medicine
- 9) Keck School of Medicine at The University of Southern California
- 10) MedStar Washington Hospital Center
- 11) Legacy Emanuel Trauma Center