



Digital rectal examination for initial assessment of the multi-injured patient: Can we depend on it?



Rebecka Ahl ^{a, c, *}, Louis Riddez ^a, Shahin Mohseni ^{a, b, c}

^a Department of Surgery, Division of Trauma and Acute Care Surgery, Karolinska University Hospital, 171 76 Stockholm, Sweden

^b Department of Surgery, Division of Trauma and Acute Care Surgery, Orebro University Hospital, 701 85 Orebro, Sweden

^c Orebro University, 701 82 Orebro, Sweden

H I G H L I G H T S

- There appears to be low correlation between examination and diagnosis.
- Rectal examination shows poor test characteristics for detection of traumatic injury.
- Digital rectal examination could be postponed following initial trauma assessment.

A R T I C L E I N F O

Article history:

Received 3 May 2016

Received in revised form

6 July 2016

Accepted 6 July 2016

Keywords:

Traumatic injury

Digital rectal examination

A B S T R A C T

Background: Digital rectal examination (DRE) is part of the assessment of trauma patients as recommended by ATLS[®]. The theory behind is to aid early diagnosis of potential lower intestinal, urethral and spinal cord injuries. Previous studies suggest that test characteristics of DRE are far from reliable. This study examines the correlation between DRE findings and diagnosis and whether DRE findings affect subsequent management.

Materials and methods: Patients with ICD-10 codes for spinal cord, urethral and lower intestinal injuries were identified from the trauma registry at an urban university hospital between 2007 and 2011. A retrospective review of electronic medical records was carried out to analyse DRE findings and subsequent management.

Results: 253 patients met the inclusion criteria with a mean age of 44 ± 20 years and mean ISS of 26 ± 16 . 160 patients had detailed DRE documentation with abnormal findings in 48%. Sensitivity rate was 0.47. Correlational analysis between examination findings and diagnosis gave a kappa of 0.12. Subsequent management was not altered in any case due to DRE findings.

Conclusion: DRE in trauma settings has low sensitivity and does not change subsequent management. Excluding or postponing this examination should therefore be considered.

© 2016 The Author(s). Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Digital rectal examination (DRE) is carried out as part of the initial assessment of trauma patients in accordance with the Advanced

Trauma Life Support (ATLS[®]) concept [1]. Organised trauma protocols such as ATLS[®] has been developed with the intention of improving survival in the severely injured patient. DRE is performed as part of the secondary survey in order to enable early detection of lower gastrointestinal tract (GIT), urethral and spinal cord injuries. Signs indicating the presence of such injuries include positive blood per rectum, reduced or absent anal tone and a high-riding prostate, the latter two requiring a certain level of subjectivity.

The objective for this study is two-fold. Firstly, to investigate whether traumatic injuries to bowel, urethra and prostate are correctly identified through the rectal examination. Previous studies demonstrate both low rates of sensitivity and specificity for identifying these types of traumatic injuries [2]. Secondly, to assess

List of abbreviations: DRE, Digital Rectal Examination; ATLS[®], Advanced Trauma Life Support; GIT, gastrointestinal tract; ICD-10, International Statistical Classification of Diseases & Related Health Problems; ISS, Injury Severity Score; AIS, American Spinal Injury Association (ASIA) Impairment Scale.

* Corresponding author. Department of Surgery, Karolinska University Hospital, 171 76 Stockholm, Sweden and Orebro University, 701 82 Orebro, Sweden Orebro University Hospital and Orebro University, 701 85 Orebro, Sweden.

E-mail addresses: rebecka.ahl@cantab.net (R. Ahl), louis.riddez@karolinska.se (L. Riddez), mohsenishahin@yahoo.com (S. Mohseni).

<http://dx.doi.org/10.1016/j.amsu.2016.07.006>

2049-0801/© 2016 The Author(s). Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

whether the findings from the examination have any effect on subsequent management and decision-making such as whether the trauma patients is moved from assessment to the CT scanner or to the operating theatre. It has been demonstrated that whole body CT scanning both improves mortality rates [3] and reduces costs [4], compared to selective CT scanning. So if DRE does not affect management, one has to ask the question as to why we are persisting with this invasive examination as a 'mandatory' part of the ATLS® protocol.

2. Material and methods

This is a retrospective observational study. After obtained approval by the Institutional Ethics Review Board a retrospective medical records review of an urban university hospital trauma centre registry of a consecutive case series of trauma patients was carried out.

2.1. Participants and setting

A query on the Karolinska University Hospital's trauma database between January 2007 and December 2011 resulted in a cohort of trauma patients. This cohort was reduced in numbers after the application of inclusion and exclusion criteria. Inclusion criteria were based on all patients with ICD-10 diagnosis codes for injuries to lower GIT (S36.5), urethra (S37.3) or spinal cord (S14, S24, S34, T09.3, G95.2) resulting from both blunt and penetrating trauma. Patients were excluded if transferred from another hospital to Karolinska University Hospital for higher levels of care, if diagnosed with an isolated small bowel injury, and patients who died in the trauma room prior to the trauma team having been able to complete the full trauma assessment protocol. There were no restrictions in terms of gender or age. Consequently, data analysis is based on a subset of all trauma patients during the specified study period meeting the outlined criteria. The electronic medical records for these patients were reviewed to collect data regarding documented DRE findings in association with the initial assessment of the patient in the trauma room and for diagnosis confirmation.

2.2. Data collection and variables

Medical records were reviewed in order to identify those patients with documented DRE findings and those where the documentation for the examination was missing or not recorded. The collected information included; age, gender, diagnosis, mechanism of injury, Injury Severity Score (ISS), DRE findings and disposition of patient following completed assessment in the trauma room.

At our institution DRE is performed when the patient is log-rolled to assess if there are any injuries to the back. This is carried out either by a trauma surgery attending or senior resident as part of the E (exposure) of the ATLS protocol. The following elements of the DRE is performed: inspection for blood on the glove, palpation of the location of the prostate and the presence of anal tone. The examination is subsequently documented in the patient's electronic records as part of their 'trauma assessment entry'. The bulbocavernosus reflex is not routinely assessed. In order to avoid false positive findings, patients who were pharmacologically paralysed at the time of the initial trauma assessment were excluded from the subgroup with documented positive DRE for reduced or absent anal tone in the context of spinal injury. DRE findings were only considered positive if clearly specified in the documentation of the examination and considered negative if not stated as present. If no DRE documentation was found then the patient was included in the subgroup of patients who lacked DRE information. In this context no assumption of a normal DRE was made.

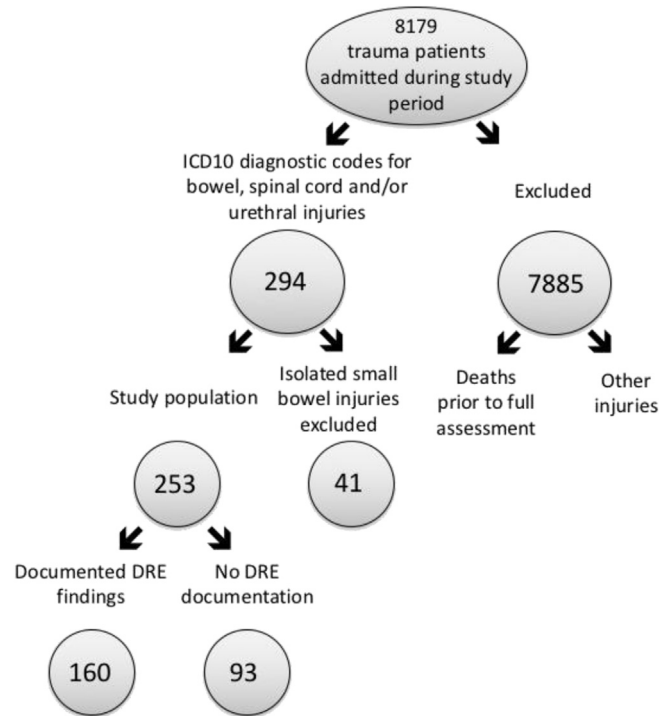


Fig. 1. Selection process of participating patients.

2.3. Statistical methods

Data abstraction from medical records was performed by medical professionals. Data obtained was analysed using SPSS (Statistical Package for the Social Science; version 21). Patients were analysed as a single group for demographics and as two subgroups for subsequent analysis due to the proportion of patients lacking DRE documentation. Cohen's kappa statistic was used for correlational analysis as a measurement of agreement beyond chance between examination findings and established diagnosis where a value of zero indicates no agreement beyond chance and a value of one indicates perfect agreement.

3. Results

Out of 8179 trauma team activations, a total of 253 (3.1%) patients were put forward for data analysis, all with a confirmed injury in one or more organs according to the above stated inclusion criteria. The selection process is outlined in Fig. 1. The mean age was 44 ± 20 years, 75% were male and 90% of injuries were caused from blunt trauma with mean ISS of 26 ± 16 . Review of medical records resulted in documented DRE findings in 160 out of 253 (63%) patients and missing DRE documentation in 93 (37%). Table 1 outlines the demographics and clinical

Table 1
Demographic and clinical information of the total cohort (n = 253).

Variable	Cohort information			
Gender distribution (%)	75% male; 25% female			
Injury Type	Spinal cord	Lower intestinal	Urethral	Multiple
Prevalence (%)	79%	17%	3%	1%
Mean Injury severity score \pm SD	26 ± 16			
Injury mechanism (%)	10% penetrating; 90% blunt			
Mean age \pm SD	44 ± 20 years			

Download English Version:

<https://daneshyari.com/en/article/4195148>

Download Persian Version:

<https://daneshyari.com/article/4195148>

[Daneshyari.com](https://daneshyari.com)