

Examining the Impact of Renal Trauma Guidelines on Urologists in UK

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Abstract

Objective: To investigate whether urologists in UK utilise and adhere to recently published renal trauma guidelines.

Methods: A one-page anonymous questionnaire was created based on recently published guidelines. Thirteen questions were used to investigate the current patterns of practice. The questionnaire was posted to 500 consultants in UK.

Results: Out of 500 questionnaires, 152 (30%) were returned; 109 (70%) respondents saw an estimated five or less cases of renal trauma per year; 104 (71%) respondents used guidelines but these differed; 79 (52%) respondents believed that the published guidelines were appropriate for UK practice; 8 (5%) did not feel that they were appropriate and 48 (32%) were unsure, and 30 (20%) used local guidelines. In stable patients with dipstick hematuria, 121 (80%) respondents requested imaging with ultrasound (76) the most popular. In stable patients with gross hematuria, all respondents requested imaging with CT scanning (126) the most popular. In stable children with suspected renal trauma, all respondents who managed pediatric cases would request imaging. Re-imaging following initial ultrasound was common. Imaging was described as easy or possible to obtain during regular working hours by 147 (97%) respondents. This fell to 131 (86%) out of hours with 14 (9%) respondents having difficulty with obtaining imaging. Only 27 (18%) respondents had interdepartmental protocols to facilitate the imaging process in suspected renal trauma.

Conclusion: Only 74 (50%) responding urologists utilized the recently published guidelines in the management of renal trauma, and adherence to the

recommendations – by those urologists who claimed to use the guidelines – was very variable. To facilitate the best practice in the management of renal trauma, it would be ideal if urologists and trauma surgeons were encouraged to adhere to established guidelines. As diagnostic imaging has a crucial role in the majority of cases, informed discussion with the local radiology department would probably help in achieving the standards required.

Key Words

Guidelines · Renal · Trauma · Urology · Consultants

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Introduction

The guidelines on urological trauma from the European Association of Urology were made available online in 2003 and a shortened version was published in January 2005 [1]. In May 2004 – evaluation and management of renal injuries: consensus statement of the renal trauma subcommittee – was published in the BJU International [2]. Urologists have been encouraged to follow guidelines based on the experience of trauma centers that are familiar with renal injury. In UK, the National Institute of Clinical Excellence (NICE) regularly produces guidelines with directions on how to implement and audit their use [3]. Guideline usage is seen as an important method to improve and standardize healthcare. Where no national guidelines exist, clinicians refer to guidelines published in their relevant literature. Urologists and particularly trainees are

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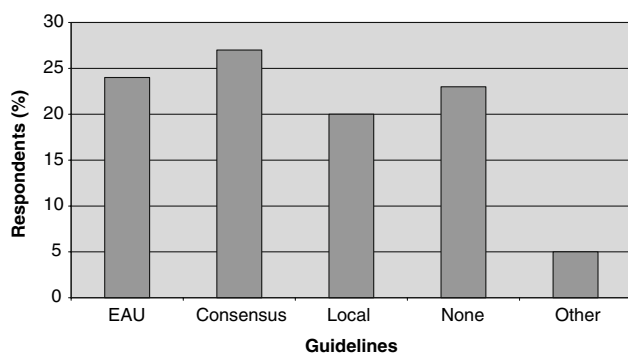


Figure 1. Guideline preference.

increasingly turning to the European guidelines, which are well advertised, expertly produced, and readily accessible [4].

Despite the ready availability of trauma guidelines it is our impression that practice is variable and it can be difficult to meet the recommendations set by them. This study looks at the current practice of UK urologists with regard to renal trauma and their use of published guidelines.

Methods

A one-page anonymous questionnaire (see Appendix) was developed by the authors using the published guidelines [1, 2] and a relevant literature review. We asked a series of questions concerning guideline usage and the management of common renal trauma scenarios. Ease of availability of imaging and the presence of local protocols with radiological colleagues were also queried. The questionnaire was sent to 500 consultant urologists in UK.

Results

Out of 500 questionnaires 152 (30%) were returned; 104 (70%) respondents used guidelines. A similar proportion of respondents used EAU guidelines (34), the Consensus Statement (40), local guidelines (30) and no guidelines (35) (Figure 1). Only 79 (52%) respondents believed that the published guidelines were appropriate for UK practice; 8 (5%) did not feel that they were appropriate, and 48 (32%) were unsure; 17 (11%) did not answer this question; 109 (70%) respondents dealt with five or less cases of renal trauma per year.

In stable patients with suspected renal trauma and dipstick hematuria, 122 (80%) respondents requested imaging. Ultrasound scanning (USS) (76) was the most

popular; 26 (17%) requested CT scanning (CT); 30 (20%) respondents would not request any form of imaging. These proportions were the same irrespective of guidelines followed (Figure 2).

In stable patients with suspected renal trauma and gross hematuria, all respondents said that they would request imaging (Figure 3); 126 (83%), 21 (14%), 8 (5%) requested CT, USS, and IVU, respectively; 41 (27%) would request a contrast CT with delayed films (CTD). Consultants using the Consensus Statement were more likely to perform the recommended imaging for this clinical scenario.

In stable children with suspected renal trauma, all respondents who managed pediatric cases would request imaging; 23 (15%) respondents did not see children. The investigations requested were USS (74) and CT (11).

Re-imaging following ultrasound was routine 14 (9%), often 37 (25%), and occasional 67 (44%). Imaging was described as easy or possible to obtain during regular working hours by 147 respondents (97%). This fell to 131 (86%) out of hours with 14 (9%) respondents having difficulty with obtaining imaging; 27 (18%) respondents had interdepartmental (between the imaging and urology departments) protocols to facilitate the imaging process in suspected renal trauma.

Discussion

A standard questionnaire response of 30% was received. This allowed analysis of 152 respondents.

The results clearly show that methods vary among urologists with regard to renal trauma. Although the majority of respondents used guidelines, at least three different types were used. A significant minority (32%) of respondents were unsure that current guidelines were appropriate to practice and eight (5%) actually felt that they were inappropriate. This appears to confirm a traditional suspicion that clinicians have of guidelines.

Several specific criticisms can be made of renal trauma guidelines. Firstly, the guidelines are predominantly based on level 3 and 4 evidence (retrospective studies, case series and case reports) originating from a small number of centers dealing with a significant amount of major trauma. This does not represent most of the urological or trauma experience in UK. Secondly, the resources required for adhering to guidelines may not be available to all UK urologists. Thirdly, diagnostic imaging forms the cornerstone of management in most cases of renal trauma.

Figure 2. Imaging requested in stable patients with dipstick hematuria.

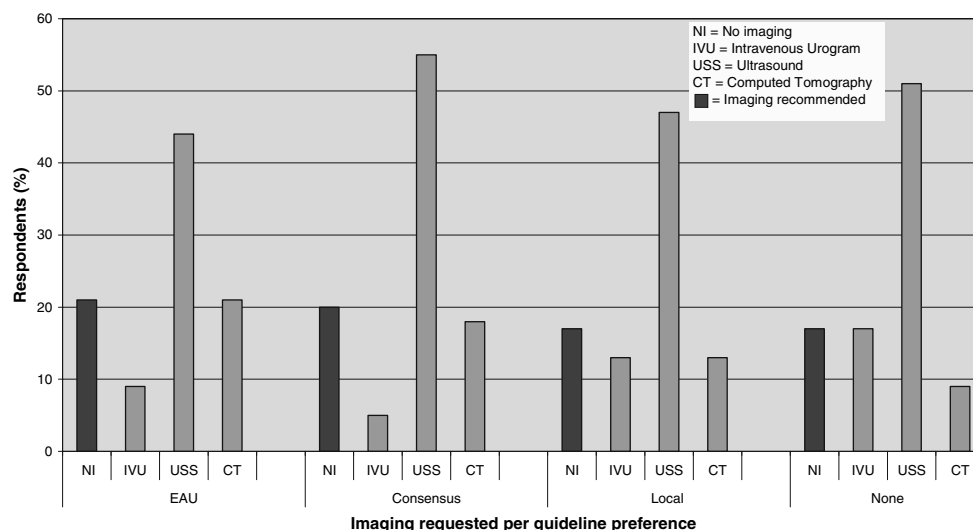
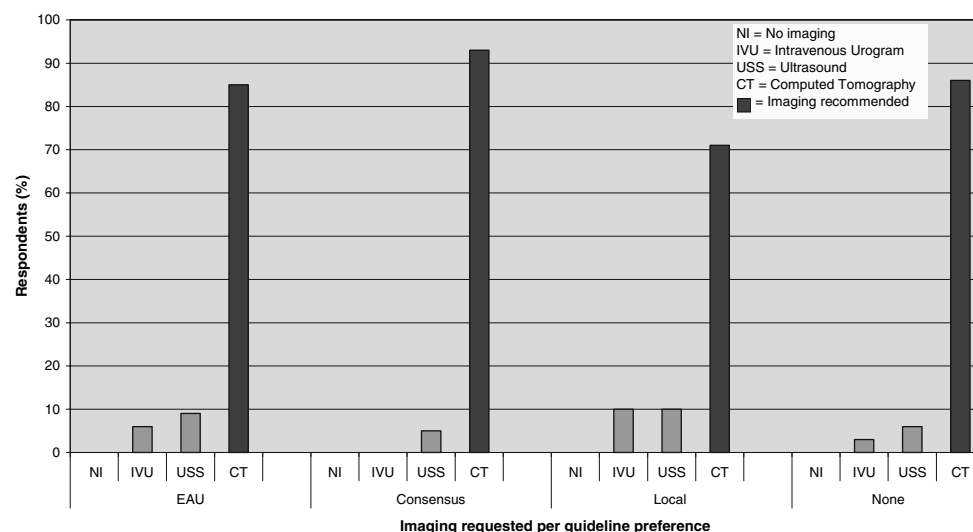


Figure 3. Imaging requested in stable patients with gross hematuria.



ma, yet the guidelines do not include the views of radiologists, and probably do not account for advances in imaging technology. Presently, the imaging modality recommended is contrast CT scanning with delayed images (CTD) [1, 2]. Finally, with the imposition of strict safety regulations in UK, the incidence of trauma has decreased and the severity has shifted towards more minor injuries [5]. The decline in the road casualty rate, a significant proportion of blunt trauma in UK, has been steep. In 1964 there were 240 casualties per 100 million vehicle kilometers. By 2005 this had declined to 55 per 100 million vehicle kilometers.

Despite these reservations, the guidelines available are the consensus opinion of eminent urologists in the

field of trauma and represent our best available resource in managing urological trauma.

The results also show that even when the guidelines were used, adherence to their recommendations was variable. In stable adults with dipstick hematuria and suspected renal trauma, 121 (80%) would be routinely imaged (mainly ultrasound) by respondents. The guidelines based on the established literature do not recommend imaging in the majority of these cases. Miller and McAninch reported 1,588 patients in this category followed up both prospectively and retrospectively [6]. They found just three major renal injuries (0.02%) in the 584 patients who were imaged.

Ultrasound is often used as a 'screening' tool although it is neither sensitive nor specific in renal trauma

[7]. This is reflected in how often respondents request repeat imaging if ultrasound was the primary modality used. Ultrasound is readily available, cheap, does not involve radiation, and can detect other visceral injuries as well as free fluid in the abdomen. In experienced hands, it may provide important information about an injury. However, in most cases the resolution is inferior to CT, and major renal injuries may be missed [1, 2, 7]. CT scanning has the clear advantage of allowing the injury to be accurately staged and a clear management path to be followed [1, 2, 6]. There is presently a lack of prospective studies comparing sensitivity and specificity of ultrasound and CT.

The use of ultrasound in stable patients with dipstick hematuria is probably driven partly by 'defensive' medicine and partly by the instinctive feeling that some form of imaging needs to be performed. Although the guidelines do not recommend imaging, it is important to note that imaging, preferably CT, can be justified based on the mechanism of injury.

In stable adults with gross hematuria and suspected renal trauma, all respondents requested imaging. This is in keeping with recommended practice with the investigation of choice being contrast CT scanning. The use of USS and IVU by respondents in this scenario, against the primary recommendation of the guidelines, is probably due to availability of resources as well as local practice. The low proportion of respondents requesting CTD suggests a general concern about radiation exposure as well as a lack of awareness of the recommended imaging protocol. The majority of children were imaged with ultrasound following renal trauma probably for similar reasons. These findings further highlight the potential value of guideline-based management in uncommon conditions such as renal trauma.

Although imaging plays a crucial role in the assessment of a significant proportion of renal trauma, only 27 (18%) respondents reported having a protocol which was agreed with their respective radiology department. It would seem a logical step in achieving the standards set in present guidelines and may help in departments who had difficulty getting the imaging requested.

Most of the guidelines, including local guidelines, are derived from the same literature base. It is therefore not surprising that the investigations requested did not vary greatly according to the guideline used. The advantage that the established guidelines have is that the information delivered is generally clear and con-

cise. They allow a standardized approach to a condition, which is important but not common. Recommendations can be relatively easily followed and audited by consultants, trainees and radiologists. This should lead to cost effective use of resources, better interdepartmental communication and most importantly, better patient care.

Conclusions

Only half of the responding urologists utilized the recently published guidelines in the management of renal trauma, and adherence to the recommendations – by those urologists who claimed to use the guidelines – was very variable.

To facilitate the best practice in the management of renal trauma, it would be ideal if urologists and trauma surgeons were encouraged to adhere to the established guidelines. The guidelines are very easily accessed online (<http://www.uroweb.org>).

As diagnostic imaging has a crucial role in the majority of cases, informed discussion with the local radiology department would probably help in achieving the standards required.

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For Appendix see next page

Appendix

Diagnostic Imaging and Renal Trauma			
1. What grade?	☐ Consultant	☐ SAS	☐ SPR
2. Hospital type?	☐ Teaching Hospital	☐ DGH	
3. Region?	☐ Scotland	☐ Northern Ireland	☐ Wales
England	☐ London	☐ Eastern	☐ SW ☐ Midlands ☐ NW ☐ NE
4. In cases of suspected renal trauma what guidelines do you use to request Diagnostic Imaging?			
☐ Consensus Statement on Genitourinary injuries–Renal Trauma (BJU May 2004)			
☐ European Guidelines on Urological Trauma (European Urology 47 (2005) 1-15)			
☐ Local guidelines			
☐ Other Please state			
☐ None			
5. Do you feel that the guidelines mentioned above are appropriate for UK practice?			
☐ Yes ☐ No ☐ Don't know			
6. Over the last 12 months, how often has your firm had to request Imaging for suspected Renal Trauma?			
☐ 0 ☐ 1-2 times ☐ 3-5 times ☐ 5-10 times ☐ >10 times			
7. In stable adult patients with suspected renal trauma and <i>dipstick haematuria</i> , what type of imaging do you request in the first instance?			
☐ KUB ☐ IVU ☐ Ultrasound Scan ☐ MRI			
☐ CT ☐ Contrast CT ☐ Contrast CT with delayed images ☐ None			
8. In stable adult patients with suspected renal trauma and <i>gross haematuria</i> , what type of imaging do you request in the first instance?			
☐ KUB ☐ IVU ☐ Ultrasound Scan ☐ MRI			
☐ CT ☐ Contrast CT ☐ Contrast CT with delayed images ☐ None			
9. In stable children with suspected renal trauma, what type of imaging do you request?			
☐ KUB ☐ IVU ☐ Ultrasound Scan ☐ MRI			
☐ CT ☐ Contrast CT ☐ Contrast CT with delayed images ☐ None			
10. If ultrasound scanning is the first investigation done, how often is this followed by reimaging (any)?			
☐ Routinely ☐ Often ☐ Occasionally ☐ Never ☐ Not relevant			
11. If Imaging is indicated, how difficult is this to arrange?			
a. During Regular Working Hours (9.00 - 17.00)			
☐ Easy ☐ Requires negotiation but possible ☐ Difficult ☐ Impossible			
b. After Regular Working hours (17.00 – 08.00)			
☐ Easy ☐ Requires negotiation but possible ☐ Difficult ☐ Impossible			
12. Are there any intradepartmental (between the Imaging and Urology departments) protocols to facilitate the imaging process in suspected Renal Trauma cases?			
☐ Yes ☐ No			
13. Has not being able to obtain appropriate Imaging affected patient outcome in any case?			
☐ Yes ☐ No ☐ Don't know			
Thank you for answering these questions. Please feel free to add any comments on the back of this page.			