

Letters

LATE COMPLICATION OF GASTRIC BANDING CARRIED OUT ABROAD

Editor,

A 68 year old lady was referred to gastroenterology by the respiratory physicians after originally presenting with cough and dyspnoea, worsened by lying down and eating. She had undergone laparoscopic gastric band insertion in France nine years before and was experiencing symptoms of postprandial reflux and dysphagia for the past two years. Computed tomography of the chest showed the gastric band in situ and marked oesophageal dilatation with appearances 'consistent with marked achalasia'.

Urgent upper GI endoscopy confirmed a grossly dilated oesophagus with a large quantity of fluid residue leading to procedure abandonment. Water-soluble contrast imaging revealed gross oesophageal dilatation with beaked tapering at the level of the gastric band.(Figure)



Fig 1. Still from water-soluble contrast swallow, showing gastric band (white arrow) causing incomplete obstruction of the oesophagus, leading to marked dilatation and tortuosity of the structure (black arrow).

She was referred to the upper gastrointestinal surgical team for review, at which point the band was deflated

percutaneously. Her symptoms improved markedly and after lengthy discussion around the benefits and hazards of keeping the gastric band she elected to undergo laparoscopic removal. This was performed without complication. The operative finding of anterior band slippage explained the symptoms on presentation. Contrast swallow imaging performed one day following band removal showed a marked improvement in her oesophageal emptying although the oesophagus remained dilated. On review two weeks later she reported eating a near normal diet and was almost symptom free.

In a series of 126 patients having laparoscopically inserted gastric bands, anterior slippage was detected in ten (7.9%) individuals.¹ There is no bariatric surgery service in Northern Ireland and the number of individuals who have undergone surgical intervention in United Kingdom or abroad is unquantified. This case highlights that a lack of such a service can delay diagnosis and treatment of associated complications. The proportion of obese adults in Northern Ireland is comparable with nationwide rates at 24%.² In a retrospective review in 2009, Arias et al³ identified five out of 257 patients (1.9%) presenting with megaesophagus following gastric band insertion. The mean postoperative time to complication was significantly shorter than in our patient at 32 months (range 24-36) and in all cases the band was removed. With this unusual delay it was important that we excluded oesophageal cancer with careful endoscopy.

Given the lower complication rates and proven superiority of gastric reduction surgery such as Roux-en-Y bypass and sleeve gastrectomy to gastric band insertion in sustaining weight loss, type 2 diabetes control and hypertension remission, the incidence of band insertion continues to reduce with time.^{4,5} Despite this, as the risk of complications of gastric band insertion remains a possibility we urge all healthcare practitioners to be vigilant and preferably to refer to an upper gastrointestinal service with a specialist interest in bariatric intervention.

John McGoran, Inder Mainie, Andrew Kennedy, Barry Clements, Declan Carey, Ray Kennedy

Gastroenterology Department, OG surgical unit BHSCT

1. Lee WK, Kim SM. Three-year experience of pouch dilatation and slippage management after laparoscopic adjustable gastric banding. *Yonsei Med J.* 2014; **55**(1): 49-56
2. Department of Health, Social Services and Public Safety. A fitter future for all: framework for preventing and addressing overweight and obesity in Northern Ireland 2012-2022. Belfast: DHSSPS NI; 2013. Available online from: <http://www.dhsspsni.gov.uk/framework-preventing-addressing-overweight-obesity-ni-2012-2022.pdf>. Last accessed August 2015.
3. Arias IE, Radulescu M, Stiegeler R, Singh JP, Martinez P, Ramirez A, et al. Diagnosis and treatment of megaesophagus after adjustable gastric banding for morbid obesity. *Surg Obes Relat Dis.* 2009; **5**(2):156-9.
4. Puzifferri N, Roshek TB, Mayo HG, Gallagher R, Belle SH, Livingston EH. Long-term follow-up after bariatric surgery: a systematic review. *JAMA.* 2014; **312**(9):934-42.
5. Lo Menzo E, Szomstein S, Rosenthal RJ. Changing trends in bariatric surgery. *Scand J Surg.* 2015; **104**(1): 18-23.

IMAGING FOR SUSPECTED RENAL COLIC IN A DISTRICT GENERAL HOSPITAL; IS AN X-RAY OF THE RENAL TRACT AN OUT-DATED INVESTIGATION?

Editor,

Acute renal colic is a common, often recurrent condition with an annual incidence of 1-2 cases per 1000 and a lifetime risk of 10-20% for men and 3-5% for women¹⁻³. Whilst historically, a plain radiography of the renal tract (XR KUB) was routinely performed, a non-contrast computed tomography scan of the urinary tract (CT KUB) within 24 hours of presentation is currently the investigation of choice for suspected renal calculi^{4,5}. We assessed the investigation pathways followed for patients presenting to the emergency department in a large district general hospital with suspected renal calculi to determine the utilisation and role of XR KUB and CT KUB.

The hospital's radiology database was utilised to identify all patients undergoing CT KUB for suspected renal calculi during a 12-month period (September 2012-2013). All CT KUBs were requested at the time of presentation. Patient demographics (age, gender) were recorded. The performance of XR KUB prior to CT KUB was documented, as were CT KUB results and time interval between presentation and scanning. Patients were grouped according to their gender and ages range (<30, 30-60, and >60 years).

154 patients were identified (88 males and 66 females). 72 patients (46.7%) were diagnosed with a renal calculus by CT KUB being present in 49 (55.7%) males with a mean age of 47.2 years and 23 (34.85) females with a mean age of 38.2 years. 110 patients (71.4%) out of 154 had an XR KUB prior to CT KUB. Compared to CT KUB, XR KUB had a sensitivity of 62.3% and specificity of 92.6%, positive predictive value 90% and negative predictive value 71.4%. XR KUB had a true positive rate of only 32.7% (36/110) for renal calculi.

TABLE 1:

Comparison of performance of XR KUB and CT KUB for detection of renal calculi.

	CT KUB +ve	CT KUB -ve
XR KUB +ve	36	4
XR KUB -ve	20	50

For patients aged <30 only 8 of 28 (28.6%) had calculi identified while no females over 60 had calculi identified with an overall positive rate for this age group of 27.6% (8/29). 117 patients (75.9%) had CT KUB performed <24 hours of presentation and 58 (49.6%) had calculi identified. Of the 37 patients who waited >24 hours for CT KUB, only 14 (37.8%) had calculi identified.

XR KUB has a low sensitivity compared to CT KUB, providing no additional value, and so in accordance with published guidelines should be avoided. Efforts are required

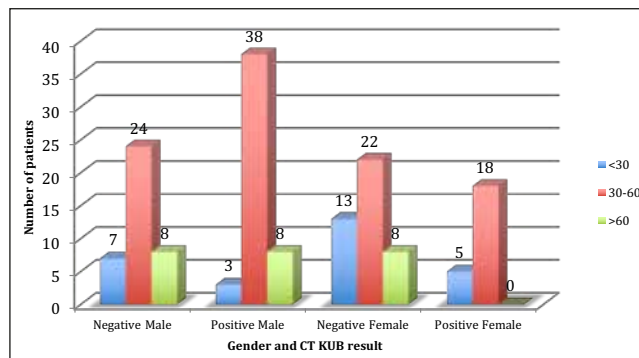


Fig 1. Number of positive and negative CT KUB results for patients grouped into gender and ages ranged less than <30, 30-60, and >60 years.

to reduce negative CT KUB numbers and to insure that scans are performed <24 hours, preferably sooner, as this is associated with a higher pick-up rate for calculi. Females present a particular diagnostic challenge and the indiscriminate use of CT KUB should be re-evaluated.

Michael Warnock, Gareth Morris-Stiff

Department of General Surgery, Altnagelvin Area Hospital, Glenshane Road, Derry, BT47 6SB, Northern Ireland.

Corresponding Author: Michael Warnock,

CT Surgery, Royal Victoria Hospital, Belfast Health and Social Care Trust, 274 Grosvenor Road, Belfast BT12 6BA.

Michael.warnock@doctors.org.uk

REFERENCES

1. Scott R. Prevalence of calcified upper urinary tract stone disease in a random population survey. *Br J Urol.* 1987; **59**(2):111-7.
2. Scott R. Epidemiology of stone disease. *Br J Urol.* 1985; **57**(5): 491-7.
3. Ahlstrand C, Tiselius H. Renal stone disease in a Swedish district during one year. *Scand J Urol Nephrol.* 1981; **15**(2): 143-6.
4. BAUS Business. Stone guidelines. Guidelines for acute management of first presentation of renal/ureteric lithiasis.. British Association of Urological Surgeons; Updated Feb 2012. Available online from: http://www.baus.org.uk/professionals/baus_business/publications/24/stone_guidelines Last accessed August 2015.
5. Making the best use of a department of clinical radiology: guidelines for doctors. 6th ed. London: The Royal College of Radiologists; 2007.

A SIMPLE TECHNIQUE TO IMPROVE BOWEL DECOMPRESSION AT LAPAROTOMY

Editor,

Decompression of small or large bowel is often necessary during laparotomy. During a bowel resection, intra-luminal decompression may be performed using a hypodermic needle or alternatively a standard plastic or reusable metallic sucker^(1,2). This approach leads to repeated obstruction of the device due to the semi-solid nature of the effluent and risks spillage of enteric contents, with potential intra-peritoneal contamination. Milking small bowel effluent proximally into the stomach and aspirating via nasogastric tube increases the risk of intestinal trauma and potential respiratory sepsis.



Fig 1. Remove proximal guide from a 32 FG chest drain.

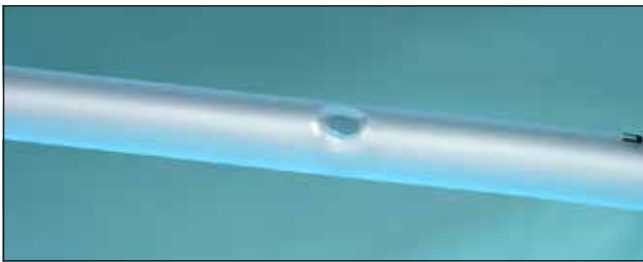


Fig 2 & 3. Fold over drain approximately 4cm from proximal end and cut out a small triangle. The resulting circular venting hole can be occluded to control the level of suction.



Fig 4. Insert drain connector into proximal drain lumen and connect to standard suction tubing.

We have modified existing techniques to facilitate wide bore decompression of obstructed small or large bowel, whilst simultaneously minimising contamination, utilising a standard 32FG chest drain.

There are currently many available devices for intra-operative bowel decompression. Commonly encountered problems with



Fig 5. Fashion a 2cm purse string suture in the anti-mesenteric border of the bowel, leaving suture ends untied. Create a controlled enterotomy within the confines of the purse string. Carefully insert the chest drain without suction and pull the suture tightly around the drain.



Fig 6. Place thumb over venting hole formed earlier to create suction and evacuate enteric contents. When evacuation is complete remove the drain from enterotomy, pulling tightly on suture to prevent spillage of bowel contents and tie suture to close.

these devices include blockage by intra-luminal content, as well as repeated suction damage to bowel mucosa. Using a 32FG chest drain provides a bigger lumen with multiple drainage holes, enabling larger volumes and particles to be suctioned efficiently. It is more flexible, thus limiting damage to bowel mucosa; however, caution must still be taken as the plastic is firm. Tightening of the purse-string suture on enterotomy closure minimises contamination. Although there is not one decompressive strategy that can be implemented in all cases, with a move towards intra-operative colonic lavage and primary anastomosis, this simple technique is an inexpensive, beneficial addition to the surgeon's armamentarium^(2,3).

Miss Zena Rokan, Clinical Fellow, General Surgery, Mr Philip Davey, ST8 General Surgery and Mr Ian McAllister, Consultant General and Colorectal Surgeon.

Ulster Hospital, Upper Newtownards Road, Belfast, BT16 1RH, Northern Ireland.

Email address: zena.rokan@icloud.com

REFERENCES

1. Soulsby R, Radley S. Simple equipment for decompression of the colon during laparotomy for large bowel obstruction. *Colorectal Dis.* 2002; **4(4)**:262-3.
2. Ansaloni L, Andersson RE, Bazzoli F, Catena F, Cennamo V, Di Saverio S., *et al.* Guidelines in the management of obstructing cancer of the left colon: consensus conference of the world society of emergency surgery (WSES) and peritoneum and surgery (PnS) society. *World J Emerg Surg.* 2010; **5**: 29: 1-10
3. Kam MH, Tang CL, Chan E, Lim JF, Eu KW. Systematic review of intraoperative colonic irrigation vs. manual decompression in obstructed left-sided colorectal emergencies. *Int J Colorectal Dis.* 2009; **24(9)**:1031-7.

INTESTINAL CRYPTOSPORIDIOSIS MIMICKING ACUTE APPENDICITIS

Editor,

Surgery for acute appendicitis (AP) is one of the commonest emergency surgical procedures performed on the acute take. The differential diagnoses for AP are well known to those involved in acute general surgical practice. Unusually, other causes may mimic this common acute surgical condition, one of which is Cryptosporidial enteritis.

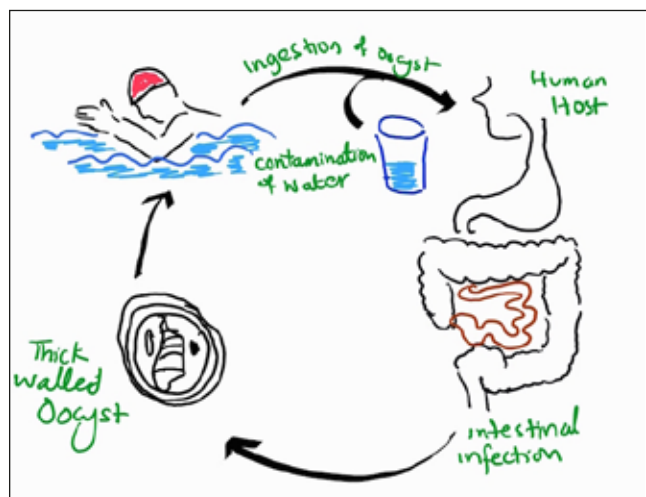


Fig 1. Cryptosporidium life cycle in a human host.

We report a case of a patient presenting with right iliac fossa pain (RIF) and diarrhoea who had a histologically normal appendix and whose stools were positive for Cryptosporidia oocysts.

A 19-year-old female presented with a short history of RIF pain and diarrhoea. Whilst inflammatory markers and an ultrasound scan were essentially normal, acute appendicitis could not be excluded and she proceeded to appendicectomy. At operation there was a grossly normal appendix with a small amount of fluid in the RIF and associated mesenteric lymphadenopathy. Appendicectomy was completed and histopathology reported a normal appendix. Post operatively the patient had ongoing diarrhoea and microbiology of stools samples reported Cryptosporidia oocysts. Otherwise, the patient was systemically well. At outpatient review, her symptoms had settled and she was discharged.

Cryptosporidium infection (also known as cryptosporidiosis) is an important cause of gastroenteritis. It may affect any age group, however is more classically symptomatic in children and immunocompromised individuals. There were in the region of 143 reported cases of cryptosporidium infection in Northern Ireland in 2014^[1].

Cryptosporidium in humans is caused by two main species - *Cryptosporidium hominis* and *parvum* with an incubation period of between 3 and 12 days. It is usually a self-limiting diarrhoeal illness, although in some cases, it can be more severe. Infection is commonly transmitted via the faeco-oral route (Figure 1). Sporadic cases can also be transmitted via animal contact or drinking contaminated water. Many reported disease outbreaks are linked to contaminated water as the organism is resistant to disinfectants and chlorine^[2].

Once inside the gastrointestinal tract (GIT), the organism reproduces within the epithelial lining, commonly the jejunum and ileum^[3]. Confirmation of the diagnosis requires stool microscopy to identify cryptosporidium oocysts, which is considered the gold standard^[4]. In cases where microscopy is negative and the diagnosis is considered, colonoscopy with biopsy may aid diagnosis.

In this case, a diagnosis of Cryptosporidial enteritis was not considered. The history of diarrhoea and the positive stool samples retrospectively made the diagnosis and also explained the operative findings.

The Authors have no conflict of interest

Dr Esam Amer (ST1 in Broad based training), Mr David Farren (Consultant Medical Microbiologist), Mr Roderick Skelly (Consultant General Surgeon)

Department of General Surgery, Causeway Hospital, 4 Newbridge Rd, Coleraine BT51 1HS. Northern Ireland.

Corresponding author: Dr Esam Amer.

Email: dr_esamamer@yahoo.com

REFERENCES

6. HSC Public Health Agency. Gastrointestinal infections in Northern Ireland. Annual surveillance report. Belfast: Public Health Agency; 2014.
7. Smith A, Reacher M, Smerdon W, Adak GK, Nichols G, Chalmers RM. Outbreaks of waterborne infectious intestinal disease in England and Wales, 1992-2003. *Epidemiol Infection.* 2006; **134(6)**: 1141-1149.
8. Greenberg PD, Koch J, Cello JP. Diagnosis of *Cryptosporidium parvum* in patients with severe diarrhea and AIDS. *Dig Dis Sci.* 1996; **41(11)**: 2286-90.
9. Bissenden JG. *Cryptosporidium* and diarrhoea. *Br Med J (Clin Res Ed).* 1986; **293(6542)**: 287-8.

PREScription OF SECONDARY PREVENTION MEDICATIONS TWO YEARS POST CORONARY ARTERY BYPASS GRAFTING: AN AUDIT OF REGIONAL PRACTICE

Editor,

Coronary artery bypass graft surgery (CABG) is among

the most commonly performed cardiac operations, with over 20,000 procedures conducted annually in the United Kingdom.¹ The efficacy of CABG has been well established, as demonstrated in numerous studies. Nevertheless, the progression of native coronary artery atherosclerosis, as well as the occlusion of bypass grafts, continue to predispose patients undergoing CABG to an increased risk of myocardial infarction and death. To reduce the occurrence of major adverse cardiovascular events, secondary prevention is of paramount importance and includes appropriate medical therapy and lifestyle modifications.²

TABLE 1.

Secondary prevention prescriptions 2 years post-CABG (n=50)

Medication	% Prescriptions
Aspirin (or alternative if aspirin contraindicated)	100
Statins	100
β-blockers	91.7

The use of secondary prevention medications (antiplatelet agents, β-blockers, renin-angiotensin-aldosterone system blockers and lipid-lowering agents) has been associated with a lower rate of adverse cardiac events in patients after CABG and is therefore a Class I recommendation in national and international guidelines. However, despite evidence supporting the use of these medications, implementation has been inconsistent.³ Whilst our own internal audits have found excellent secondary prevention prescription on discharge, we sought to investigate medium to long-term adherence to guidelines.

An audit of regional practice regarding prescription of secondary prevention medication was conducted against the relevant guidelines published by American Heart Association / American College of Cardiology Foundation (AHA/ACCF) and National Institute for Health and Care Excellence (NICE).^{4,5} Patients who underwent isolated CABG in the Royal Victoria Hospital were identified from our database (n = 50) and assessed for prescription of aspirin, β-blockers and statins at a mean time of two years and one month post discharge. The audit was performed in May 2014. Current medications and most recent cholesterol levels were obtained using the Northern Ireland Electronic Care Record (NIECR).

The results are summarised in Table 1. NICE guidelines, in effect during the period in which the audit was conducted, recommended total cholesterol (TC) concentration < 4 mmol/l, with low density lipoprotein (LDL) < 2 mmol/l. However, it is accepted that a substantial proportion of patients fail to achieve this, thus group audit target with respect to TC should be < 5 mmol/l.⁵ Our audit identified 91.7% of patients achieving TC concentration < 5 mmol/l, and of these, a total of 43.8% achieved the lower target. Drug

allergy was not a reason for patients to be excluded from β-blocker therapy. We found three patients initially prescribed β-blockers on discharge, whose treatment was subsequently stopped. Additionally, in one particular patient, no β-blocker was prescribed on discharge and no corresponding reason documented.

In conclusion, adherence to prescription of secondary prevention medication in the medium to long-term post-CABG is excellent. However, as we all strive for perfection, it was noted that 42% of patients remain on the same dose of β-blocker issued at discharge, which may indicate a missed opportunity for up-titration.

Our study may also be influenced by the limitations of NIECR as not all prescriptions are routinely updated on the database. Another limitation is that patient compliance was not measured. It remains the responsibility of surgeons, cardiologists, general practitioners and community pharmacists to educate patients on the importance of continued adherence to secondary prevention medications.

The authors have no conflict of interest.

Savvas Lampridis, Rory Beattie, Reubendra Jeganathan

Department of Cardiothoracic Surgery, Royal Victoria Hospital, Belfast, Northern Ireland

Correspondence to: Savvas Lampridis

E-mail: savvas.lampridis@gmail.com

REFERENCES

1. The Society for Cardiothoracic Surgery in Great Britain & Ireland. Sixth national cardiac surgical database report: demonstrating quality. Oxfordshire: Dendrite Clinical Systems; 2009. Available online from: http://www.scts.org/_userfiles/resources/SixthNACSDreport2008withcovers.pdf Last accessed November 2015
2. Okraie K, Platt R, Pilote L, Eisenberg MJ. Cardiac medical therapy in patients after undergoing coronary artery bypass graft surgery: a review of randomized controlled trials. *J Am Coll Cardiol.* 2005 Jan 18; 45(2):177-84.
3. Smith SC Jr, Benjamin EJ, Bonow RO, Braun LT, Creager MA, Franklin BA, *et al.* AHA/ACCF secondary prevention and risk reduction therapy for patients with coronary and other atherosclerotic vascular disease: 2011 update: a guideline from the American Heart Association and American College of Cardiology Foundation. *Circulation.* 2011; 124(22):2458-73.
4. Williams JB, DeLong ER, Peterson ED, Dokholyan RS, Ou FS, Ferguson TB Jr, Society of Thoracic Surgeons and the National Cardiac Database. Secondary prevention after coronary artery bypass graft surgery: findings of a national randomized controlled trial and sustained society-led incorporation into practice. *Circulation.* 2011; 123(1):39-45.
5. NICE Clinical Guideline; 67. Lipid modification: cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease. London: National Institute for Health and Care Excellence; 2008 Last accessed November 2015. Available from: <http://www.nice.org.uk/guidance/cg67>

IMPROVING STANDARDS IN RADIOLOGY REQUEST FORMS: A SCORING TOOL FOR CLINICAL AUDIT

Editor,

Adequately completed radiology request forms play an essential role in communication between practitioners, the patients they treat and radiologists responsible for minimising radiation exposure.^{1,2} Incomplete radiology request forms are commonly encountered by radiologists, hampering their ability to triage requests and assess appropriateness.³ Clinicians often compound the problem by delegating responsibility for completing requests to the most junior member of the medical team during a busy ward round, where time pressures ensure that the clinical information is scantily recorded.¹ Given that few audit tools are available to assess standards of radiology requests we aimed to develop an audit proforma to assist in identifying current standards and measure improvement of emergency CT request forms for patients admitted to our surgical unit.

Figure 1: Evaluation of Clinical Information on Emergency CT Request Forms

Patient Demographics	
Name: *	Y/N
Hospital Number: *	Y/N
Age/Date of Birth:	Y/N
Sex:	Y/N
Patient Ward/Location: *	Y/N
Clinical Information	
Clinical History:	Y/N
Clinical Signs:	Y/N
Previous Surgery:	Y/N If so what _____
Inflammatory Markers:	Y/N
Reference to previous imaging:	Y/N
Differential Diagnosis:	Y/N If so what _____
Documented eGFR:	Y/N If so what _____
Referring Clinician Details	
Name of referring practitioner: *	Y/N
Contact details of referring practitioner:	Y/N
Grade of referring practitioner: *	Y/N If so what _____
Name of responsible consultant for patient: *	Y/N
TOTAL SCORE: /16	

* Mandatory fields on the Sectra electronic radiology request system (used predominantly in Northern Ireland) that prevent the referrer sending a form without completion. Such fields will yield a 100% completion rate and as such may be removed yielding a 10 point scoring tool in the case of those utilizing Sectra.

A 16 point universal scoring tool incorporating patient demographics, clinical information and requesting physician details was developed by members of the surgical and radiology departments in Craigavon Area Hospital. The format of this tool is applicable for use when dealing with hand written or electronic requests but in centres using electronic request systems, containing mandatory fields, the audit tool may be adapted. In Northern Ireland, where

the Sectra system predominates, the universal tool may be collapsed to 10 points when the mandatory fields, such as referring clinician name and grade, are removed (Figure 1). A retrospective review of 200 consecutive inpatient CT requests was carried out. A point was allocated to each completed parameter and an overall score calculated. Results were then presented to the surgical team and a prospective audit of 100 consecutive requests performed.

The overall mean score for CT request form completion improved from 13.3 (83.1%) to 15.3 (95.6%). Documentation of previous surgery (35% to 71%), reference to previous imaging (37.5% to 75%), documentation of clinical signs (67% to 97%) and contact details of requesting practitioner (79.5% to 98%) all showed improvement. Of the 16 parameters assessed, 12 had greater than 90% completion after the audit loop was completed. Of the 300 request forms sampled, 212 (71%) were requested by Foundation Year One doctors emphasising the delegation of such tasks to junior members of the team. The cumulative effect of improvement in standards has been to reduce the number of final CT reports asking for additional clinical information from 13.5% to 1%.

In summary, inadequately completed radiology requests represent a safety concern as patients are potentially exposed to ionising radiation unnecessarily. As referring clinicians, we are responsible for ensuring adequate information is available for our radiology colleagues.² This scoring tool offers a method of appraisal for radiology requests and, as demonstrated by audit, may be used to assess current practice standards and measure improvement. It also provides opportunity to educate junior trainees on how to summarise pertinent clinical information and formalise this in a radiology request. Whilst this tool was developed for the assessment of emergency CT requests we believe its methodology is applicable to all forms of radiology request.

Daniel Kane¹, David Mark², John Mullan², Scott McCain², Alastair Lewis², Paul Rice³

1 Queen's University Belfast, University Road, Belfast, BT7 1NN. 2 Department of General Surgery, Craigavon Area Hospital, 68 Lurgan Road, Portadown, BT63 5QQ. 3 Department of Radiology, Craigavon Area Hospital, 68 Lurgan Road, Portadown, BT63 5QQ

Corresponding author: Mr Daniel Kane. Email: dansjk@yahoo.co.uk

REFERENCES:

1. DC Bosanquet, JS Cho, N Williams, D Gower, K Gower Thomas, MH Lewis. Requesting radiological investigations - do junior doctors know their patients? A cross-sectional survey. *J R Soc Med Sh Rep.* 2013; 4: 3.
2. Great Britain. Department of Health. Statutory Instruments. 2000 No. 1059. Health and Safety. The ionising radiation (medical exposure) regulations London: The Stationery Office; 2000.
3. Akinola R, Wright K, Orogbemi O. Radiology request forms; are they adequately filled by clinicians? *The Internet Journal of Radiology;* 2010; 12: 1. Available from: <http://ispub.com/IJRA/12/1/6684> Last accessed November 2015.
4. Godwin R, de Lacey G, Manhire A. Clinical audit in radiology, 100+ recipes. London: Royal College of Radiologists; 1996.