



Highlights from the scientific and educational abstracts presented at the ASER 2017 annual scientific meeting and postgraduate course

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Abstract

The annual meeting of the American Society of Emergency Radiology (ASER) took place in Toronto, Canada, on September 6 through September 9, 2017. Attendees represented the USA as well as international emergency radiology communities, including those from academic, private practice, and teleradiology settings. There were several “members in training” in attendance as well. The meeting again featured the “Trauma Head to Toe” 2-day didactic course, highlighting various important topics on imaging of traumatic injuries. Scattered throughout the 4 days were several poster and case of the day presentations, scientific sessions, and self-assessment modules. The following is a summary of the educational posters and scientific papers.

Keywords ASER · 2017 · Toronto · Emergency radiology · Trauma · Highlights · Review · Summary · Abstracts · Educational posters · Scientific papers

Educational posters

The educational posters presented at this year’s conference covered the full spectrum of radiology subspecialties, including both traumatic and non-traumatic pathology.

Pao et al. discussed the evolution of thoracolumbar traumatic injury classification with emphasis on the revised AO spine classification. The goal is to incorporate this scoring system into future clinical trials to establish outcome-drive treatment guidelines [1]. French et al. surveyed institutions throughout the USA and Canada to evaluate differences in blunt trauma CT protocols. Results showed significant variation in several facets of trauma evaluation, including the actual scanning protocol itself, the subspecialty training and location of the interpreting radiologists, assessment of renal function prior to imaging and patient arm position during scanning [2]. Marshall et al. discussed imaging features and proper terminology used in describing atypical, pathologic, and stress fractures [3]. Tade et al. reviewed

salient anatomy, imaging features, and grading of traumatic vertebral artery injuries [4]. Chiu et al. reviewed MR imaging features of craniocervical ligamentous injuries with recommendation of particular attention to the alar ligaments and the use of specific MR sequences (coronal T2 3D fast spin echo and axial thin cut T2) [5]. Bello Velez et al. reviewed missed/nearly missed skull base lesions on routine head CTs from the ER including infectious, inflammatory, neoplastic, and traumatic entities [6]. Haber et al. described a module created to educate radiology trainees on the fundamentals of head CT interpretation. This included salient anatomy and common neurologic emergencies such as hemorrhage, hydrocephalus, cerebral edema, and herniation [7]. Wong et al. examined whether augmented reality has a role in trauma care, allowing the user to view 3D images with radiology overlays [8]. Hoff et al. reviewed emergency neuroimaging in the HIV patient, including imaging features of opportunistic infection, primary CNS lymphoma, HIV encephalopathy, and immune reconstitution inflammatory syndrome [9]. Patel et al. reviewed abnormal intracranial gas collections detected on emergency head CT, ranging from benign iatrogenic etiologies to those associated with critical injuries and infections, as well as mimics [10]. Stafford et al. reviewed the evaluation of pediatric craniocervical injuries, noting that ligamentous injuries are more common than fractures, emphasizing the role of MRI in these evaluations [11]. Gutierrez Chacoff et al.

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reviewed imaging findings and tips on accurately reporting penetrating thoracic trauma including lung, vascular/pericardial, diaphragm, and thoracic wall injuries [12]. Beckmann reviewed classification of distal femur fractures and associated implications on surgical management, including choice of hardware and surgical approach [13]. Guirguis et al. reviewed classification of traumatic scapular fractures and their implications on the selection of conservative versus surgical management [14]. Josifoski et al. reviewed multimodality imaging features of common hindfoot avulsion fractures and associated pathophysiologic implications [15]. Covello et al. compared single versus triple (oral, rectal, intravenous) contrast MDCT in the evaluation of penetrating torso trauma and found that triple contrast imaging was more specific but not more sensitive than single contrast evaluations. Triple contrast imaging was found to be more accurate for detection of hollow viscus injury [16]. Ratanaprasatporn et al. described an electronic learning management system created to enhance emergency radiology education. This electronic educational tool was designed in recognition of a new generation of visual learners who rely more heavily on online media [17]. Sanhaji et al. assessed radiology preparedness plans in mass casualty incidents in underserved countries and the capacity to aid this effort. Their poster emphasized the need for basic imaging equipment and education as part of standard emergency care in developing countries [18]. Shi et al. reviewed MDCT evaluation of laryngeal injuries including anatomy, search pattern, and patterns of injury [19]. Zhang et al. discussed the implementation of standardized disaster radiology curriculum in Emergency Radiology fellowship. This includes patient triaging, patient surge modified imaging protocols, operational contingencies, and personnel utilization/mobilization [20]. Cavallo et al. reviewed frequency of characteristic findings of aortic dissection on non-contrast CT, including displaced calcification, displaced intima, and double density [21]. Cruz et al. reviewed periprocedural and endograft-related complications of EVAR [22]. Ellerbrook et al. reviewed imaging of acute aortic syndromes including classification under the subtypes of intramural hematoma, penetrating atherosclerotic ulcer and dissection, as well as associated complications [23]. Kingler et al. reviewed CTA evaluation of extremity trauma including osseous, vascular, and soft tissue injuries [24]. Pranjali et al. reviewed chest CT findings of cardiac tamponade [25]. Laste et al. reviewed imaging findings of pulmonary parenchymal drug toxicity, including specifically Daptomycin, Cimzia, Bleomycin, Bortezomib, and Everolimus [26]. Fong et al. presented their findings on diagnostic yield for pulmonary embolism with combined CTPA and portal venous phase CT abdomen/pelvis in the emergency department. The results suggested a low diagnostic yield with these types of

evaluations, which are often ordered for patients with a multitude of symptoms without documentation of pretest probability or risk stratification [27]. Shin et al. reviewed non-traumatic cardiac imaging findings on non-ECG-gated chest CT, advocating a thorough and consistent search pattern that includes the coronary arteries, cardiac chambers, cardiac valves, myocardium, and pericardium [28]. Beckmann reviewed pediatric musculoskeletal infections and associated complications. The poster emphasized the utility of a rapid acquisition protocol which includes a diffusion sequence and benefits of IV contrast administration as a problem solving tool [29]. Laur et al. reviewed spine infections and common imaging mimics [30]. McEnulty et al. reviewed communication of incidental findings detected on trauma CT to patients. They found that a significant percentage of incidental findings deemed “significant” or “moderate” were not reflected in the patient’s discharge summary/instructions, and to a lesser extent were not documented as reported to the patient [31]. Robinson et al. reviewed clinical findings and imaging patterns of various crystal deposition diseases encountered in the emergency department [32]. Cornman–Homonoff et al. reviewed MRI of pelvic emergencies including fibroid degeneration/torsion, endometritis, endometrioma, ruptured ectopic pregnancy, ovarian torsion, tubo-ovarian abscess, appendicitis, and perforated diverticulitis [33]. Haber et al. reviewed neurologic emergencies in pregnancy and puerperium including stroke, parenchymal hemorrhage, cerebral venous thrombosis, PRES, post-partum angiopathy/RCVS, intracranial hypotension, pituitary apoplexy, and lymphocytic hypophysitis [34]. Heilala et al. reviewed reversible callosal splenic lesions in patients with febrile illness [35]. Spain et al. reviewed the spectrum of CT findings in pelvic inflammatory disease and imaging mimics [36]. Anilkumar et al. reviewed the impact of imaging modality choice on length of hospital stay in patients with intertrochanteric extension of greater trochanteric fractures. They recommended that patients with acute greater trochanteric fractures detected on radiographs should be imaged with MRI to evaluate for highly associated intertrochanteric fracture extension, as CT may miss this finding and delay the diagnosis made on subsequent MRI [37]. Ballard et al. reviewed preoperative CT findings of Fournier’s gangrene and inter-observer reliability of making this imaging diagnosis using a previously described CT scoring system for necrotizing soft tissue infections [38]. Velez et al. reviewed the top 12 entities most frequently missed by radiology residents during independent interpretation [39]. Hakim et al. reviewed the imaging findings of upper urinary tract infections including complications and variants [40]. Bonnett et al. reviewed clinical presentations, imaging findings, and follow-up recommendations for breast emergencies, as well as pathologies that may mimic

acute breast conditions [41]. Chang et al. reviewed acute pathologies of the cecum including infectious/inflammatory, vascular, and neoplastic conditions [42]. Connolly et al. reviewed imaging findings of rare and unusual ectopic pregnancies [43]. Mitchell et al. reviewed CT findings of bladder emergencies including traumatic injury, infection/inflammation, and obstruction [44]. Durrant et al. reviewed emergency complications of assisted reproductions including ectopic/heterotopic pregnancy, ovarian hyperstimulation syndrome, ovarian hemorrhage, ovarian torsion, and thromboembolism [45]. Feigal et al. reviewed non-traumatic arterial enhancing lesions detected on CTA abdomen, including pancreatic, splenic, bowel, and renal lesions [46]. Grajewski et al. reviewed sports injuries of the pediatric knee including Osgood–Schlatter’s disease, patellar sleeve fracture, Slater–Harris fracture, osteochondritis dissecans versus ossification variant, ACL injury, and transient patellar dislocation [47]. Hakim et al. reviewed sonographic, CT, and MR findings of ovarian torsion [48]. Hakim et al. reviewed imaging findings of acute gastric pathology including gastritis, obstruction, volvulus, ulcer disease, perforation, hemorrhage, emphysematous gastritis, and bariatric surgery complications [49]. Hanna et al. sought to characterize the most frequent users of emergency department imaging which may aid future interventions to control excessive ED imaging, costs, delays, and radiation exposure [50]. Homa et al. reviewed imaging appearance of incidentally detected breast cancers on CT [51]. Hu et al. reviewed diffusion-weighted imaging in pediatric neuroradiology, including infection, cerebrovascular disease, neoplasms, and metabolic disease [52]. Ignaciuk reviewed non-traumatic arterial enhancing lesions detect on trauma CTA of the abdomen [53]. Thungkatikajonkit et al. reviewed combined KUB radiography and ultrasound in the diagnosis of obstructive ureterolithiasis. They found that these two evaluations in combination are reasonably accurate in making this diagnosis in patients with acute flank pain [54]. Suthiwartnaruput et al. reviewed imaging utilization and outcomes before and after having a standard diagnostic imaging pathway, utilizing ultrasound followed by CT if ultrasound was equivocal/inconclusive, for acute appendicitis in adults presenting to the ED [55]. Kallas et al. reviewed acute non-traumatic nasal pathology including infectious, inflammatory, neoplastic, vascular, and toxic inhalation [56]. Kim et al. reviewed the prevalence and factors affecting management of incidental findings detected on trauma CT [57]. Krishna et al. reviewed acute emergencies of the abdominal aorta including traumatic injury, aneurysm, complications of endovascular aneurysm repair, the spectrum of acute aortic syndromes, aortitis, free-floating thrombus, and aortic fistulas [58]. Krishna et al. reviewed accuracy of MRI for diagnosing internal hernia in pregnant women with Roux-en-Y gastric bypass and found

similar accuracy compared to CT [59]. Lazaga et al. reviewed pertinent imaging findings in abdominal hernias complicated by bowel obstruction [60]. List et al. reviewed MRI appearance of a normal pediatric appendix as well as imaging findings of early, transmural, and perforated appendicitis [61]. Maddu et al. reviewed post-surgical anatomy and acute complications of bariatric surgery including Roux-en-Y gastric bypass, laparoscopic gastric banding, and sleeve gastrectomy [62]. Maddu et al. reviewed the relationship between patient characteristics and incidental findings detected on abdominopelvic CT. They found a positive correlation between increasing age as well as increasing BMI and the number of incidental findings described [63]. Marquez et al. reviewed imaging findings and clinical implications of spinal hardware subsidence [64]. Massa et al. reviewed acute and chronic complications of cesarean section [65]. Mathew et al. reviewed etiologies of flank pain other than urolithiasis [66]. Millet et al. reviewed uncommon abdominopelvic hernias and complications [67]. Monahan et al. reviewed imaging findings that may aid in differentiating various types of enterocolitis, including infectious, inflammatory, vascular, and immune-mediated etiologies [68]. Mushtaq et al. reviewed the diagnostic accuracy of overnight residents in interpreting emergent MRI for pediatric acute appendicitis. They found that overnight resident performance was comparable to attending interpretation and that performance improved with each progressive academic year [69]. Myers et al. reviewed the importance of parental communication about radiation risks and benefits for pediatric patients [70]. Jimenez-Ocasio et al. reviewed imaging findings of cystic fibrosis in patients presenting to the emergency room [71]. Myers et al. reviewed alternative abdominopelvic pathologies detected on MRI ordered to evaluate for acute appendicitis [72]. Krishna et al. reviewed imaging findings of complications associated with percutaneous gastrostomy placement [73]. Neymotin et al. reviewed acute imaging manifestations of illicit drug use [74]. Ojili et al. reviewed imaging findings associated with rare abdominopelvic infections [75]. Parvinian et al. reviewed complications of cardiopulmonary resuscitation including osseous and visceral injuries as well as findings associated with unsuccessful CPR [76]. Sanchez et al. reviewed medical imaging utilization in the emergency department. They found that over the past two decades, ED imaging utilization (specifically CT) has grown tremendously for both adult and pediatric patients without a concomitant increase in diagnosis of clinically significant health conditions. They suggested that increased use of clinical decision support and appropriate use criteria may help curb this trend [77]. Sailing et al. reviewed emergent presentations of colorectal cancer including obstruction, perforation, ischemia, appendicitis/infection, hemorrhage, fistula, and intussusception [78]. Selvam et al.

reviewed ultrasound imaging of common musculoskeletal injuries in the emergency setting [79]. Widule et al. reviewed sonographic imaging of abdominal muscle injuries [80]. Shin et al. reviewed the most common etiologies and imaging features of gastric pneumatosis [81]. Halpin et al. discussed methods of building a sustainable quality improvement initiative in emergency radiology [82]. Sodickson et al. discussed incorporation of a fully automated dual energy CT post-processing workflow into emergency radiology practice [83]. Starcevic et al. reviewed non-traumatic causes of hemoperitoneum including vascular, gynecologic, neoplastic, and iatrogenic etiologies [84]. Starcevic et al. reviewed ultrasound and MR imaging of the placenta including normal variants, twin gestation, and placental implantation [85]. Sun et al. reviewed radiographic and CT imaging of blunt diaphragmatic injuries [86]. Szaflarski et al. presented a pictorial review of past and present caval filtration devices [87]. Theriot et al. reviewed avulsion fractures of the appendicular skeleton [88]. Wilseck et al. reviewed imaging findings and interventional management of carotid blowout syndrome [89]. Zheng et al. reviewed pelvic ring injuries including findings that predict injury severity and may help guide management [90].

Scientific posters

Koskinen et al. emphasized the importance in detecting fibular styloid/head fractures in the setting of medial plateau fracture as there may be increased posterolateral rotary instability or lower functional scores [91]. Beckman et al. suggested elevated BMI may convey a protective effect against blunt cervical spine injury, particularly in female patients [92]. Graumans et al. suggested that using a split bolus single pass whole body CT protocol for initial trauma evaluations does not lead to clinically significant missed vascular injuries and will help decrease radiation exposure for young trauma patients [93]. Trinh et al. suggested that dual energy CT derived calcium concentration and calcium Hounsfield units may be able to predict an elderly patient's risk for fragility fractures [94]. Onoue et al. suggested that cervical spine MRI should be strongly considered after initial negative cervical spine CT evaluations in those trauma patients who exhibit upper extremity neurologic deficits or in cases of persistent clinical concern for significant cervical spine injury [95]. Narayanasamy et al. found that two imaging findings (a focal mural defect and focal inflammation adjacent to the appendiceal wall) significantly improves accuracy of CT diagnosis of perforate appendicitis [96]. Beenen et al. found that instituting dedicated mass casualty whole body CT protocols is integral in the optimization of triage and clinical management of patients in these scenarios [97]. Haroon et al. found that high frequency ultrasound was highly effective in preoperative detection of penetrating tendon and nerve injuries [98]. Gunneweg et al. suggested that a

significant percentage of patients with severe pelvic ring injuries are at increased risk for developing cancer due to initial/follow-up trauma imaging and alternatives such as MRI should be considered [99]. Hanna et al. found that following overnight shifts, radiology residents and faculty displayed decreased diagnostic confidence, significant increase in view time per case, increase in total gaze fixation and increased time to fixate on fractures [100]. Li et al. found a high rate of concordance between CT and subsequent ultrasound examinations in the setting of acute non-traumatic abdominal pain without significant additional clinically relevant information gained with the subsequent US evaluation [101]. Archer-Arroyo et al. found that a 80HU trigger threshold (rather than the manufacturer suggested 120HU) for bolus tracking during whole body dual energy CT provides the best enhancement of arterial vasculature with the least variability [102]. Imanzadeh et al. surveyed radiologists and found that there was a desire for additional training on medicolegal issues in form of targeted didactics or CME [103]. Adam et al. reviewed second interpretations of outside hospital cervical spine CT in trauma transfer patients and found a significant number of cases in which clinical management was changed after the second read [104]. Mushtaq et al. found that MRI may serve as a rapid and practical initial alternative to ultrasound in the evaluation of suspected pediatric appendicitis [105]. Dileo et al. found that the presence of renal calculi on prior imaging significantly impacted the likelihood of obstructive uropathy detected in patients presenting to the ER [106]. Cooper et al. found that subtle but significant discrepancies (such as stylistic wording or differential interpretation) between resident prelims and attending final reads on ER cases have potential to affect clinical management and should be taken into account by training programs [107]. Kim et al. found that after creation of a dedicated emergency radiology division, there was a significant increase in preoperative radiology reporting and significant decrease in preliminary/finalized report turnaround times and start time of emergency operations [108].

Compliance with ethical standards

Conflict of interest The author declares that he has no conflict of interest.

References

1. Pao J, Rudd A, Cruz A, Mendoza E, Gedeon D, Chow D (2017) Thoracolumbar spine trauma: a review of the evolving classification scheme. *Emerg Radiol*
2. French TD, Hoffman JC, Kim DT, Patlas MN, Sliker C, Katz DS, Choi AY (2017) A 2017 national survey to assess blunt trauma CT protocols at U.S. and Canadian trauma centers. *Emerg Radiol*
3. Marshall RA, Mandell J, Gosangi B, Weaver M, Ferrone M, Sodickson A, Khurana B (2017) Thinking beyond trauma:

- imaging features and management in atypical, pathologic and stress fractures. *Emerg Radiol*
4. Tade R, Peterson R, Rohatgi S (2017) Traumatic vertebral artery injuries: the essentials. *Emerg Radiol*
 5. Chiu A, Kang Y, Pandit R, Chou B, Patel M (2017) Prevalence and characterization of craniocervical junction ligamentous injury by high resolution MR imaging. *Emerg Radiol*
 6. Velez H, Graves J, Rohatgi S, Vakil M, Peterson R (2017) Did I miss it again? Missed and nearly missed lesions at the skull base on routine head CT from the ER. *Emerg Radiol*
 7. Haber M, Nunez D, Uyeda J, Sodickson A (2017) Fundamentals of neuroradiology: a head CT tutorial. *Emerg Radiol*
 8. Wong L, Linke RG (2017) Does augmented reality have a role in trauma care? *Emerg Radiol*
 9. Hoff C, Archer-Arroyo K, Ptak T, Rohatgi S (2017) Emergency neuroimaging in HIV patients: distinctive diagnostic considerations. *Emerg Radiol*
 10. Patel S, Lev S (2017) Head in the air: patterns of abnormal gas collections on emergency head CT. *Emerg Radiol*
 11. Stafford WL, Lukins D (2017) Evaluation of craniocervical junction injuries in pediatric patients. *Emerg Radiol*
 12. Gutierrez Chacoff J, Valdes E, Aranedo C, Zugbe N, Vargas D, Varela C (2017) Imaging of penetrating trauma: all you need to know for an accurate report. *Emerg Radiol*
 13. Beckmann N (2017) AO classification of distal femur fractures: a simplified system with surgical implications. *Emerg Radiol*
 14. Guirguis M, Beckmann N (2017) Traumatic scapular fractures: a review of classification and management. *Emerg Radiol*
 15. Josifoski D, Starcevic V, Rheinboldt M (2017) Ankle avulsion injuries: early detection, cross-sectional correlation and pathophysiological implications. *Emerg Radiol*
 16. Zeidenberg J, Durso A, Caban K, Danton G, Munera F (2017) Evaluation of triple phase contrast MDCT vs single phase contrast MDCT in the setting of penetrating torso trauma. *Emerg Radiol*
 17. Ratanaprasatporn L, Nunez D, Khurana B, Duran-Mendicuti A (2017) Using an electronic learning management system to teach emergency radiology to a new generation of learners. *Emerg Radiol*
 18. Sanhaji L, Jarolimek A (2017) Radiology preparedness plans in mass casualty incidents in underserved countries: how can we help? RadAid UT Health chapter2017 project in Morocco. *Emerg Radiol*
 19. Shi J, Uyeda J, Duran Mendicuti M, Potter C, Nunez D (2017) MDCT of laryngeal injuries: principles of injury recognition. *Emerg Radiol*
 20. Zhang C, Khosa F, Bilow R, Berger F, Savvas N (2017) Developing a standardized disaster radiology curriculum in emergency radiology fellowship. *Emerg Radiol*
 21. Cavallo J, Cooper K, Bokhari J (2017) Frequency of characteristic findings of aortic dissection on non-enhanced computed tomography. *Emerg Radiol*
 22. Cruz A, Gedeon D, Mendoza E, Pao J, Rudd A, Rezai F, Green J (2017) EVAR in the ER: an overview of do not miss diagnoses. *Emerg Radiol*
 23. Ellerbrook L, Elliott G, Gouner C, Gerdes C (2017) Evaluation of acute aortic syndromes in the ED: a pictorial review. *Emerg Radiol*
 24. Kingler N, Maddu K (2017) Pulseless, broken and dislocated—CTA of traumatic injury to the extremities. *Emerg Radiol*
 25. Boruah P, Laste Z, Bhat A, Kohl L, Budovec J, Shahir K, Baruah D (2017) Cardiac tamponade: what the resident or fellow should look at while evaluating a CT chest after hours? *Emerg Radiol*
 26. Laste Z, Bhat A, Kohl L, Budovec J, Shahir K, Baruah D (2017) Lung toxicity related to new drugs: what an emergency radiologist should know. *Emerg Radiol*
 27. Fong V, Chaudhuri D (2017) Diagnostic yield of pulmonary embolism in combined CT imaging of the chest with the abdomen and pelvis in the emergency department. *Emerg Radiol*
 28. Shin H, Dattwyler M (2017) Nontraumatic cardiac findings on non-ECG gated chest CT. *Emerg Radiol*
 29. Beckmann N (2017) Imaging of pediatric musculoskeletal infection. *Emerg Radiol*
 30. Laur O, Mandell J, Titelbaum D, Cho C, Smith S, Khurana B (2017) Acute nontraumatic back pain in the emergency department: Infection or mimic? *Emerg Radiol*
 31. McEnulty P, Berg G, Harrison P, Ali K, McGuire C (2017) Communication of incidental findings to trauma patients. *Emerg Radiol*
 32. Robinson C, Shyu J, Mandell J, Smith S, Patel K, Khurana B (2017) Crystal deposition disease in the emergency department: pearls and pitfalls. *Emerg Radiol*
 33. Cornman-Homonoff J, Asrani A (2017) MRI of female pelvic emergencies. *Emerg Radiol*
 34. Haber M, Nunez D (2017) Acute neurologic emergencies in pregnancy and puerperium. *Emerg Radiol*
 35. Heilala A, Lin D, Rheinboldt M, Griffith B, DelProposto Z (2017) Reversible callosal splenic lesions in association with febrile illness. *Emerg Radiol*
 36. Spain J, Starcevic V, Rheinboldt M, DelProposto Z (2017) MDCT imaging of pelvic inflammatory disease: the gamut of imaging findings with emphasis on early detection and differential diagnostic considerations. *Emerg Radiol*
 37. Anilkumar A, Zhang J, Schweitzer M, Huang M (2017) Impact of choices of imaging modality on length of hospital stay for patients with intertrochanteric extension of greater trochanteric fractures in the emergency department. *Emerg Radiol*
 38. Ballard D, Raptis C, Guerra J, Punch L, Ilahi O, Kirby J, Mellnick V (2017) Preoperative computed tomography findings and interobserver reliability of Fournier’s gangrene. *Emerg Radiol*
 39. Velez H, Herr K, Goodin S, Hanna T (2017) Top 10 most frequent resident misses: literature review and case examples. *Emerg Radiol*
 40. Hakim B, Blase J, Rheinboldt M, Delproposto Z, Starcevic V (2017) Upper urinary tract infection: the spectrum of imaging findings from early detection to late complications and atypical variants. *Emerg Radiol*
 41. Bonnet S, Gans B, Yu J (2017) Breast emergencies: what the emergency radiologist should know. *Emerg Radiol*
 42. Chang A, Kailannan K, Bokhari S (2017) The forgotten right lower quadrant organ: acute pathologies of the cecum. *Emerg Radiol*
 43. Connolly M, Millet J, Chong S, Maturen K (2017) Rare and unusual ectopic pregnancies: necessities and nuances in diagnosis at ultrasound. *Emerg Radiol*
 44. Giordano M, Cressman S, Rheinboldt M, Delproposto Z (2017) MDCT imaging of bladder emergencies: the gamut of imaging findings. *Emerg Radiol*
 45. Durrant E, Kreml J, Martinovic E, Ditkofsky N (2017) Emergency complications of assisted reproductive technology. *Emerg Radiol*
 46. Feigal D, Oewin J, Ignaciuk M, Ayoob A, Nickels D, Lee J (2017) Review of non-traumatic arterial enhancing lesions encountered on trauma CTA of the abdomen: part 2 spleen, pancreas, kidney and bowel. *Emerg Radiol*
 47. Grajewski K, Chong S, Yablon C, Gaetke-Udager K, Leschied J (2017) Sports injuries of the pediatric knee: acute and chronic patterns of injury of the skeletally immature knee. *Emerg Radiol*
 48. Hakim B, Rheinboldt M (2017) Multimodality imaging of ovarian torsion: sonographic, MDCT and MRI findings. *Emerg Radiol*
 49. Hakim B, Rheinboldt M, Delproposto Z (2017) MDCT imaging of acute gastric pathology: the gamut of imaging findings. *Emerg Radiol*

50. Hanna T, Singh K, Kundu S, Theriot D, Wood D, Duszak R (2017) Characterizing the most frequent users of emergency department imaging. *Emerg Radiol*
51. Homa D, Potlapally S (2017) Incidental detection of breast cancer on CT. *Emerg Radiol*
52. Hu E, Parmar H, Moritani T, Kim J (2017) Diffusion weighted imaging in pediatric neuroradiology. *Emerg Radiol*
53. Ignaciuk M, Owen J, Feigal D, Ayoob A, Nickels D, Lee J (2017) Review of non-traumatic arterial enhancing lesions encountered on CTA of the abdomen: Part 1 Liver. *Emerg Radiol*
54. Thungkatikajonkit P, Wongwaisayawan S, Wibulpolprasert A, Viseshsindh W, Kaewlai R (2017) Is combined KUB radiography and ultrasound sufficient for the diagnosis of obstructive ureterolithiasis in patients presenting with acute flank pain?. *Emerg Radiol*
55. Suthiwartnaruput K, Wongwaisayawan S, Jenjitranant P, Prachanukool T, Sumritpradit P, Kaewlai R (2017) Imaging utilization, performance and outcome before and after having standard diagnostic imaging pathway for acute appendicitis in adult patients presenting to the emergency department. *Emerg Radiol*
56. Kallas O, Graves J, Bagnon K, Joshi G, Rohatgi S, Herr K, Hanna T (2017) Right on the nose: an imaging review of acute non-traumatic nasal pathology. *Emerg Radiol*
57. Kim S, Crawford T, Shaves S, Donnal J (2017) Incidental findings on trauma patient CT scans at a Level 1 Trauma Center: prevalence and potential factors affecting management. *Emerg Radiol*
58. Krishna S, Sathiadoss P, Narayanasamy S, Sheikh A (2017) Acute emergencies of the abdominal aorta: what every emergency radiologist needs to know. *Emerg Radiol*
59. Krishna S, McInnes M, Schieda N, Narayanasamy S, Sheikh A, Kielar A (2017) Accuracy of MRI for diagnosis of internal hernia in pregnant women with Roux-en-Y gastric bypass. *Emerg Radiol*
60. Lazaga F, Parikh N, Kumar Y (2017) Abdominal hernias complicated by bowel obstruction: what the radiologist needs to know. *Emerg Radiol*
61. List J, Willson B, Allbery S, Powers A, Cusick R, Abosolo P (2017) Pictorial essay of pediatric MR appendicitis with pathologic correlation. *Emerg Radiol*
62. Maddu K, Tarek H, Faisal K, Zygmunt M (2017) Bariatric surgery: review of post surgical anatomy and acute complications. *Emerg Radiol*
63. Maddu K, Shekhani H, Hanna T, Bhulani N, Khosa F (2017) Relationship between patient characteristics and incidental findings in adult CT abdomen/pelvis. *Emerg Radiol*
64. Marquez H, Garg V, Hall J, O'Neill T, Moore W, Stehel E, Scott D (2017) Substance of discussing vertebral subsidence: definition and review of emergent post-procedural complications. *Emerg Radiol*
65. Massa P, Rheinboldt M, Gonzalez-Sandoval O, DelProposto Z, Sever A (2017) MDCT and sonographic imaging of post-operative complications of cesarean section: the gamut of acute and chronic findings. *Emerg Radiol*
66. Matthew B, Jeyakumar T, Sharma K, Sapire J (2017) Beyond the stones: uncommon and rare causes of acute flank pain. *Emerg Radiol*
67. Millet J, Parikh K, Shankar P, Chong S, Wasnik A (2017) Rare and atypical abdominopelvic hernias: what the clinician needs to know. *Emerg Radiol*
68. Monahan H, Iyer V, Froemming A, Fletcher J, Hough D, Khandelwal A (2017) Imaging pattern characteristics and differentiation of acute enterocolitis. *Emerg Radiol*
69. Mushtaq R, Desoky S, Morello F, Gilbertson-Dahdal D, Udayasankar U (2017) Diagnostic accuracy of overnight residents in interpreting emergent MRI in children with suspected acute appendicitis. *Emerg Radiol*
70. Myers R, Li T, Jimenez-Ocasio J, Rizvi A, Mozzor M, Gerard P (2017) Honey, I radiated the kids! The importance of parental communication in the pediatric emergency setting. *Emerg Radiol*
71. Jimenez-Ocasio J, Rizvi A, Myers R, Tianyang L, Hasan U, Gerard P, Brudnick A, LeCompte L (2017) Cystic fibrosis: the imaging findings in various patient presentations in the emergency setting. *Emerg Radiol*
72. Myers R, Li T, Jimenez-Ocasio J, Rizvi A, Gerard P, LeCompte L, Gilet A (2017) Expanding the utility of MRI in the evaluation of acute appendicitis: how pediatric radiologists can learn to expect the unexpected. *Emerg Radiol*
73. Krishna S, Sathiadoss P, Narayanasamy S, Sheikh A (2017) The 'complicated' percutaneous gastrostomy catheter. *Emerg Radiol*
74. Neymotin A, Hamlin S, Hanna T, Joshi G, Herr K (2017) Under the influence: acute imaging manifestations of illicit drug use. *Emerg Radiol*
75. Ojili V, Nepal P, Kaur N, Nagar A (2017) Uncommon but still encountered in the emergency department—cross sectional imaging spectrum of rare abdominal and pelvic infections. *Emerg Radiol*
76. Parvinian A, Akhtar N, Menias C, Khandelwal A (2017) Deep impact: complications of cardiopulmonary resuscitation. *Emerg Radiol*
77. Sanchez Y, Le T, Gottumukala R, Raja A, Duszak R, Prabhakar A (2017) Medical imaging utilization in the ED: a review of current literature. *Emerg Radiol*
78. Saling L, Mellnick V, Raptis C, Bhalla S, Menias C, Pickhardt P (2017) Big trouble in the large bowel: emergent presentations of colorectal cancer. *Emerg Radiol*
79. Selvam N, Doshi S, Patel Z, Nall C (2017) Fundamentals of ultrasound imaging of common musculoskeletal injuries in the emergency setting. *Emerg Radiol*
80. Widule C, Sheldon L (2017) Sonographic evaluation of rectus abdominis muscle injuries. *Emerg Radiol*
81. Shin H, Mansouri M, Singh A (2017) Gastric pneumatosis: etiology and imaging features. *Emerg Radiol*
82. Halpin L, Shyu J (2017) How to do it: quality and process improvement in emergency radiology. *Emerg Radiol*
83. Sodickson A, Primak A, Keraliya A (2017) Workflow evaluation of a new fully automated dual energy CT post-processing configuration. *Emerg Radiol*
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