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BOOK OF ABSTRACTS



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Acute appendicitis: appendiceal angle, morphological variations detected on CT imaging

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Purpose: We aimed to investigate whether there was an association between appendiceal angle, localisation, length of the appendix and acute appendicitis. To the best of our knowledge, there has been no study investigating the relationship between appendiceal angle and appendicitis development.

Methods and Materials: 226 Abdomen CT scans, (n=116 normal, and n=110 histopathologically proven appendicitis) performed for prediagnosis of acute appendicitis between 2016-2018, were evaluated retrospectively. Diameter-length-localisation of the appendix, appendiceal angle, contrast enhancement, mesenteric stranding, peritoneal thickening, lymphadenopathy, appendicolith, complication, primary/secondary classification were evaluated. Localisation of appendix was classified in 8 groups, as follows; 1:pre-ileal, 2: post-ileal, 3: promontoric, 4: pelvic, 5: subcecal, 6: prececal/paracolic, 7: retrocecal, 8: subhepatic.

Results: Contrast enhancement (%100), and mesenteric stranding (94.5%) were the most observed parameters. There was no significant relationship between appendicitis and the length (p=0.885) or the localisation of appendix. (p=0.231) Pelvic was the most common localisation. Mean of the appendiceal angle for appendicitis group, and normal group was 98.19±41.89, and 85.45±43.31, respectively. There was significant difference for appendiceal angle between appendicitis and normal group(p= 0.028). ROC analysis showed cut-off value of 104.5°, AUC=0.585 (0.510-0.659); p=0.017) (sensitivity 45.45%, specificity 69.82%, accuracy 57.96%). We didn't observe a significant difference for appendiceal angle in complication development. Localisation showed significance only for pre-ileal localisation (p=0.030). On the other hand, length was significantly shorter in complicated cases (p=0.024).

Conclusion: Appendiceal angle is the only significant factor amongst angle, length and localisation of the appendix, and can be an aetiological factor in appendicitis development.

B-0270 14:25

Conditional CT strategy effectiveness in diagnosing acute appendicitis

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Purpose: To present the results of two retrospective studies done in University Hospital Santaros Klinikos analyzing diagnostic accuracy results before and after the application conditional CT strategy and to compare their diagnostic accuracy.

Methods and Materials: Two retrospective analyses of adult patients who were admitted in Emergency room at University Hospital Santaros Clinics with suspected acute appendicitis were done: first study analysed group of 554 patients who from 2008 to 2013 underwent operation for suspected acute appendicitis and the second study included group of 459 patients who underwent operation for suspected acute appendicitis from 2016 to 2018 after implementation of conditional CT algorithm. The results of both algorithms were compared and the positive and negative effects of new diagnostic algorithm were evaluated.

Results: In the first study negative appendectomy (NA) rate was as high as 22.9 %. In Conditional CT strategy group the amount of NA was 0.8%. Increase in usage of imaging was noticed: ultrasound from 75 % up to 97 % and CT from 3.4% up to 25 %. Ultrasonography detected inflamed appendix in 67.5% of these cases, CT scan detected acute appendicitis in 30%. The sensitivity and specificity of ultrasound and CT scan was.

Conclusion: Although applying conditional CT strategy in acute appendicitis diagnostic protocol reduces the amount of negative appendectomies, it increases exposure to ionising radiation, and unnecessary CT scans rate. Taking in to account that potential patient population includes mostly young adults, some new alternatives could be a field for a further search.

B-0271 14:33

Accuracy of grey-scale ultrasound in correctly identifying acute appendicitis in comparison with surgical outcome

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Purpose: To validate ultrasonographic diagnosis of acute appendicitis using surgical outcome as the gold standard.

Methods and Materials: Cross-sectional validations setting and duration: Radiology Department, AFIRI Rawalpindi from 1st March 2013 to 31st August 2013. All the patients were referred to the sonography section of Emergency Radiology Department for suspected diagnosis of acute appendicitis. All patients of suspected appendicitis had ultrasound of abdomen. The sampling technique used was consecutive non-probability. Sonographically suspected cases of acute appendicitis resulted in appendectomy of the patient. Patients

were operated by conventional method of appendectomy. Results regarding appendix by ultrasonography and surgical outcome were recorded on the proforma. Data entry and analysis was done using SPSS v21.

Results: A total of 160 patients were included in the study. Mean age of patients was 21.39±4.332 years. There were 77 (48.1%) male and 83 (51.9%) female patients. Clinically, there were 126 (79%) patients positive for appendicitis and on ultrasound findings 121(76%) patients had appendicitis. Surgical outcome showed 125 (78%) patients as positive. Sensitivity and specificity of ultrasound for the diagnosis of appendix was 87.20% and 65.71%. While positive predictive value and negative predictive value of ultrasonography was 90.80% and 58.97%, respectively. Overall diagnostic accuracy of ultrasound was 78.12%.

Conclusion: In patients who present with clinically suspected acute appendicitis, imaging is vital and ultrasound can be a good, cheap, readily available and preferred imaging technique to confirm or support the clinical diagnosis and avoid unnecessary and erroneous surgeries especially in females.

B-0272 14:41

Diagnostic performance of abdominal ultrasound in right-sided acute colonic diverticulitis

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Purpose: To assess value of abdominal ultrasound in patients with suspected right-sided acute symptomatic diverticulitis in comparison with supplementary CT.

Methods and Materials: We retrospectively analysed 124 patients from Emergency Department (mean age of 66 ± 18 years) with final diagnosis of acute diverticulitis at discharge. For each patient were registered diagnostic-therapeutic pathway, elective pain location and simple or complicated diverticulitis features with sonography and CT, assessing value of initial US through head-to-head comparison with CT results.

Results: Of the 124 patients with diverticulitis 30 underwent directly to CT and were excluded. Among 94 patients with initial sonography and subsequent CT examination within 24 hours, US was positive in 45/94 patients (true positive) and negative in 49/94 (false negative), with diagnostic accuracy of 48%. Sonography diagnosed correctly 15/32 cases of uncomplicated diverticulitis and 30/62 complicated diverticulitis with diagnostic accuracy respectively of 47% and 48%. Regarding location of pain, US was positive in 12/35 patients with right lower quadrant pain and in 33/59 with left lower quadrant pain showing diagnostic accuracy of 34% and 56%.

Conclusion: Our data show that US in emergency setting is less reliable for diagnosing right-sided colonic diverticulitis in patients with RLQ pain.

B-0273 14:49

Clinical significance of bedside ultrasonography and second-look ultrasonography in pediatric ileocolic intussusception

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Purpose: The purpose of this study is to identify the performance characteristics of bedside ultrasonography which is performed by clinicians (B-USG), and the clinical significance of the second-look ultrasonography performed by radiologists (R-USG) for the diagnosis of pediatric ileocolic intussusception.

Methods and Materials: From October 2013 to December 2017, the patients who visited pediatric emergency department (PED) and underwent ultrasonography by radiologists for evaluating intussusception were included. The included patients were divided into two groups: group A, the patients in whom first-line B-USG were performed at PED, followed by second-look R-USG; and group B, the patients in whom R-USG were performed without B-USG. We compared the ratio of confirmed ileocolic intussusception between the two groups. The sensitivity and positive predictive value of B-USG were calculated using the result of R-USG as the gold standard.

Results: A total of 262 patients (mean age, 4.3 years old) were included: 108 patients in group A; and, 154 patients in group B. The ratios of the patients in whom ileocolic intussusception were confirmed were significantly different between group A (47.2 %, 51/108) and group B (28.6 %, 44/154) (p < 0.05). In group A, the sensitivity and positive predictive value were 98.0 % (50/51) and 58.8 % (50/85), respectively.

Conclusion: The B-USG is highly sensitive for the diagnosis of pediatric ileocolic intussusception. However, due to its low positive predictive value, the second-look ultrasonography by radiologists can improve the diagnostic accuracy, thus reduce unnecessary radiation exposure caused by fluoroscopic reduction.