can have adverse clinical outcomes. Careful consideration of factors such as better imaging equipment and enhanced operator training is needed to improve the diagnostic image quality.

Incidence, classification and associated features of lung lacerations from a UK level 1 trauma centre

Authors: Kyo Bye, Steve Amerasekera

Category: Thoracic
Purpose:
To our knowledge, there is no published literature on the prevalence of lung lacerations in trauma patients in the era of routine whole-body computed tomography (CT). We assessed the number, classification and associated features of lung lacerations in patients presenting to a level 1 trauma centre.
Methods and materials:
We reviewed all the whole-body CT reports from 1 January 2019 to 15 May 2020 (1,569 reports) to identify those with lung lacerations.
The images were independently classified according to Wagner *et al* 1988 by two radiologists, with any discrepancies classified by consensus.
Additional clinical data was collected from electronic patient records.
Results:
18 (15 male, three female) cases of pulmonary laceration were identified, with a mean age of 43 (range 19—86).
Hospital stay ranged from one to 68 days (mean duration of 17 days).
Lacerations were classified as five type I (compression rupture), six type II (compression shear), 12 type III (direct penetration). One case did not fit any category. Five cases had multiple lacerations, each with its own classification.
The injury mechanisms were: fall from height six; penetrating trauma six; road traffic collision three; pedestrian hit by car three.
Ten cases had a surgical chest drain and three cases required thoracic surgery for rib internal fixation. One patient died.
Conclusion:
Lung lacerations are a rare complication of major trauma with only 18 cases identified from 1,569 trauma cases (incidence 1.1%).
They are associated with a long hospital stay (mean duration 17 days).

Determining a D-dimer threshold for diagnosing acute pulmonary embolism in COVID-19 patients

Authors: Simon Rupret, Mike Darby

Category: Thoracic
Purpose:
The purpose of the study was to determine the average value of D-dimer in the COVID-19-positive patients diagnosed with acute pulmonary embolus (PE) and use the data to recommend a level that would increase the diagnostic accuracy of the study.
Methods and materials:
Retrospective review of 200 confirmed adult COVID-19 patients, who underwent a computed tomography pulmonary angiogram (CTPA) study for a suspected pulmonary embolism across two Bristol hospitals between 27 December 2020 and 20 January 2021.
A CDN radiology information system (CRIS) and picture archiving communications system (PACS) were used to review imaging and requests, and an integrated clinical environment (ICE) system was used to review D-dimer results.
Results:
The PE pickup rate of 12.5% was well below the non-pandemic 14.5—37.4%.
The average D-dimer among all patients was 7,900 ng/ml; 13,900 ng/ml for intensive treatment unit patients and 2,600 ng/ml elsewhere.

There was a correlation between the D-dimer value and COVID-19 severity, where in the mild, moderate and severe cohorts the D-dimer was 1,700 ng/ml, 5,700 ng/ml and 11,600 ng/ml respectively.
The severity and D-dimer also correlate — the more diffuse the changes, the higher the D-dimer values.
Conclusion:
The current D-dimer cut-off of 500 ng/ml has proven inadequate in this setting, having a negative effect on the sensitivity and specificity of the study, leading to overscanning. It is therefore the recommendation that local hospitals review their protocols and consider increasing the threshold to >1,000 ng/ml to reduce overscanning while retaining a high standard of care.
The limitations of this small two-centre study are not lost to the authors, but the findings are supported by other similar studies with comparable results.

Rate of pulmonary thromboembolic disease in COVID-19 patients: Stratification by referral source and D-dimer value

Authors: Geoffrey Lie, Harsimran Laidlow-Singh, Zelena Aziz

Category: Thoracic
Purpose:
High rates of pulmonary thromboembolic disease (PTD) are seen in COVID-19 patients. Current guidance from the British Society of Thoracic Imaging recommends a low threshold for computed tomography pulmonary angiography (CTPA) in this population, which has driven a dramatic rise in CTPA requests at our institution. We aim to report the incidence of PTD on CTPA at our institution (a tertiary hospital and major trauma centre) in all patients investigated during sample periods of the COVID-19 pandemic, and to determine whether positivity rates varied with referral source and D-dimer level.
Methods and materials:
Retrospective cohort study. Picture archiving communications system (PACS) search for CTPAs performed during the first (1 April 2020 to 6 May 2020) and second (1 December 2020 to 6 January 2021) waves of the pandemic. Electronic patient records analysed to identify COVID-19 status and D-dimer.
Results:
N=781. Overall 217/781 positive for PTD (27.8%) indicating a high rate in this large cohort. We present further subgroup analysis of PTD rates according to COVID-19 status, referral source and D-dimer level. The rate of PTD varied with referral source and was highest in critical care patients. No patients with a negative D-dimer (<0.5 μg/ml) had a positive study. Only 3% of patients with a D-dimer less than four times the upper limit of normal had PTD. D-dimer was not qualitatively correlated with likelihood of PTD or thrombus burden.
Conclusion:
During the pandemic our institution performed a large volume of CTPAs, with a high overall positive rate of PTD comparable with the wider literature, justifying use of CTPAs in this cohort. Critical care patients have higher rates of PTD. A negative D-dimer is useful in assessing risk of PTD in COVID-19 patients.

COVID-19 CT severity score on CT pulmonary angiography (CTPA): Correlation with clinical disease severity and short-term prognosis

Authors: Maria T. Tsakok, Robert Watson, Sheila Lumley, Zahi Qamhawi, Faraaz Khan, Archie Lodge, Cheng Xie, Fergus Gleeson, Rachel Benamore

Category: Thoracic
Purpose:
Establish if COVID-19 computed tomography (CT) severity determined on CTPA is associated with clinical disease severity and outcome measures.