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Traumatic Pseudoaneurysm in Abdomen and Pelvis

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Abstract

Traumatic pseudoaneurysms are localized, pulsating collections of blood that form outside the arterial wall due to a structural breach, typically caused by physical trauma or medical procedures. Detecting these lesions is critical, as they indicate significant arterial bleeding that requires urgent angiographic embolization to prevent life-threatening ruptures, infections, or nerve damage. Triple-phase CT imaging plays an essential role in diagnosing these conditions, particularly in patients presenting with severe abdominal trauma and a positive FAST scan. On these scans, pseudoaneurysms distinctively appear as focal lesions that are highly enhanced in the early arterial phase and become iso-dense to the surrounding organ tissue in later phases, allowing clinicians to accurately differentiate them from free contrast extravasation and expedite life-saving treatment.

Keywords: Traumatic Pseudoaneurysm, Abdominal Trauma/Injury, triple-Phase CT Imaging, intraparenchymal Pseudoaneurysm arterial Contrast Extravasation

Introduction

A traumatic pseudoaneurysm is a localized, pulsating collection of blood that forms outside the arterial wall due to a breach in the vessel structure. The blood accumulates within a fibrous capsule formed by surrounding tissues, creating a false aneurysm. Unlike a true aneurysm, which involves the expansion of all layers of the artery wall, a pseudoaneurysm results from a disruption that allows blood to escape from the vessel but is contained by the surrounding tissue.

Causes and Context: These pseudoaneurysms typically arise from physical trauma, such as blunt force injuries, penetration wounds, or during medical procedures like catheterizations or surgical interventions. The injury causes a tear in the arterial wall, and blood escapes into the surrounding tissue, forming a pulsating mass. They can occur in various locations depending on the nature and site of the trauma.

Aim and Objective

Role of Triple phase CT imaging to detect traumatic pseudoaneurysms in patients having history of severe abdominal trauma/ injury

Materials and Methods

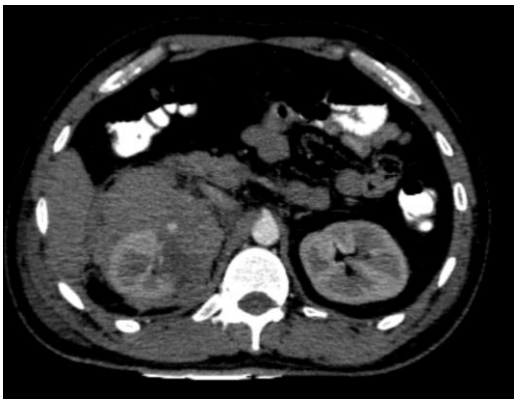
Triple phase CT imaging was performed on patients with a positive FAST scan and abdominal trauma.

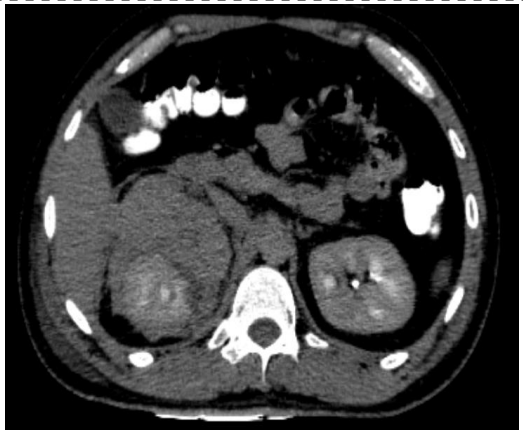
Patients were evaluated using GE 128 slice CT scanner

Case Presentations

Case 1: 34/M came to the casualty with history of road traffic accident, fast scan was performed which turned out to be positive

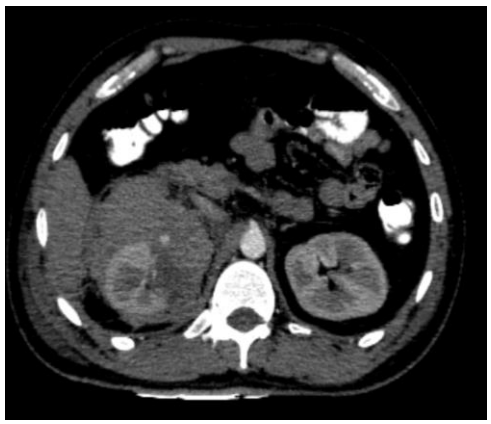
There is a 5 x 5 mm sized avidly enhancing focal dilatation of sub-segmental branch of the upper lobar artery of the right kidney Which becomes iso-dense on delayed phase imaging suggestive of traumatic pseudoaneurysm. A wedge shaped hypodense non enhancing irregular area is noted involving the upper pole of right kidney suggestive of renal infarct/ laceration A non enhancing hyperdense collection of blood attenuation is noted involving the perinephric space – perinephric hematoma

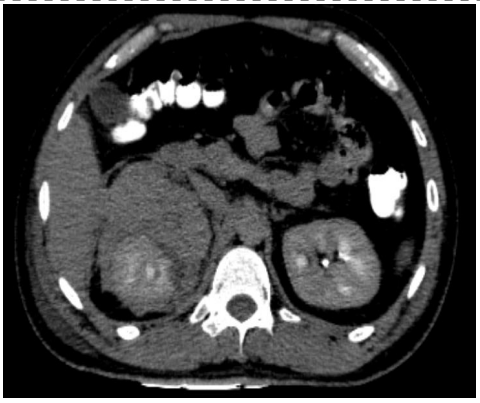




Case 2: 19 year old male came to casualty with history of road traffic accident, fast scan was performed which turned out to be positive

There is a 9x7 mm sized lobulated lesion in segment III/IVB of left lobe of liver showing intense enhancement on arterial and venous phase imaging which becomes iso-dense to hepatic parenchyma on delayed phase imaging suggestive of traumatic intraparenchymal pseudoaneurysm





Case 3: 23 year old male came to casualty with history of fall from roof fast scan was performed which turned out to be positive

There is a 8 x 5.5 mm sized lobulated lesion in mid portion of spleen showing intense enhancement on arterial phase imaging, which becomes iso dense to splenic parenchyma on venous and delayed phase imaging. This lesion appears to be in continuity with the distal branch of splenic artery.

Findings are suggestive of traumatic intraparenchymal pseudoaneurysm.

Case 4: 27-year-old female came to casualty with history of car crash. fast scan was performed which nturned out to be positive

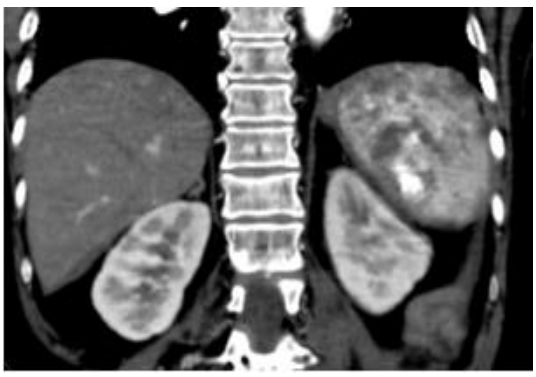
There is a 1x1 cm sized lobulated lesion in mid portion of spleen showing intense enhancement on arterial phase imaging, which becomes iso-dense to splenic parenchyma on venous and delayed phase imaging.

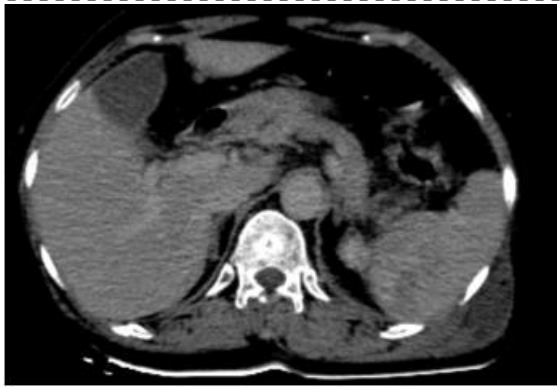
This lesion appears to be in continuity with the mid segmental branch of splenic artery.

Findings are likely suggestive of traumatic intraparenchymal pseudoaneurysm

Case 5: 44-year-old male came to casualty with history of fall from bike. fast scan was performed which turned out to be positive

There are few lobulated lesions in mid and lower portion of spleen largest of size measuring 1.6 x 1.3 cm, showing intense enhancement on arterial phase imaging, which becomes iso-dense to splenic parenchyma on venous and delayed phase imaging. Findings are likely suggestive of traumatic intraparenchymal pseudoaneurysms. (AAST GRADE IV)





Result

Arterial contrast material extravasation is a high-flow extravasation that appears in the early arterial phase as an area of high attenuation, isodense to the adjacent arteries. A jet of contrast-enhanced blood, a pool of contrast within a pseudoaneurysm, or dependent layering of contrast can also occur. The CT differentiation of a contained pseudoaneurysm from free extravasation is of particular importance since the latter On delayed scans, free extravasation demonstrates continued increase in amount and density of extravasated contrast, whereas a pseudoaneurysm remains unchanged.

Cases with severe abdominal injury and a positive FAST SCAN should undergo a CT triple phase imaging to rule out pseudoaneurysm as it indicates significant arterial bleeding requiring urgent angiographic embolization.

Pseudoaneurysms can rupture, causing significant bleeding and potentially life-threatening complications, Bacterial infections can occur in the collection of blood and surrounding tissue , they can cause nerve damage: leading to nerve damage, which can result in numbness, weakness, or paralysis.

References

1. Hasin A, et al. CT of Penetrating Abdominopelvic Trauma. Radio Graphics. 2021;41(4):1141-1161.
2. Boscak AR, Shanmuganathan K, Mirvis SE, et al. Optimizing trauma multidetector CT protocol for

blunt splenic injury: need for arterial and portal venous phase scans. Radiology. 2013;268(1):79-88.

3. Kawashima A, Sandler CM, Corl FM, et al. Imaging of renal trauma: a comprehensive review. Radio Graphics. 2001;21(3):557-574