



Incidental chest findings on coronary CT angiography: a pictorial essay and management proposal

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ABSTRACT

Many health systems have been using coronary CT angiography (CCTA) as a first-line examination for ischaemic heart disease patients in various countries. The rising number of CCTA examinations has led to a significant increase in the number of reported incidental extracardiac findings, mainly in the chest. Pulmonary nodules are the most common incidental findings on CCTA scans, as there is a substantial overlap of risk factors between the population seeking to exclude ischaemic heart disease and those at risk of developing lung cancer (i.e., advanced age and smoking habits). However, most incidental findings are clinically insignificant and actively pursuing them could be cost-prohibitive and submit the patient to unnecessary and potentially harmful examinations. Furthermore, there is little consensus regarding when to report or actively exclude these findings and how to manage them, that is, when to trigger an alert or to immediately refer the patient to a pulmonologist, a thoracic surgeon or a multidisciplinary team. This pictorial essay discusses the current literature on this topic and is illustrated with a review of CCTA scans. We also propose a checklist organised by organ and system, recommending actions to raise awareness of pulmonologists, thoracic surgeons, cardiologists and radiologists regarding the most significant and actionable incidental findings on CCTA scans.

Keywords: Incidental findings; Cardiac-gated imaging techniques; Coronary angiography; Lung neoplasms.

INTRODUCTION

Coronary CT angiography (CCTA) has recently been included in the guidelines for the diagnosis and management of coronary artery disease by several international cardiological societies, such as the American Heart Association/American College of Cardiology, the European Society of Cardiology and the European Association for Cardio-Thoracic Surgery.⁽¹⁾ In addition, the National Institute for Health and Care Excellence also recommends CCTA as a first-line test for evaluating stable angina based on cost-effectiveness and diagnostic accuracy.^(2,3)

Numerous incidental findings (IFs) can be documented by CCTA, despite the small field of view (FOV) and optimised protocol for cardiac anatomy and function. A systematic review by Kay et al.⁽⁴⁾ reported IFs in 45% of CCTA scans (7-100%).

Most IFs are clinically insignificant and pursuing them can add unnecessary costs and occasionally harmful evaluations. However, some IFs might present an alternative explanation for symptoms often misinterpreted as ischaemic heart disease (IHD).⁽⁵⁾ In addition, the opportunity for dual screening (i.e., screening for IHD and lung cancer) in a population that shares risk factors of

both diseases (e.g., advanced age and smoking habits) is appealing and could be achieved by using the full FOV.⁽⁶⁾

CCTA services have been successfully implemented worldwide, being most often the result of a partnership between radiologists and cardiologists. However, the service provision, multidisciplinary support, referral pathways and even access to relevant clinical information or previous examinations are very dependent on local practice, expertise and resources.⁽²⁾ Therefore, clear guidelines for reporting and managing IFs are challenging to be implemented, but the need for multidisciplinary collaboration, including pulmonologists and thoracic surgeons, is widely recognised.

This pictorial essay reviews the most common IFs on CCTA scans, organised by organ and structure (Table 1) and discusses their clinical significance and proposed management.

Lung

IFs of the lung are the most common ones, with pulmonary nodules (PNs) or masses occurring in 14% to 38% of CCTA scans.^(4,5) Multiple international societies provide guidelines for investigating and managing PNs that exceed 5 mm in diameter (or 80 mm³ in volume) or show suspicious features.⁽⁷⁻¹¹⁾ Suspicious

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Table 1. Checklist of incidental findings on coronary CT angiography per organ/system.

<p>Lung</p> <p>Solid pulmonary nodule</p> <ul style="list-style-type: none"> < 5 mm or < 80 mm³ with no suspicious features (e.g., granulomas, IPLNs) <ul style="list-style-type: none"> → Reporting is optional, and no follow-up is required > 5 mm, previously unknown or with suspicious features <ul style="list-style-type: none"> → Report and alert the respiratory team 5-8 mm → Baseline LDCT and provide an LDCT follow-up schedule <ul style="list-style-type: none"> 5-6 mm: LDCT within one year 6-8 mm: LDCT within three months > 8 mm or > 300 mm³ → Assess the risk of cancer (Brock model) <ul style="list-style-type: none"> < 10% risk of cancer: baseline LCDT and follow-up LDCT within one year ≥ 10% risk of cancer: referral to lung cancer MDT <p>Subsolid pulmonary nodule</p> <ul style="list-style-type: none"> ≥ 5 mm → Report to and alert the respiratory team <ul style="list-style-type: none"> → Baseline LDCT and provide a follow-up schedule within three months Stable after ≥ 3 months: assess the risk of cancer (Brock model) <ul style="list-style-type: none"> < 10% risk of cancer: follow-up LDCT within one year ≥ 10% risk of cancer: referral to lung cancer MDT Growing or altered morphology → Referral to lung cancer MDT <p>Pulmonary emboli → Report and urgent referral to the respiratory team</p> <p>ILAs → Report to and alert the respiratory team</p> <ul style="list-style-type: none"> In the presence of respiratory symptoms, physiological abnormalities, gas transfer abnormalities and extensive CT changes → Referral to the respiratory team/ILD MDT meeting In the presence of risk factors for progression → Follow-up may be appropriate even after exclusion of ILD (the optimal interval for follow-up CT scanning is unknown) <p>Infection/Consolidation</p> <ul style="list-style-type: none"> → Report and referral to the respiratory team if not already under their care → CT reassessment after therapy <p>Emphysema → Report and grade severity</p> <p>Bronchiectasis, atelectasis → Report</p> <p>Pleura</p> <p>Pneumothorax (rare) → Report and urgent referral to the medical emergency team</p> <p>Pleural plaques → Report</p> <ul style="list-style-type: none"> in lung cancer patients: differentiate pleural plaques from pleural metastases in asbestos exposure: assess signs suspicious for mesothelioma <p>Pleural effusion → Report</p> <ul style="list-style-type: none"> in cardiac patients it may be related to heart failure: trigger an alert <p>Mediastinum</p> <p>Pneumomediastinum (rare) → Report and urgent referral to the medical emergency team</p> <p>Mediastinal nodule or mass → Report</p> <ul style="list-style-type: none"> if presenting suspicious features → Referral to the cardiothoracic surgical team if benign-looking → Suggest annual CT follow-up or MRI characterisation <p>Aorta and pulmonary vessels → Report abnormalities in the context of the patient's cardiovascular disease</p> <p>Lymphadenopathy → Report</p> <ul style="list-style-type: none"> if suspicious features or absence of an explaining disease to justify lymphadenopathy → Consider providing a follow-up schedule or suggest further characterisation with PET-CT or biopsy <p>Oesophageal hiatus hernia → Report</p> <ul style="list-style-type: none"> In the presence of heartburn (confounding symptom) → Referral to gastrointestinal evaluation <p>Chest wall</p> <p>Bone</p> <ul style="list-style-type: none"> 'Do not touch' lesions → Report but no follow-up required Degenerative bony changes → Report (may cause atypical chest pain) Suspicious bone lesions → Report and trigger an alert <p>Skin, subcutaneous and muscle lesions → Report new or previously undiagnosed lesions</p> <p>Breast → Report new or previously undiagnosed lesions and alert breast team</p>

Continue...▶

Table 1. Checklist of incidental findings on coronary CT angiography per organ/system. (Continued...)

Upper abdomen
Liver
Simple hepatic cysts → Reporting is optional, and no follow-up is required
Other focal parenchymal lesions → Report if previously undiagnosed and suggest further evaluation with triple-phase CT or MRI
Biliary system
Abnormal appearance of the gallbladder wall, biliary obstruction or pneumobilia → Report and suggest further evaluation
Gallstones → Reporting is optional, and no follow-up is required
Adrenal glands, pancreas, stomach and spleen
Any cystic or solid lesions, or splenomegaly → Report and suggest further evaluation if previously undiagnosed
Kidneys
Simple or minimally complex renal cysts (Bosniak I and II) → Reporting is optional, and no follow-up is required
Complex renal cysts → Report and suggest further evaluation
Solid renal masses → Report and trigger an alert
Peritoneum
Nodules, infiltrative masses, haziness, ascites, peritoneal thickening or implants → Report, alert and suggest further evaluation
Lymphadenopathy → Report and suggest further evaluation

IPLNs: intrapulmonary lymph nodes; LDCT: low-dose CT; MDT: multidisciplinary team; ILAs: interstitial lung abnormalities; and ILD: interstitial lung disease.

features of malignancy in PNs include the diameter-volume ratio, growth, distance from the pleura (if more than 10 mm), spiculation, ground-glass appearance, pleural indentation, vascular convergence, circumference-diameter ratio (roundness), upper lobe location, presence of air bronchogram, presence of lymphadenopathy and cavity wall thickness. Benign features include some patterns of nodule calcification (diffuse, central, laminated or popcorn pattern), smooth border, cavitation, satellite lesions and perifissural location.⁽⁸⁾

The British Thoracic Society^(8,9) recommends the Brock model for estimating the risk of lung cancer in any solid nodule greater than 8 mm in diameter (or 300 mm³ in volume) and in subsolid nodules larger than 5 mm if they are stable after three months. The decision between CT surveillance or further characterisation (i.e., PET-CT, biopsy, excision or non-surgical treatment) depends on this risk estimate, so the report should include it.⁽⁹⁾ However, physicians should note that the Brock model was validated for low-dose CT scans and not for CCTA scans.^(12,13) For solid, noncalcified PNs measuring between 5 and 8 mm in diameter, their growth rate is better at distinguishing malignancy from benign pathology than are morphological features. Because of this, the Fleischner Society recommends performing a baseline low-dose chest CT as soon as possible and a subsequent follow-up low-dose chest CT for any indeterminate PNs between 5 and 8 mm in diameter.^(10,11)

The prevalence of IFs of malignancy in all patients undergoing CCTA is small (estimated at 0.7%), and most of them (72%) will be lung cancer (primary or secondary).^(4,5) Even in patients with known cancer elsewhere, incidental small PNs are often benign

and should not preclude treatment for the primary malignancy until proven to be metastases. Likewise, second primary lung cancer may have a better prognosis than may metastatic lung cancer and still be a candidate for treatment. The report should include any incidental and previously undocumented lung lesions larger than 5 mm and a proposed follow-up schedule. Lesions larger than 8 mm in diameter, growing or presenting suspicious features (Figure 1), should trigger an alert and referral for a lung cancer team so that they can be reviewed by a pulmonologist, an oncologist and a thoracic surgeon.⁽¹¹⁾

Pulmonary emboli (Figure 2) are rare, identified in just 0.2% of CCTA scans, but should be reported and trigger an urgent referral, as the patient will benefit from a timely start of therapy.⁽¹⁴⁾

Pulmonary consolidation should trigger a referral to the respiratory team and a post-treatment imaging reassessment, as the differential diagnosis is vast and includes infection, alveolar haemorrhage, organising pneumonia and malignancy, among others.⁽¹⁵⁾

Interstitial lung abnormalities (ILAs) are imaging findings potentially compatible with interstitial lung disease (ILD) in patients with no prior history of ILD.⁽¹⁶⁾ These findings are unexpected and incidental, common in the older (above 60 years of age) smoking population (4-9%). ILAs are often asymptomatic but may be related to mild ILD with potential functional impairment, risk of progressing disease and increased mortality risk.⁽¹⁷⁾ Some imaging patterns, such as subpleural reticulations, basal predominance and honeycombing, are more strongly associated with progression.⁽¹⁶⁾ Others, such as centrilobular nodules, are less likely to progress. Likewise, imaging patterns of pulmonary fibrosis are related to increased all-cause

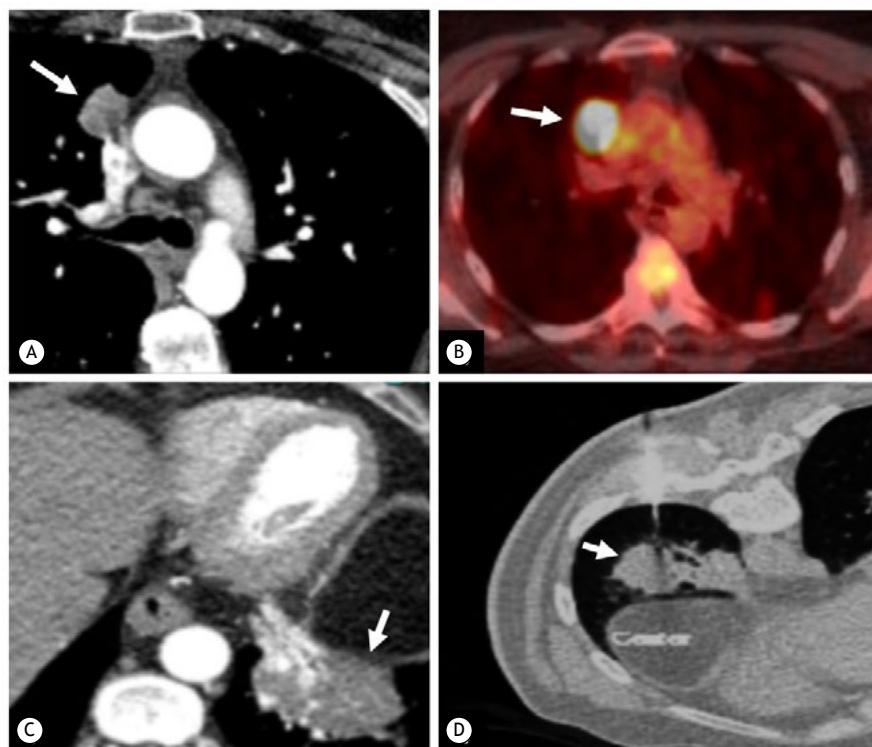


Figure 1. In A, an axial CT scan with a mediastinal window setting shows an incidental 20-mm nodule (arrow) in the right upper lobe. As per the British Thoracic Society guidelines,^(8,9) this finding requires further evaluation and therefore was highlighted in the report. In B, a PET-CT scan of the same patient showed a standardised uptake value (SUV) of 12. This lesion was confirmed as a metastasis from a previously unknown melanoma on histology. In C, an axial CT scan with a mediastinal window setting shows an incidental left basal consolidation (arrow) and atelectasis in another patient. This area demonstrated an increased uptake (SUV = 3.4) on PET-CT (in D) and was proven to be an adenocarcinoma on histology. The staging after the multidisciplinary team meeting was T3N1M0.

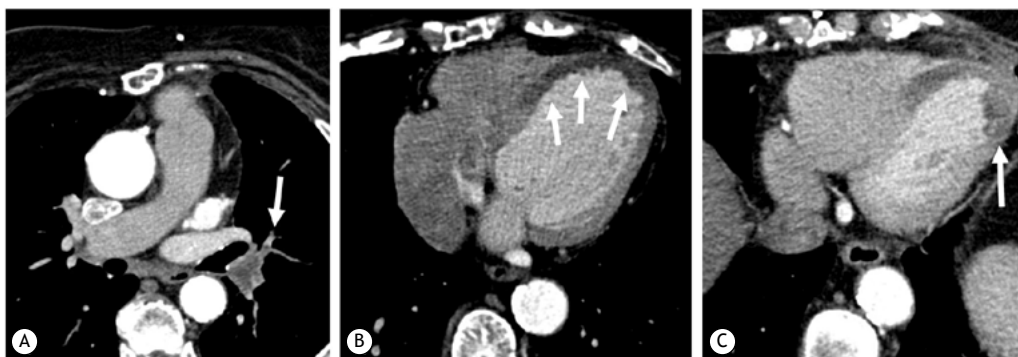


Figure 2. CT scans of a patient with acute chest pain and cardiac arrest. In A, an axial scan with a mediastinal window setting shows bilateral pulmonary emboli with the biggest thrombus occluding the left lower lobar artery (arrow). In B, a scan shows that the patient had an infarct of the left anterior descending coronary artery's territory with perfusion defects of the mid-cavity and apical walls (arrows). In C, a left ventricular thrombus in the apex (arrow) is also noted.

mortality. There are no clear guidelines for reporting or managing ILAs. Still, the Fleischner Society proposes that patients with respiratory symptoms, physiological abnormalities, gas transfer abnormalities and extensive CT changes should be referred for pulmonary evaluation and to a respective multidisciplinary team if available (Figure 3).⁽¹⁶⁾ Follow-up of ILAs may still be appropriate after the exclusion of ILD but in the presence of risk factors for progression, even if the optimal interval for follow-up CT scanning is unknown.^(16,18)

Other findings in the lung parenchyma include bronchial wall thickening in patients with COPD, emphysema, bronchiectasis and atelectasis (Figure 4).⁽⁴⁾

Intrapulmonary lymph nodes (IPLNs) are common on chest CT (prevalence of up to 66%) but under-represented on IF studies and do not require follow-up. The morphological criteria for IPLNs (Figure 5) are solid, homogeneous and noncalcified nodules with less than 12 mm in diameter. IPLNs may have an oval, lentiform,

or triangular shape, have regular and smooth margins, and be located primarily in the middle or lower lobes within 15 mm of the pleura.⁽¹⁹⁾ Half of the cases show a connection between IPLNs and the pleura. In addition, IPLNs may present single or multiple attachments with veins but not with arteries, which can be useful in differentiating adenocarcinomas from IPLNs.⁽¹⁹⁾

Pleural space

Pleural effusion should be reported and related to heart failure in cardiac patients. Pleural plaques (Figure 6) are also common and under-reported IFs, linked to asbestos exposure and increased risk of

mesothelioma.⁽⁵⁾ The report should differentiate them from pleural metastases in patients with lung cancer. In addition, the presence of pleural plaques is also a marker for increased mortality in a history of asbestos exposure, and the report should document them for surveillance and legal compensation.^(4,5,20)

Pneumothorax is rarely seen or reported on CCTA scans, likely because of the reduced FOV of CCTA scans and the outpatient setting. However, its clinical presentation can range from asymptomatic to life-threatening, and, when present, it should be reported and the patient should urgently be referred to the respiratory team or emergency room.

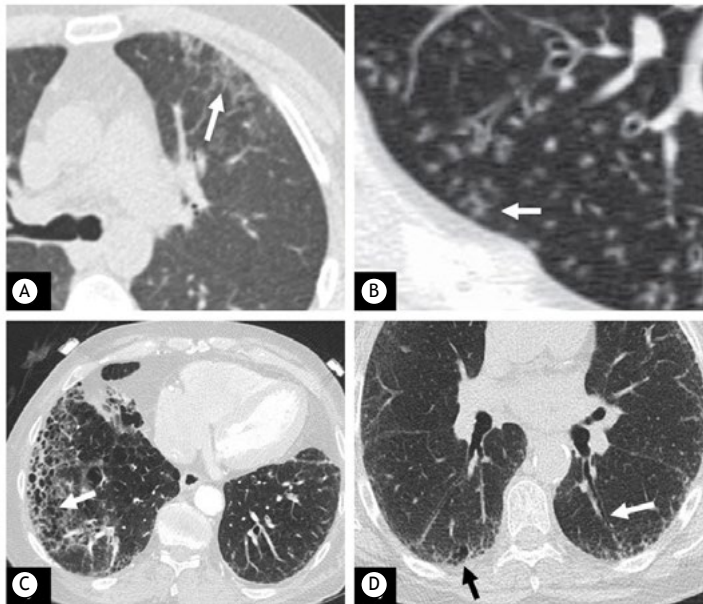


Figure 3. CT scans of a patient with atypical chest pain. Subpleural ground-glass opacities in the left upper lobe (arrow in A) and focal areas with tree-in-bud pattern (arrow in B) in the right lower lobe are seen. The patient was diagnosed with a lower tract respiratory infection. In another patient with a history of previous severe right lower lobe pneumonia, opening the field of view (FOV) allowed the visualisation of interstitial lung changes in the right lower lobe with asymmetric subpleural honeycombing and ground-glass patterns and bronchiectasis (arrow in C), residual to the previous infection. Likewise, using a large FOV in another patient, the scan shows the incidental finding of ILD (in D), characterised by subpleural reticulation with honeycombing (black arrow) and traction bronchiectasis (white arrow) affecting the lower lobes. These were further investigated with HRCT, and the diagnosis of the multidisciplinary team was probable usual interstitial pneumonia.

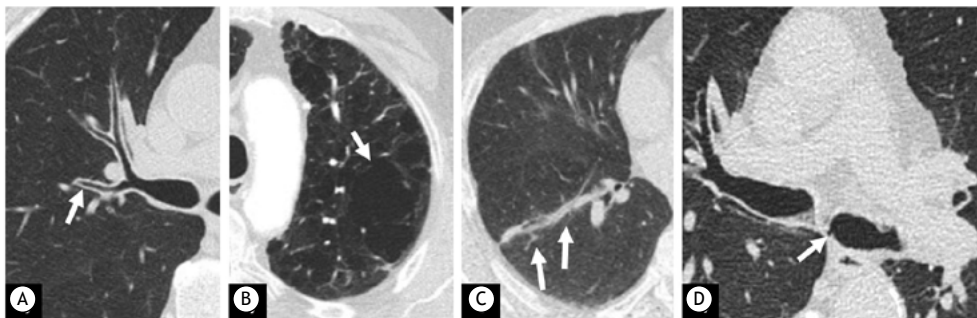


Figure 4. CT scans of a current smoker diagnosed with COPD, using the calcium score acquisition with a large field of view show bronchial thickening noted mainly in the lobar (arrow) and central segmental bronchi (in A) and centrilobular and paraseptal emphysema, forming a left upper lobe emphysematous bulla (arrow in B). Likewise, in another patient with COPD, an axial image shows linear atelectasis in the left lower lobe and mucous plugging (arrows in C). In D, a bronchial diverticulum is seen at the origin of the left main bronchus (arrow).

Mediastinum

Mediastinal lesions have a comprehensive list of differential diagnoses, including benign pathology (e.g., pericardial, bronchogenic or oesophageal duplication cysts; diving goitre) and malignancy (e.g., thymoma, thyroid malignancy, germ cell tumours, neurogenic tumours, oesophageal cancer and lymphoma; Figures 7 and 8).^(4,5,21)

Most lesions in the anterior mediastinum will have attenuation compatible with a soft tissue lesion, with larger lesions more likely representing early-stage thymic epithelial tumours and smaller lesions likely expressing benign cysts.⁽²²⁾ On follow-up evaluation, most lesions are stable or slowly growing, and the absence of growth cannot distinguish between benignity and malignancy. While long-term follow-up may be appropriate, a purely cystic lesion is most commonly a benign thymic cyst and does not need follow-up. Thoracic MRI scanning is far superior to CT in distinguishing simple or complex

cystic lesions from solid lesions, identifying fatty, cystic or necrotic components within solid lesions, as well as septations or soft tissue components within cystic lesions. In addition, MRI may be appropriate to alleviate patient anxiety.⁽²²⁾

Mediastinal teratoma is the most common mediastinal germ cell tumour. Mature teratomas usually present multiple densities, including fat, cystic spaces, homogeneous soft tissue and calcification. Conversely, immature teratomas usually present as solid heterogeneous lesions. Mature and most immature teratomas are benign but some immature teratomas may have a malignant germ cell tumour component and even mature teratomas may undergo malignant transformation of non-germ cell components (usually squamous component).

Both inflammatory and malignant diseases may cause mediastinal lymphadenopathy. Examples of the former include tuberculosis, fungal infection, sarcoidosis,

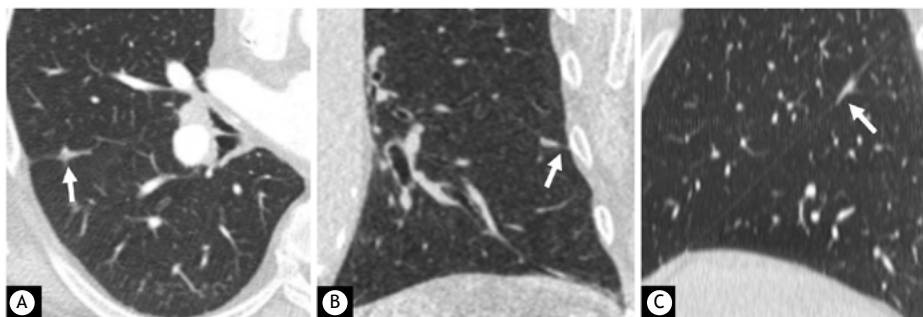


Figure 5. In A, an axial CT scan using the full field of view shows an oval-shaped, lentiform nodule in contact with the fissure (arrow). Coronal (in B) and sagittal (in C) CT scans show that the nodule adopts a more triangular shape and a linear contact with the fissure and adjacent pleura (arrows). These findings meet the criteria for benign intrapulmonary lymph nodes, and no follow-up is required.

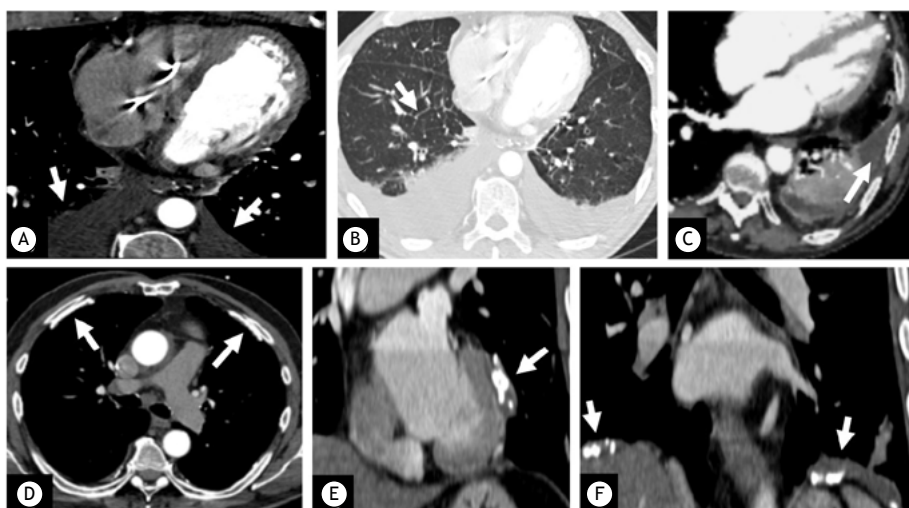


Figure 6. In A, bilateral pleural effusion (arrows) can be seen in the cardiac field of view (FOV) on a CT scan. In a reconstructed, wider FOV with a lung window setting (in B), the effusions are confirmed, and signs of pulmonary oedema with interlobular thickening (arrow) are also seen. In another patient, incidental left pleural effusion can be noted in C. The pleural layers were enhanced and showed areas of focal nodular thickening (arrows in D). Mesothelioma was diagnosed in this patient after further evaluation. CT scans of a patient with known exposure to asbestos reveal bilateral calcified pleural plaques (arrows), including the mediastinal (arrows in E) and diaphragmatic layers (arrows in F).

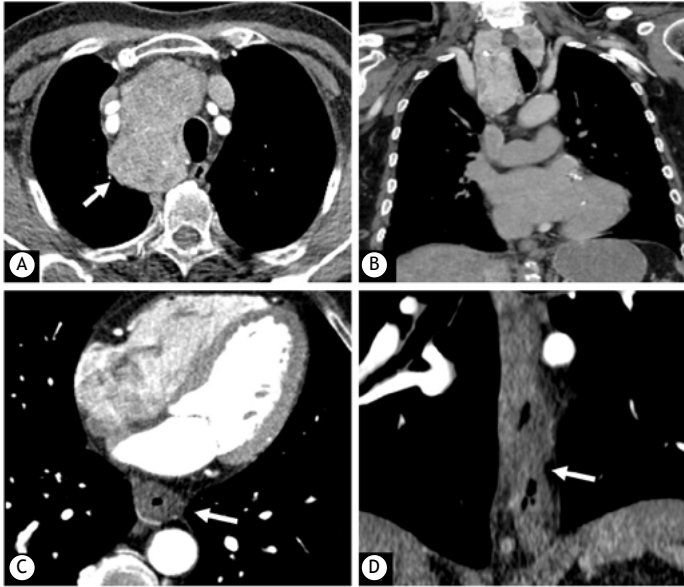


Figure 7. Coronary CT angiography performed for graft assessment (full chest coverage with wide field of view) shows an incidental finding of an anterior and heterogeneous mid-mediastinal soft-tissue mass (arrow in A), corresponding to diving goitre with a deviation of the trachea also depicted in a coronal view (in B). This patient was referred to the neck team for medical and surgical evaluation. Life-threatening severe complications, such as airway obstruction and neurovascular compression, can arise suddenly in these cases, usually secondary to intrathyroidal bleeding from trauma or infection. In another patient, axial (in C) and coronal (in D) scans show circumferential irregular thickening of the thoracic oesophagus (arrow) with adjacent enlarged lymph nodes. The patient was immediately referred to the upper gastrointestinal team, and upper endoscopy was performed. An adenocarcinoma was confirmed on histology.

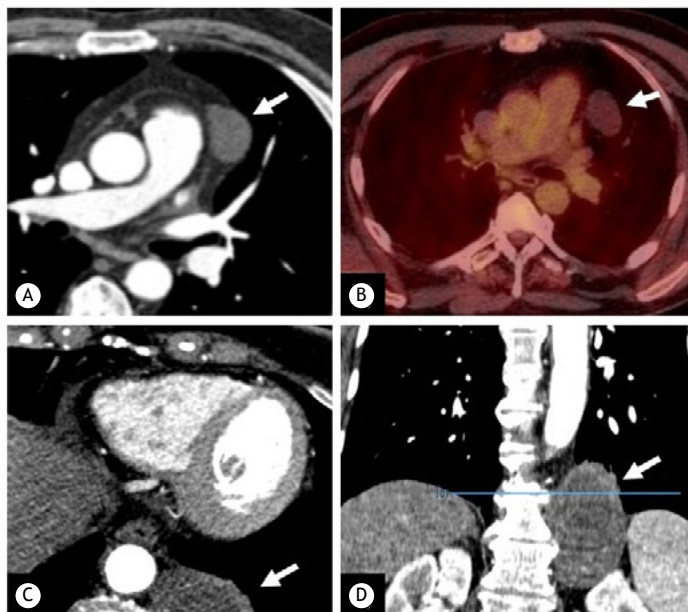


Figure 8. In A, an axial CT scan with a mediastinal window setting shows the incidental finding of a rounded lesion with fluid density (arrow). In B, a PET-CT scan shows that the lesion has no uptake (arrow) and is likely to represent a benign pericardial cyst. Surgical resection or percutaneous drainage is reserved for symptomatic individuals when complications are observed or when the diagnosis is uncertain. In another patient, an axial CT scan shows a heterogeneous left retrocrural mass (arrow in C) seen in the cardiac field of view. In D, a coronal CT scan confirms the left paraspinous location (arrow) of the lesion that was later confirmed as a neurogenic tumour. This finding requires an alert on the report as the patient will benefit from further evaluation and treatment.

silicosis, drug reactions, amyloidosis, Castleman's disease, ILD and COPD. Examples of the latter include lung cancer, lymphoproliferative disease and metastases

(Figure 9). The criteria for lymphadenopathy include a short-axis diameter larger than 10 mm, changes to its usual ovoid shape or usual attenuation, coalescence

with adjacent enlarged lymph nodes or an invasive behaviour into the surrounding mediastinal fat.⁽¹⁹⁾ Mediastinal lymph node enlargement is the third most common IF reported in the literature (1.7%) after lung nodules and parenchymal abnormalities.^(4,19,23)

In the absence of suspicious features, lymph nodes smaller than 15 mm in the short-axis are overwhelmingly reactive lymph nodes and, if few, do not need follow-up.⁽²¹⁾ The shape and number of lymph nodes, the presence of a fatty hilum, enhancement or calcifications, as well as previous history of diseases potentially explaining the enlarged lymph nodes are also important when considering follow-up or further characterisation with PET-CT or biopsy.⁽²¹⁾

Abnormalities of the aorta (Figure 10) and pulmonary arteries should be considered an integral part of the cardiac or coronary assessment in the context of the cardiovascular disease being evaluated, such as in cases of congenital abnormalities or pre-transcatheter aortic valve replacement.

Oesophageal hiatus hernia is very common and may cause chest pain (heartburn) as a confounding symptom behind the CCTA request. These patients will benefit from gastrointestinal evaluation and treatment.⁽⁴⁾

Similarly to pneumothorax, pneumomediastinum is infrequent and under-represented in systematic reviews of IFs on CCTA. However, these should be reported and trigger an urgent referral to the respiratory team or emergency department.

Chest wall

Degenerative bony changes are widespread in older patients and could cause atypical chest pain.⁽⁵⁾ Metastatic disease, multiple myeloma, lymphoma, and

leukaemia account for more than 99% of malignant bone lesions in the chest wall. Therefore, the report should distinguish them from common benign bony lesions (e.g., bone islands and haemangiomas) that do not require further assessment.⁽²⁴⁾

The skin, muscles and subcutaneous fat tissue are sometimes the site of metastases and should be reviewed.⁽⁵⁾ Despite the low predictive value for breast lesions on CCTA, it may be the first study to demonstrate a previously undiagnosed lesion. Incidental breast lesions first detected on CCTA prove to be cancer in 24-70% of the cases; therefore, any breast lesion not previously demonstrated to be benign (Figure 11) should be reported and trigger an alert for an appointment and further evaluation with a specialist.⁽²⁵⁾

Abdominal cavity

A CCTA study usually includes some slices through the upper abdomen. The most common abdominal IFs are simple hepatic cysts, reported in 5% of CCTA scans as lesions with uniform fluid attenuation, no visible wall and no contrast enhancement.⁽⁵⁾ These are benign and require no further imaging. However, the complete characterisation of focal liver lesions is often impossible to be obtained from a CCTA scan and may require a targeted protocol (e.g., triple-phase CT scan or liver MRI).⁽²⁶⁾ Hence, the report should include any new focal liver lesion apart from simple cysts, and further characterisation should be suggested. Likewise, biliary obstruction, pneumobilia and focal or diffuse thickening of the gallbladder wall should be alerted if previously undiagnosed. Renal cysts are also common and frequently benign IFs that do not require follow-up in the absence of suspicious features (e.g., septations, internal density, enhancement, calcification, and solid

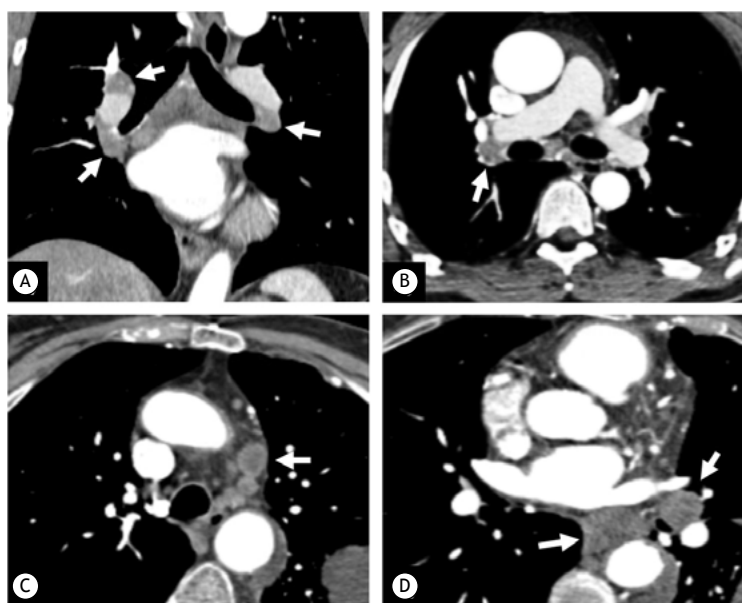


Figure 9. Coronal (in A) and axial (in B) CT scans show bilateral enlarged hilar lymph nodes (arrows), the biggest of them in the right hilum measuring 15 mm in the short axis. EBUS confirmed sarcoidosis. CT scans of another patient (in C and D) present several mediastinal and left hilar lymph nodes with a hypodense centre. The report alerted these findings, and EBUS later confirmed metastatic small cell carcinoma.

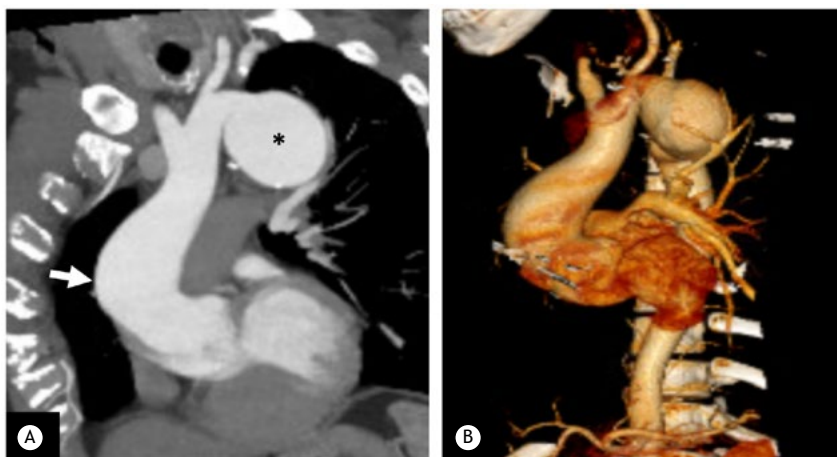


Figure 10. In A, coronal maximum-intensity projection reconstruction of the thoracic aorta of a young patient admitted with chest pain shows an incidental finding of an ascending aorta aneurysm (arrow) with distal aortic arch coarctation and a proximal descending saccular thoracic aorta aneurysm (asterisk). The congenital anatomical change and aneurysm are depicted in the 3D reconstruction (in B). The clinical information provided referred to a bicuspid aortic valve, which justified tailoring the imaging protocol to include the aortic arch.

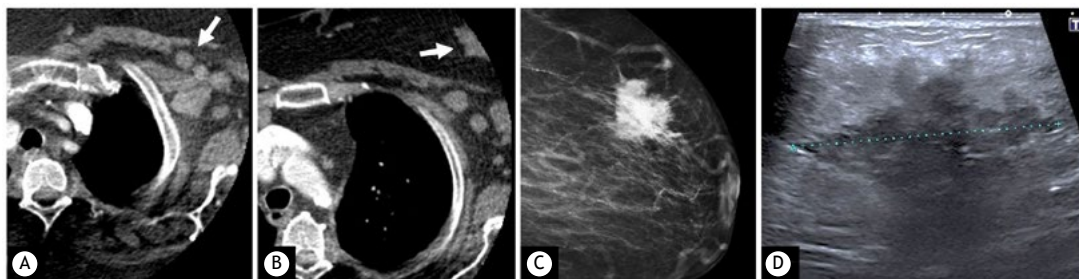


Figure 11. Axial CT images show an incidental finding of multiple left axillary adenopathy (arrow in A) and a left breast mass, partially included in the cardiac field of view (arrow in B). In C, a mammogram showed a suspicious spiculated lesion with a significant amount of microcalcifications. In D, the lesion was confirmed malignant on ultrasound-guided biopsy.

components). However, any solid renal nodule or mass should be reported and further characterised.^(5,27)

Coverage of the adrenal glands, pancreas, spleen, and stomach are limited to the FOV and the patient's anatomy. However, any previously undiagnosed solid or cystic mass in these organs, splenomegaly, peritoneal disease (e.g., nodules, haziness and omental cake) and ascites should also be reported and further evaluated.^(28,29)

FINAL CONSIDERATIONS

Clinically significant IFs are common in the evaluation of IHD using CCTA. Although their detection has the potential for additional costs and patient harm, it

also presents opportunities for intervening to benefit patients. Therefore, radiologists and cardiologists reporting CCTA findings should be familiar with IFs.

AUTHOR CONTRIBUTIONS

EP and DP: study conception and design, data collection, drafting and review of the manuscript. CM, EM, BH, KI and LTB: review of the manuscript. All authors read and approved the final version of the manuscript.

CONFLICT OF INTEREST

None declared.

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