



GE HealthCare

Case Study

Addressing misregistration artifact with Flyrcado



Flyrcado™ (flurpiridaz F 18) injection

Addressing misregistration artifact with Flyrcado



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Patient Medical History

Gender	Female
Age	54 years
BMI	24.3
Risk factors	Type 2 diabetes, hypertension
History	Gastric bypass

Medical history of the patient

The patient presented with atypical chest pain, palpitations and dyspnea on exertion, warranting further cardiac evaluation.

Pre-diagnostics

No prior cardiac imaging has been performed. Exercise ECG was inconclusive due to the patient's inability to reach the target heart rate.

Indication

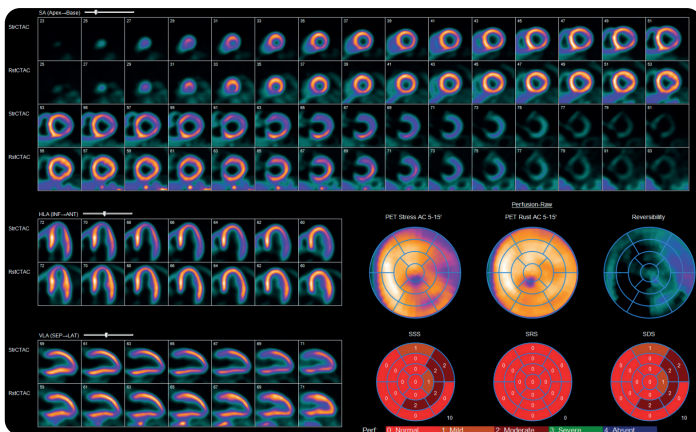
Flyrcado PET is indicated in this case to evaluate myocardial perfusion and detect ischemia.

Images and content presented here are courtesy of Dr. Arthur Braat and Dr. Marjolein Hol

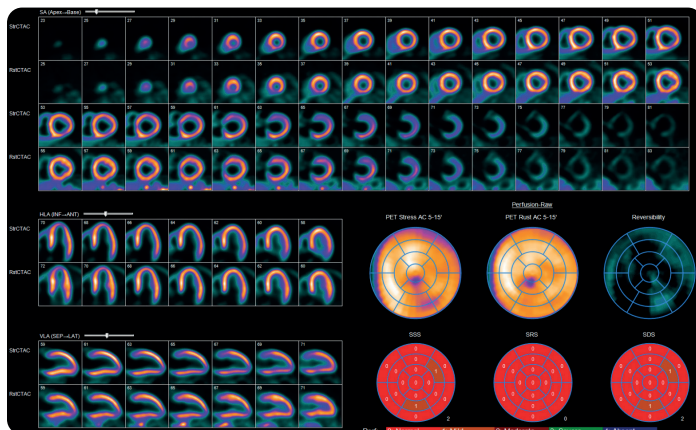
Imaging

PET MPI

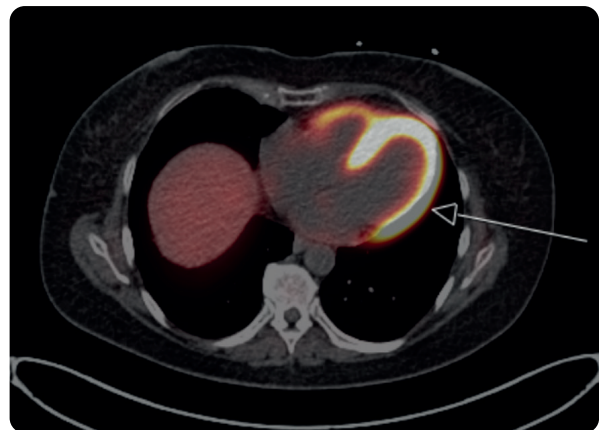
Rest-stress pharmacologic protocol with CT attenuation



Hypoactivity is observed in the lateral wall during stress imaging, with a homogeneous distribution of radiotracer at rest.



After correction, a homogeneous radiotracer distribution is observed during stress imaging.



Fusion images demonstrate inadequate alignment between PET and CT, resulting in misregistration artifacts.



Incidental finding: A hypodense collection adjacent to the right atrium with a Hounsfield unit value around 0, suggestive of pericardial cyst.

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Imaging findings

Artificial hypoactivity in the lateral wall, based on misregistration artifact. No reversible or irreversible perfusion defects are present.

Diagnosis

There is no evidence of ischemia or infarction. Chest pain is reproducible by palpation, supporting a working diagnosis of a costomyogenic origin.

Therapy/Follow up

The patient was reassured regarding the chest pain symptoms. A one-time follow-up for the pericardial cyst was scheduled in three years.

This case represents an example of a misregistration artifact, as seen in the artificial hypoactivity of the lateral wall due to inadequate PET-CT alignment, emphasizing the importance of always checking for proper PET and CT alignment. Additionally, this is an example of an incidental finding, in this case, a pericardial cyst observed on low-dose CT.

Key takeaways:

- Recognizing and managing imaging artifacts
 - Misregistration artifacts can mimic pathology, leading to potential diagnostic errors. Prompt artifact recognition and correction ensures an accurate assessment of myocardial perfusion.
- Identifying Incidental Findings on CT
 - Low-dose CT in PET can reveal incidental findings, highlighting the importance of reviewing CT images for complete patient evaluation.

IMPORTANT SAFETY INFORMATION

Indications and Usage

FLYRCADO is a radioactive diagnostic drug indicated for positron emission tomography (PET) myocardial perfusion imaging (MPI) under rest or stress (pharmacologic or exercise) in adult patients with known or suspected coronary artery disease (CAD) to evaluate for myocardial ischemia and infarction.

Contraindications

None

Warnings and Precautions

- Risk associated with exercise or pharmacologic stress: Patients evaluated with exercise or pharmacologic stress may experience serious adverse reactions such as myocardial infarction, arrhythmia, hypotension, bronchoconstriction, stroke, and seizure. Perform stress testing in the setting where cardiac resuscitation equipment and trained staff are readily available. When pharmacologic stress is selected as an alternative to exercise, perform the procedure in accordance with the pharmacologic stress agent's prescribing information.
- Radiation risks: FLYRCADO contributes to a patient's overall long-term cumulative radiation exposure. Long-term cumulative radiation exposure is associated with an increased risk of cancer. Ensure safe handling to minimize radiation exposure to patients and health care providers. Advise patients to hydrate before and after administration and to void.

Adverse Reactions

- Most common adverse reactions occurring during FLYRCADO PET MPI under rest and stress (pharmacologic or exercise) (incidence \geq 2%) are dyspnea, headache, angina pectoris, chest pain, fatigue, ST segment changes, flushing, nausea, abdominal pain, dizziness, and arrhythmia.

Use in Specific Populations

Pregnancy: There are no data on use of flurpiridaz F 18 in pregnant women to evaluate for a drug-associated risk of major birth defects, miscarriage, or other adverse maternal or fetal outcomes. If considering FLYRCADO administration to a pregnant woman, inform the patient about the potential for adverse pregnancy outcomes based on the radiation dose from flurpiridaz F 18 and the gestational timing of exposure. FLYRCADO contains ethanol (a maximum daily dose of 337 mg anhydrous ethanol). If considering FLYRCADO administration to a pregnant woman, inform the patient about the potential for adverse pregnancy outcomes associated with ethanol exposure during pregnancy.

Lactation: Temporarily discontinue breastfeeding. A lactating woman should pump and discard breastmilk for at least 8 hours after FLYRCADO administration.

Pediatric Use: Safety and effectiveness of FLYRCADO in pediatric patients have not been established.

To report SUSPECTED ADVERSE REACTIONS, contact GE HealthCare at 800-654-0118 (option 2 then option 1) or by email at GPV.drugsafety@gehealthcare.com or FDA at 800-FDA-1088 or www.fda.gov/medwatch.

Flyrcado Reimbursement Support Line: 800 729 0701

Medical Affairs: 800 654 0118
(option 2, then option 3) or
medical.affairs@gehealthcare.com

Customer Service: 800 292 8514
gehealthcare.com

