Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

an appendage velocity of 30cm/sec. A CTCA demonstrated normal coronary artery anatomy with nil evidence of coronary artery disease and a large left atrial appendage aneurysm with nil evidence of LA appendage thrombus. He underwent video assisted thoracoscopic surgery, which was converted to a mini-thoracotomy with femoral-femoral bypass to decompress and clip the appendage aneurysm due to appendage size and inability to access the neck thoracoscopically. Successful appendage clipping was performed with an AtriCure AtriClip device. He was discharged from hospital with no post-operative complications.

Conclusion: This case highlights the use of multimodality imaging in the correct diagnosis and subsequent surgical management of a large left atrial appendage aneurysm.

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Myocardial Fibrosis Occurs in Non-Hospitalised Patients With Chronic Symptoms After COVID-19

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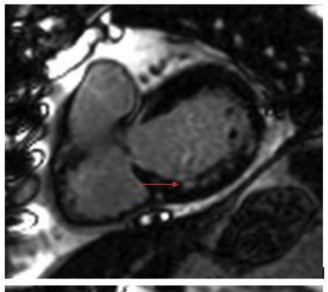
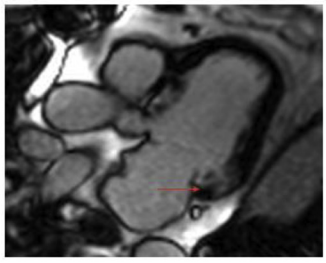
Background: Cardiac fibrosis has been observed in patients reporting symptoms at up to 3 months after COVID-19 infection, often after hospitalisation for moderate or severe initial infection. The aim of this study was to evaluate the prevalence and extent of myocardial injury in a group of completely non-hospitalised patients for initial infection, with ongoing symptoms at longer-term follow-up, and establish if there may be a relationship between myocardial injury, pulmonary fibrosis and symptoms.

Methods: Comprehensive cardiovascular magnetic resonance (CMR) imaging was performed in twenty prospectively enrolled patients with post-acute symptoms of





	Group (n = 20)
Patient Characteristics	
Age, y	55 (40-61)
Male	8 (40)
BMI, kg/m^2	26 (24-28)
Hypertension	3 (15)
Diabetes	4 (20)
Dyslipidemia	8 (40)
Smoking	6 (30)
COPD/Asthma	2 (10)
Pathology	
hsTrI, ng/mL	3 (2-4)
CRP, mg/mL	1 (0.5-2)
Cardiac MRI Findings	
Days post infection	328 (288-348)
LVEF, %	64 (61-68)
LVEDV, mL/m^2	133 (117-168)
RVEF, %	58 (56-69)
Native T1, ms	1192 (1168-1204)
Abnormal native T1	2 (10)
Native T2, ms	39 (37-41)
Abnormal native T2	1 (5)
LGE	
No. %	6 (30)
Mass (g)	6.0 (5.2-14.3)
LGE: normal myocardium, %	17 (12-25)
Lung Function Results	
DLCO, % predicted	86 (80-95)
Abnormal	1 (5)
TLC, % predicted	97 (92-103)
Abnormal	1 (5)
Capillary PO_2, mmHg	81 (75-92)
Pulmonary Fibrosis on CT, %	2 (10)

COVID-19 at follow up at a median (IQR) of 328 (288-348) days after initial infection. Complete lung function testing, non-contrast computed tomography of the chest and inflammatory cytokines were measured at follow-up.

Results: Whilst evidence of ongoing myocardial oedema was found in just one patient (5%) based on T2 weighted imaging, six patients (30%) had late gadolinium enhancement (LGE) on CMR, with a greater proportion of these patients having reduced diffusion capacity for carbon monoxide (p=0.04). Neither lung capacity, presence of pulmonary fibrosis nor symptoms were associated with presence of cardiac fibrosis.

Conclusion: These findings suggests that even amongst patients with mild COVID-19 infection, there is a proportion of patients with a burden of myocardial injury that could increase the risk for future cardiovascular morbidity and mortality and is independent of degree of pulmonary fibrosis.

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Myocardial Perfusion Imaging Failed to Improve Patient Risk Classification Compared to the Revised Cardiac Risk Index for Early Cardiac Complications After Major Non-Cardiac Surgery

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Background and Objective: Cardiac evaluation is desirable before major non-cardiac surgery with myocardial perfusion imaging (MPI) frequently utilised for risk assessment. However, the prognostic utility of MPI above a simple clinical risk calculator, the Revised Cardiac Risk Index (RCRI), is unknown.

Methods and Results: We conducted a retrospective cohort study of patients who underwent MPI before major non-cardiac surgery, incorporating 635 surgical procedures in 629 patients over six years. Major adverse cardiac events (MACE) within 30 days of surgery, including any myocardial infarction, acute pulmonary oedema, ventricular arrhythmia, or cardiac death, occurred in 47 (7.4%) cases. We analysed predictive value of MPI for MACE using multivariable logistic regression and categorical net reclassification index. MPI-identified medium or large-sized reversible perfusion defects (p=0.02, odds ratio 2.9 [95% CI 1.1-7.1]) and RCRI score two or more (p=0.03, odds ratio 2.3 [(95% CI 1.1-4.8]) were significantly associated with MACE after adjusting for age, coronary revascularisation, surgical acuity, need for general anaesthesia, left ventricular ejection fraction (LVEF) and fixed perfusion defects. Net reclassification index comparing models with and without MPI risk factors (LVEF, reversible perfusion and fixed perfusion defects) did not significantly improve risk classification.

Conclusion: MPI risk factors are weak predictors for early cardiac complications after major non-cardiac surgery and failed to improve patient risk classification beyond a simple risk assessment using age, RCRI and surgical priority. Clinicians should consider alternative risk assessment strategies because of MPI's poor prognostic utility and its associated time and financial costs.

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Myocarditis Following mRNA COVID-19 Vaccination: A CMR Study

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Introduction: Myopericarditis is a rare side effect following messenger ribonucleic acid (mRNA) COVID-19 vaccination. Cardiac magnetic resonance (CMR) imaging can detect myopericarditis with high sensitivity and resolution of CMR abnormalities mirrors clinical improvement.

Methods: Patients presenting with Pfizer vaccine induced myocarditis were assessed with CMR at index presentation and post-discharge.

Results: Twenty-one patients, mean age 25.7+/-8.0yrs (95.2% male), were admitted to our health service between September 2021 and March 2022 with myocarditis following Pfizer COVID-19 vaccination, 90.5% after the second and 9.5% after the third (booster) dose. Chest pain (100%), fever (61.9%), myalgia (47.6%) and dyspnoea (33.3%) developed at a median of 2 days post-vaccination. Mean troponin was 864ng/mL (72-4532 ng/mL), CRP 47mg/L (2.7-160mg/L) and BNP 531ng/mL (52-1686 ng/mL). Electrocardiographic changes of widespread ST segment elevation were present in 66.7% and PR depression in 14.2% of cases. CMR was performed in 90.5% of patients. Myocardial oedema was demonstrated in all patients, and late gadolinium enhancement (LGE) in 94.7% of patients, predominantly subepicardial involving the inferolateral segments. Left ventricular ejection fraction (LVEF) was reduced in 26.3% of patients (mean LVEF 52.1+/-4.7% and RVEF 50.1+/-4.5%). Extensive myocardial LGE was present in one patient who developed cardiogenic shock requiring extracorporeal supportive therapy before making a full recovery. All other patients had a mild clinical course. To date, follow up CMR scans performed in 38.1% of patients have all demonstrated significant reduction in LGE compared to baseline.

Conclusion: Myocarditis following mRNA COVID-19 vaccination is associated with CMR changes which resolve over time.

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