Left ventricular rupture and formation of a pseudoaneurysm is a well-recognized complication after mitral valve replacement. With an incidence of ~1.2%, it is extremely rare and potentially fatal.1 We describe such a case in the setting of infective endocarditis.

A 47-year-old man came into casualty reporting fever, chest pain, and shortness of breath. His history included 25 years as an intravenous drug user, injecting heroin and methadone, and being positive for hepatitis C. He had recently experienced an abscess in the groin after the use of methadone, and being positive for hepatitis C. He had years as an intravenous drug user, injecting heroin and methadone, and being positive for hepatitis C. He had recently experienced an abscess in the groin after the use of methadone, and being positive for hepatitis C.

His initial transthoracic echocardiogram revealed a grossly disrupted mitral valve with severe mitral regurgitation and hyperdynamic left ventricular function. The left ventricular wall was diffusely thickened just below the posterior mitral annulus, with focal translucent areas highly suggestive of an abscess cavity (Figure 1). Given these findings, he was referred immediately to cardiothoracic surgeons with a diagnosis of Staphylococcus aureus endocarditis secondary to intravenous drug use. The valve was shown to have extensive destruction, with a large vegetation on the posterior leaflet. Both mitral leaflets were completely excised, with further removal of infected and necrotic tissue around the annulus. The valve was replaced with a 31-mm perimount pericardial valve. The tissue around the annulus was of very poor quality, and infected with multiple abscess cavities. In view of this, it was decided to perform his repair in 2 stages: first, to remove the infected tissue and replace the valve, and second, to seal the aneurysm. The patient subsequently made a good recovery, and although his inflammatory markers returned to normal, he remained pyrexial. In the following days, he continued to have a low-grade fever, and further echocardiography determined that he had a persistent pericardial effusion that failed to resolve. Three and a half weeks later, he was found to be short of breath on exertion, with persistent tachycardia. Echocardiography revealed a large posterolateral pseudoaneurysm measuring ~8×6 cm, which exhibited free-flowing color into the aneurysm cavity (Figure 2). His mitral valve showed moderate regurgitation, with the persistent pericardial effusion showing signs of tamponade. It was therefore decided to perform the second stage of his surgery at this time. The pseudoaneurysm was well demarcated, fibrosed, and sealed with interrupted mattress sutures2 and the perimount valve was replaced with a 31-mm pericardial valve. The patient was then continued on intravenous antibiotics and improved considerably. He was finally discharged almost 2 months after being admitted. He attends regular outpatient appointments 20 months later and remains well.

The incidence of posterior pseudoaneurysm formation in the elective setting can be reduced by preservation of the posterior leaflet mechanism where the anatomy allows. In the setting of advanced, destructive sepsis, it is more complex and may be facilitated by buttressing the annulus with pericardium.3 Abscesses within the ventricular wall are a rare but well-recognized complication with mitral valve endocarditis,4 particularly with virulent organisms such as S aureus and Enterococcus. When this occurs, there is a significant postoperative risk of dehiscence of the sewing ring. Prolonged surveillance with echocardiography is necessary to pick up the potentially fatal complication illustrated in this case report.

Disclosures
None.

References
Figure 1. Transthoracic echocardiographic imaging. A, Parasternal long-axis view of the mitral valve. White arrows highlight the posterior leaflet, demonstrating the extensive damage caused by infection. B, Parasternal short-axis view at the level of the mitral valve. White arrows indicate the lucent regions within the myocardium thought to be (and later confirmed as) abscesses. The asterisk denotes pericardial fluid. C, Subcostal view demonstrating the integrity of the posterolateral wall before initial surgery. D, Apical long-axis views demonstrating the degree of mitral regurgitation present. E, Perioperative transoesophageal echocardiogram 4-chamber view demonstrating the degree of mitral regurgitation.

Figure 2. Postoperative transthoracic apical 4-chamber view showing the large posterolateral left ventricular pseudoaneurysm. A, Pseudoaneurysm is indicated by white arrows, with a linear echobright structure extending within. B, The neck of the pseudoaneurysm is shown at the posterolateral margins of the left ventricle, allowing free color flow from the ventricle into the cavity.