Periannular Abscess Cavities in Endocarditis
The Case for Prolonged Surveillance

Saleha Farooqui-Kabir, BSc, PhD; Christina Bannister, RN, BN, MSc; Fikrat Shabbo, FRCS; Gerald S. Carr-White, MRCP, PhD

Left ventricular rupture and formation of a pseudoaneurysm is a well-recognized complication after mitral valve replacement. With an incidence of \( \approx 1.2\% \), 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 this site for injection. On examination, he was found to be pyrexial (39.4°C) and tachycardic, with a blood pressure of 142/97 mm Hg. He had a harsh apical pansystolic murmur, nail fold infarcts, and splinter hemorrhages in his hands and feet. Blood tests showed a C-reactive protein count of 236 mg/L and a white cell count of 6.8 \( \times 10^9 \), with the differential 14.2% neutrophils, 6.3% lymphocytes, and 0.5% monocytes.

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 \textit{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 well demarcated, fibrosed, and sealed with interrupted mattress sutures\(^2\) 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 \textit{S. aureus} and \textit{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

From the Departments of Echocardiography (S.F.-K.), Cardiothoracic Surgery (C.B., F.S.), and Cardiology (G.S.C.-W.), Guy’s and St Thomas’ NHS Foundation Trust, London, United Kingdom.

The online-only Data Supplement is available at http://circimaging.ahajournals.org/cgi/content/full/2/1/e4/DC1.

Correspondence to Gerald S. Carr-White, MRCP, PhD, Cardiothoracic Department, 6th Floor East Wing, St Thomas’ Hospital, Lambeth Palace Road, London SE1 7EH, United Kingdom. E-mail gerry.carr-white@gstt.nhs.uk

(Circ Cardiovasc Imaging. 2009;2:e4–e5.)

© 2009 American Heart Association, Inc.

Circ Cardiovasc Imaging is available at http://circimaging.ahajournals.org

DOI: 10.1161/CIRCIMAGING.107.755900
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.
Periannular Abscess Cavities in Endocarditis: The Case for Prolonged Surveillance
Saleha Farooqui-Kabir, Christina Bannister, Fikrat Shabbo and Gerald S. Carr-White

Circ Cardiovasc Imaging. 2009;2:e4-e5
doi: 10.1161/CIRCIMAGING.107.755900
Circulation: Cardiovascular Imaging is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2009 American Heart Association, Inc. All rights reserved.
Print ISSN: 1941-9651. Online ISSN: 1942-0080

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circimaging.ahajournals.org/content/2/1/e4

Data Supplement (unedited) at:
http://circimaging.ahajournals.org/content/suppl/2009/02/12/2.1.e4.DC1

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation: Cardiovascular Imaging can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation: Cardiovascular Imaging is online at:
http://circimaging.ahajournals.org/subscriptions/