Visualization of Automatic Implantable Cardioverter-Defibrillator Patches Using Electron Beam Angiography

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Our patient was an 85-year-old man who had experienced an out-of-hospital cardiac arrest in September 1990 and subsequently underwent the implantation of an automatic implantable cardioverter-defibrillator as part of the Cardiac Arrest in Seattle: Conventional versus Amiodarone Drug Evaluation (CASCADE) trial, as well as bypass surgery in Seattle, Wash. The defibrillator was placed abdominally. The patient did quite well for 10 years. Then, he developed atypical chest pain and was referred for coronary angiography to evaluate the status of the bypass grafts. The patient was concerned because of previous complications from angiography, and so he underwent electron beam angiography with 3D reconstruction to assess his bypass graft patency. Electron beam angiography was performed using the Ultrafast Computed Tomography 150XLP (Imatron Inc). All 3 saphenous vein grafts were patent, and a second reconstruction was performed to visualize the patches and leads of the automatic implantable cardioverter-defibrillator (Figure).
The 3D images confirmed the patency of all 3 saphenous vein grafts (1 indicates obtuse marginal; 2, left anterior descending; and 3, distal right coronary), and we could also visualize the patches and leads of the automatic implantable cardioverter-defibrillator. There are 2 epicardial patches (P), one placed anteriorly over the right ventricle and one placed posteriorly over the left ventricle. Two epicardial rate-sensing leads (L) are also visualized.
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