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MAMMOGRAMS: DETECTING MORE THAN BREAST CANCER, MAY HELP ASSESS HEART RISK IN KIDNEY DISEASE PATIENTS

**Routine Mammograms Can Show Arterial Calcium Deposits—Which May
Contribute to Heart Disease Risk**

Washington, DC (January 14, 2011) — Routine mammograms performed for breast cancer screening could serve another purpose as well: detecting calcifications in the blood vessels of patients with advanced kidney disease, according to a study appearing in an upcoming issue of the *Clinical Journal of the American Society of Nephrology* (CJASN).

Mammograms show calcium deposits in the breast arteries in nearly two-thirds of women with end-stage renal disease (ESRD), according to the study by W. Charles O'Neill, MD (Emory University, Atlanta). "Breast arterial calcification is a specific and useful marker of medial vascular calcification in chronic kidney disease (CKD), and its prevalence is markedly increased in ESRD and advanced CKD," the researchers write.

Arterial calcium deposits may contribute to the high rate of death from heart disease in patients with CKD and ESRD. In addition to calcifications of the inner or "intimal" layer of the blood vessels (atherosclerosis), calcifications can also occur in the middle, or "medial" layer. These medial calcium deposits may contribute to cardiovascular disease risk by making the arteries stiffer, but they can be difficult to detect.

In an initial study, Dr. O'Neill and colleagues examined samples of breast artery tissue from 16 women with kidney disease. While all of the samples showed medial calcifications of the breast artery, none showed intimal calcifications.

When the researchers reviewed routine mammograms performed in 71 women with ESRD, they found breast arterial calcifications in 63 percent of patients. In contrast, in a matched group of women without kidney disease, mammograms showed breast arterial calcifications in just 17 percent of cases.

Thirty-six percent of the women with kidney disease already had breast arterial calcifications on mammograms performed several years earlier—before their kidney

disease advanced to ESRD. More than 90 percent of women with calcifications of the breast artery also had evidence of medical calcifications in other blood vessels.

Calcium deposits seen on mammograms could be "a marker of generalized medical vascular calcifications" in patients with kidney disease, the researchers write. The results support the theory that CKD predisposes to medial calcification, which may in turn, contribute to cardiovascular disease.

Since most women with CKD are at an age where yearly mammograms are recommended, mammograms may be a useful tool for studying the development and progression of medical calcifications. O'Neill and colleagues call for further studies of arterial calcium deposits in patients with kidney disease—including whether early identification and treatment might help to lower the associated risk of cardiovascular disease.

The study had some important limitations, including the relatively small number of patients studied.

The authors report no financial disclosures.

The article, entitled "Breast Arterial Calcification: A Marker of Medial Vascular Calcification in Chronic Kidney Disease," (doi 10.2215/CJN.07190810), will appear online at <http://cjasn.asnjournals.org/> on January 20, 2011.

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