

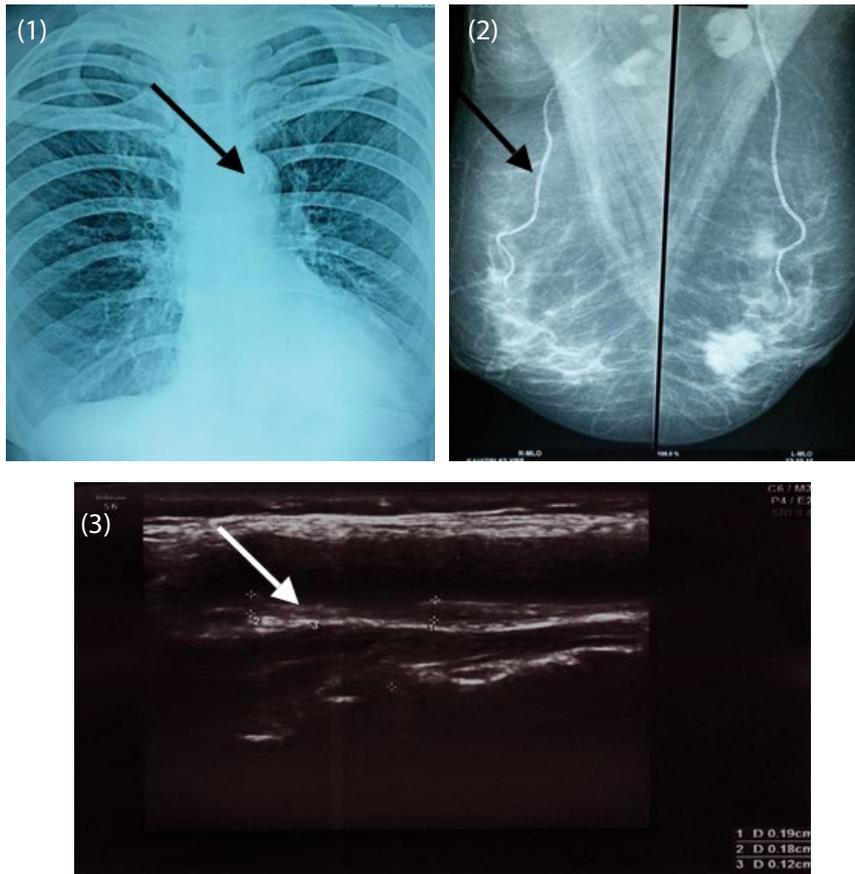
## Case Blog

### Title: Mammary Artery Calcification a Useful Marker for Coronary Artery Disease

Shridhar Dwivedi<sup>1</sup> and Abhinav Jain<sup>2\*</sup>

<sup>1</sup>Department of Medicine /Preventive Cardiology, Hamdard Institute of Medical Sciences and Research, Jamia Hamdard, New Delhi, India

<sup>2</sup>Department of Radiology, Hamdard Institute of Medical Sciences and Research, Jamia Hamdard, New Delhi, India



**Image 1:** Calcified plaques in aortic knuckle (arrow) on chest radiograph (PA view).

**Image 2:** Bilateral mammary artery calcification (arrow) on mediolateral oblique views for both breasts.

**Image 3:** Thickened carotid intima media thickness (CIMT) on high resolution ultrasonography assessment.

## Introduction

The prevalence of ischemic heart disease is steadily increasing, causing huge morbidity and mortality around the world [1]. The scenario is worse in Indian subcontinent [2]. Atherosclerosis is a generalized disease process [3]. Presence of atherosclerotic changes at one place is indicative of possible involvement of another region. Diabetes which is considered to be coronary equivalent is also rising in epidemic proportions, contributing to rise in coronary artery disease (CAD) [4]. It is therefore imperative to look carefully for all possible markers of atherosclerosis and prevent its life threatening complications.

## Case Presentation

A 62-year-old lady, known diabetic and chronic renal disease patient for last 15 years and hypothyroidism for 5 years presented with acute onset chest pain. ECG revealed ST-T inversions suggesting acute coronary syndrome. Chest radiograph was taken which was unremarkable except for aortic knuckle calcification (Image 1). She was managed on the lines of acute coronary syndrome. During her course of stay she also complained of breast discharge. On examination, a small firm lump was palpated in breast and red coloured discharge was observed. Mammogram was advised for the same, which revealed a spiculated

\*Corresponding author: Abhinav Jain, Department of Radiology, Hamdard Institute of Medical Sciences and Research, Jamia Hamdard, Hamdard Nagar, New Delhi, India; E-mail: [drabhinavjain@gmail.com](mailto:drabhinavjain@gmail.com)

Copyright: © 2016 Dwivedi S, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

mass and axillary lymph node. Incidentally calcification of bilateral mammary arteries was also noted (Image 2). Carotid intima media thickness (CIMT) measurement was also done (Image 3). Increased CIMT measuring approx. 18 mm was observed in mid common carotid artery. A calcified plaque was noted in left carotid bulb.

## Discussion

Association of increased coronary artery disease with increased CIMT is well established. Assessment of CIMT is a routine protocol at many Centres in CAD patients [5-7]. Few studies have been published which have suggested that association exists between intramammary arterial calcifications and coronary artery disease [8-10]. Screening mammography is a common procedure for early detection of breast cancer. As the evidence supporting mammary artery calcification as a possible marker for CAD grows, this would establish as an additional utilization of commonly used mammography screening for early detection of breast cancer. This case further supports the belief that presence of mammary artery calcification and CAD coexist. It is therefore essential that mammary artery calcifications and /or aortic calcification must always be reported in radiology reports and the clinicians must not ignore the presence of these calcifications and assess for possible coronary artery disease.

## References

1. Zachariah G, Harikrishnan S, Krishnan MN (2013) Prevalence of coronary artery disease and coronary risk factors in Kerala, South India: A population survey – Design and methods. *Ind Heart J* 65: 243-249.
2. Krishnan MN (2012) Coronary heart disease and risk factors in India – On the brink of an epidemic? *Ind Heart J* 64: 364-367.
3. Ross R (1999) Atherosclerosis - An inflammatory disease. *N Engl J Med* 340: 115-126.
4. King H, Aubert RE, Herman WH (1998) Global burden of diabetes, 1995-2025: prevalence, numerical estimates, and projections. *Diabetes Care* 21: 1414-1431.
5. Steinvil A, Sadeh B, Arbel Y, Justo D, Belei A, et al. (2011) Prevalence and predictors of concomitant carotid and coronary artery atherosclerotic disease. *J Am Coll Cardiol* 57: 779-783.
6. Tanimoto S, Ikari Y, Tanabe K, Yachi S, Nakajima H, et al. (2005) Prevalence of carotid artery stenosis in patients with coronary artery disease in Japanese population. *Stroke* 36: 2094-2098.
7. Wang Y, Zhao X, Liu L, Soo YO, Pu Y, et al. (2014) Prevalence and outcomes of symptomatic intracranial large artery stenoses and occlusions in China: the Chinese Intracranial Atherosclerosis (CICAS) Study. *Stroke* 45: 663-669.
8. Crystal P, Crystal E, Leor J, Friger M, Katzinovitch G, et al (2000) Breast arterial calcium on routine mammography as a potential marker for increased risk of cardiovascular disease. *Am J Cardiol* 86: 216-217.
9. Mostafavi L, Marfori W, Arellano C, Tognolini A, Speier W, et al. (2015) Prevalence of Coronary Artery Disease Evaluated by Coronary CT Angiography in Women with Mammographically Detected Breast Arterial Calcifications. *PLoS ONE* 10: e0122289.
10. Rotter MA, Schnatz PF, Currier AA Jr, O'Sullivan DM (2008) Breast arterial calcifications (BACs) found on screening mammography and their association with cardiovascular disease. *Menopause* 15: 276-281.