Use of Radiolucent Breast Cushions to decrease discomfort in Mammography in Asian Women

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Introduction
Mammography can be an unpleasant experience to many women and the discomfort can cause anxiety during the examination. Some patients may even try to avoid or delay further mammograms after a painful experience. In previous large scale studies, breast cushions significantly reduce the pain during mammography without compromising image quality. It is therefore becoming a common practice to use breast cushions in many countries such as in the USA and Australia. To our knowledge, there is little local data to assess the effectiveness of breast cushions in Asian women.

Objectives
To evaluate the effectiveness of breast cushions in decreasing discomfort among Asian patients undergoing mammography.

Methodology
This is a prospective study conducted from May 2012 to December 2014. All women who had requests for bilateral mammograms were recruited. Those who had previous breast surgery or palpable mass were excluded. Breast cushion was used on one breast with laterality of cushion assignment selected by the mammographer randomly. The contralateral breast served as a control and was imaged without the breast cushion. The breast was positioned and compressed with a standard technique in both craniocaudal (CC) and mediolateral oblique (MLO) views. Clinical data including age, last menstrual period and hormonal replacement therapy were collected. Prior experience with mammography, breast composition, compression force, dose parameters and rating of pain using the visual analogue scale (VAS) with and without breast cushion were analyzed. Radiologists were blinded to the laterality of cushion assignment and assessed the images for artifacts and adequacy of tissue acquisition.
Result
A total of 87 Asian women with a mean age of 51 years old were recruited. Prior mammograms were done in 63%, ranging from 1 to 5 times. The mean anticipated VAS before any mammogram done was 5.6. The mean VAS decreased from 6.2 to 4.5 in the breast using the cushion as compared to the contralateral breast without cushion with an average of 22.6% decrease, which was statistically significant p<0.01. The compression force, dose and image artifacts for both CC and MLO views in both groups showed no statistical difference. There was no correlation between the pain experienced with the age, breast composition, last menstrual period or use of hormone replacement therapy. In conclusion, our study showed that breast cushions reduced discomfort during mammography while still maintaining image quality.