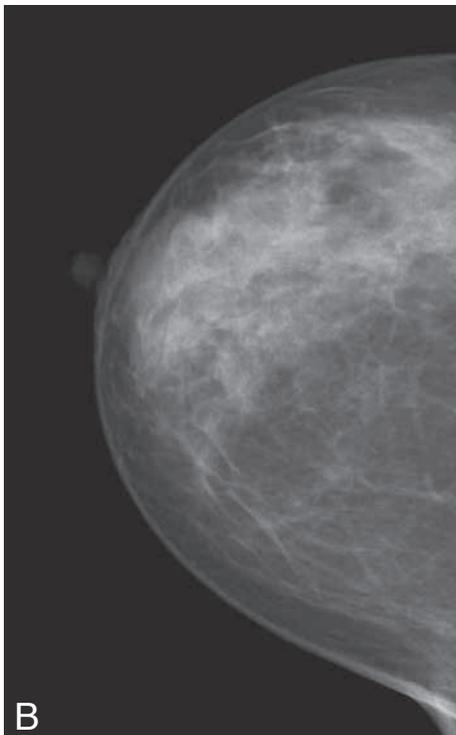
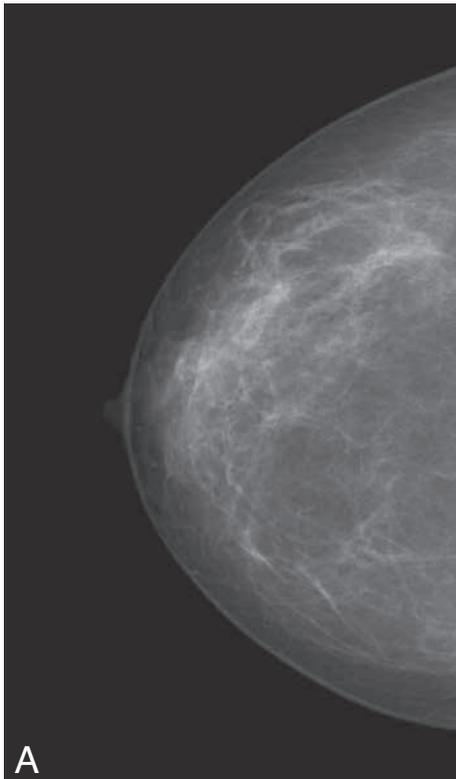


IMAGES IN CLINICAL RADIOLOGY



Marked increase of breast density due to a levonorgestrel-releasing intrauterine device

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A 44-year old woman presented with bilateral breast pain and a feeling of increasing "tenderness" over the last year. Clinical examination as well as ultrasound performed by her obstetrician was unremarkable. Mammography was performed at our department. No suspicious mass or microcalcifications were found. A marked increase in breast density (ACR 4) compared to the previous exam two years previously (ACR 2) was evident (Fig. A, B). The patient reported about the insertion of a levonorgestrel-releasing intrauterine device about one and a half year ago (Mirena[®], Bayer Healthcare, Leverkusen, Germany). No systemic hormonal intake was reported (oral or transdermal) and clinical history was unremarkable. Especially there were no pathologies with a possible increase in breast density (radiation therapy to the chest, diabetes, congestive heart failure). There was no recent pregnancy.

Comment

Physiologically there is a decrease in breast density in time. This may be reversed by oral hormonal therapy. About 25% of women undergoing hormonal replacement therapy show an increase in breast density. This is an important side effect, because with increased density the sensitivity of mammographic screening for breast cancer substantially decreases. A levonorgestrel-releasing intrauterine device is used for contraception. It delivers a small amount of levonorgestrel, a progesterone-like hormone, into the uterine cavity for about 5 years. There is only one patient series examining the changes in breast density with the use of such an intrauterine device. Lundström et al studied 20 postmenopausal women with a levonorgestrel-releasing intrauterine device and oral intake of estradiol, in this series 30% of women shows an apparent increase in breast density (1). No reports on changes of breast density in premenopausal women using a levonorgestrel-releasing intrauterine device for contraception were found. Our patient seems to be the first described case. Radiologists should include systemic effects of topical applied hormones in their differential diagnosis of increasing breast density.

Reference

1. Lundström E., et al.: Digitized assessment of mammographic breast density in patients who received low-dose intrauterine levonorgestrel in continuous combination with oral estradiol valerate: a pilot study. *Fertil Steril*, 2006, 85: 989-995.

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