Original Research Article

Prediction of endometrial pathology by measuring endometrial thickness with TVS in women with breast cancer on tamoxifen

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Abstract

Background: Tamoxifen is given in women with breast cancer who underwent surgery and is receptor positive. As Tamoxifen increases the risk of endometrial carcinoma to 2% a screening technique such as transvaginal sonography is essential to identify women at risk of endometrial cancer.

Aim: To identify endometrial pathology in women using tamoxifen after surgery for breast cancer.

Material and methods: Fifty women on tamoxifen for breast cancer attending the department of radiotherapy were screened once in six months by history taking, clinical examination and measuring endometrial thickness with TVS. Endometrial biopsy for histology was performed in women with endometrial thickness more than 11 mm.

Observation: Endometrial biopsy was performed in ten women who were found to have endometrial thickness > 11 mm. Out of ten, four had normal endometrium, three had simple hyperplasia one was found to have complex endometrial hyperplasia without atypia and two were reported to have inadequate endometrium.

Conclusion: Routine screening with TVS is not a cost effective measure as tamoxifen induces subepithelial stromal hypertrophy resulting in minimal tissue yield on endometrial biopsy. Therefore bleeding should remain the primary trigger for investigation of women on tamoxifen.

Key words

Bleeding, Breast cancer, Endometrial thickness, Tamoxifen, Transvaginal sonography.

Introduction

Breast cancer is now the most common cancer in most cities in India and second most common in rural areas [1]. Average age of developing breast cancer has undergone a significant change over the last few decades, increasing number of patients seen in younger age group and this definitely is a very disturbing trend [2]. Tamoxifen, a non-steroidal antiestrogen agent is widely used as adjunctive therapy in prevention of recurrences and improvement of survival in women with breast cancer who underwent surgery. Although tamoxifen is primarily anti-estrogenic it has modest estrogenic activity on endometrium. In standard dosages of 20 mg/ day, tamoxifen may be associated with endometrial proliferation, hyperplasia, polyp, invasive carcinoma, and uterine sarcoma [3]. Women receiving tamoxifen experience a three to six fold greater incidence of endometrial cancer. It has also been reported that the degree of endometrial thickening corresponds to the duration of tamoxifen therapy. Tamoxifen may cause the endometrium to appear thickened, irregular, and cystic. Changes tend to be subendometrial in location and cause subendometrial cysts that can be demonstrated at an ultrasound [4, 5].

Material and methods

The present study was a prospective study conducted in women with breast cancer on tamoxifen, 20 mg per day after surgery and chemotherapy. Fifty women with breast cancer attending OP, Department of Radiotherapy, King George Hospital, Visakhapatnam for tamoxifen were included in the study from June 2009 to June 2015. They were evaluated clinically by history and physical examination and were subjected to transvaginal sonography once in 6 months in the Department of Radiodiagnosis, King George Hospital. Endometrial thickness was measured in sagittal plane from one basal endometrial interface to the other in its thickest echogenic area. Care was taken not to include hypoechoic myometrium in the measurement. This was repeated once in six months for five years duration during which they were on tamoxifen. Inclusion criteria were asymptomatic women with breast cancer on tamoxifen who could come for regular follow up. Exclusion criteria were women with breast cancer on tamoxifen who developed bleeding, women who have undergone hysterectomy, women not willing to come for follow up, and women who developed endometrial pathology during study period. Endometrial thickness of >11 mm was taken as a cut-off for taking office endometrial biopsy and was sent for histopathological examination in ten women.

Results and Discussion

Our study comprised of 60% of women with breast cancer in the age group of 40 to 60 years, 12 % in 20 to 30 years, 16% in 30 to 40 years, and 12% in 60 to 70 years. (**Table – 1**) Most of the women in our study group were in the age of 40 to 60 which was similar to the age wise distribution of women with breast cancer in cancer statistics of India, 2011.

Table – 1: Distribution of women with breast cancer on tamoxifen according to age.

Age group (Years)	Number of women with breast cancer on tamoxifen
20 - 30	6
30 - 40	8
40 - 50	14
50 - 60	16
60 - 70	6

Baseline histopathology in these ten women who had endometrial thickness above 11 mm showed scanty endometrium in six, simple hyperplasia in three, and complex endometrial hyperplasia without atypia in one. (**Table – 2**)

Table – 2: Distribution of cases according to histopathology report.

Histopathology report	No of women
Scanty endometrium	6
Simple hyperplasia	3
Complex hyperplasia without atypia	1

Endometrial samples from women taking tamoxifen tend to be scanty, as tamoxifen may result in fibrosis of the endometrial stroma, making evaluation by biopsy difficult. The fibrosis can result in cystic dilatation of endometrial glands on an obstructive basis and this can be seen on hysteroscopy [6].

Several approaches have been explored for screnning asymptomatic women using tamoxifen for endometrial pathology. Correlation is poor between ultrasound measurements of endometrial thickness and abnormal pathology in asymptomatic women because tamoxifen induces subendometrial hypertrophy [7]. In asymptomatic women using tamoxifen, screening for endometrial cancer with routine TVS, endometrial biopsy or both has not been shown to be effective [8]. Although asymptomatic postmenopausal tamoxifen treated women should not have routine testing to diagnose endometrial pathology sonohysterography can be used as an adjunctive to TVS to increase the accuracy [9]. Unless woman has been identified at risk routine endometrial surveillance has not proved to be effective as surveillance leads to more invasive and costly diagnostic procedures and hence not recommended [3].

Conclusion

Routine screening with TVS is not a cost effective measure as tamoxifen induces subepithelial stromal hypertrophy resulting in minimal tissue yield on endometrial biopsy. Therefore bleeding should remain the primary trigger for investigation of women on tamoxifen.

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