Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page:www.jamdsr.com doi:10.21276/jamdsr Index Copernicus value [ICV] =82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Evaluation of radiological findings among breast cancer patients: An observational study

[1]Grish Govind Rao Kakde, [2]Sweta Sareen

[1]Associate Professor, Department of Radiology, Heritage Institute of Medical Sciences, Varanasi, Uttar Pradesh, India;
[2]Assistant Professor, Department of Obst & Gayne, Gouri Devi Institute of Medicine Sciences & Hospital, Durgapur, West Bengal, India

ABSTRACT:
Background: The present study was conducted for determining the radiological findings among breast cancer patients. **Materials & methods:** A total of 50 histological proven cases of breast cancer were enrolled. Complete demographic and clinical details of all the patients was obtained. A Performa was made and clinical findings of all the patients was recorded in detail. Radiographic assessment of all the patients was done and radiographic findings of all the patients was evaluated and assessed in a separate Performa. All the results were recorded in Microsoft excel sheet followed by statistical analysis using SPSS software. **Results:** A total of 50 patients were analyzed. Mean age of the patients was 38.2 years. Irregular mass was seen in 92 percent of the patients while oval-round mass was seen in 8 percent of the patients. Margins were circumscribed and Microlobulated/angulated in 2 percent and 48 percent of the patients respectively. Indistinct and spiculated margins was seen in 30 percent and 20 percent of the patients respectively. Mammographic findings were seen in 16 percent of the patients. Among them, Microcalcification, asymmetry density and distortion were present in 20 percent, 30 percent and 6 percent of the patients respectively. **Conclusion:** Women with breast cancer typically discover a palpable tumor on their own, while imaging results might vary. Although US is the primary method for diagnosing breast cancer, MRI and mammography can also be used to aid in the diagnosis and assessment of the disease's severity.
Key words: Breast cancer, Radiographic

Received: 17 December, 2017 Accepted: 20 January, 2018

Corresponding author: Sweta Sareen, Assistant Professor, Department of Obst & Gayne, Gouri Devi Institute of Medicine Sciences & Hospital, Durgapur, West Bengal, India

This article may be cited as: Kakde GGR, Sareen S. Evaluation of radiological findings among breast cancer patients: An observational study. J Adv Med Dent Scie Res 2018;6(2):205-208.

INTRODUCTION

Increased incidence of cancer in recent years and its impact on different physical, mental, and social dimensions of human life have turned it to a major problem of the century. The incidence of this disease in developed countries varies from 1 to 2 percent, with almost 5% yearly increase in less developed countries. According to estimates, more than 7 million people globally die from cancer. It is predicted that the number of new cancerous cases rises from 10 to 15 million by 2020. Meanwhile, breast cancer is the most prevalent type of malignant neoplasms among women with more than one million new cases per year.[1- 4]

Evidence suggests a relationship between the use of hormone replacement therapy (HRT) and breast cancer risk. Breast cancers related to HRT use are usually hormone receptor positive. When compared with patients who do not use HRT, breast cancer risk is higher in HRT users. An international meta-analysis examining the risk of breast cancer with HRT found that in women who did not use HRT, RR increased by a factor of 1.028 for each year older at menopause, comparable to the relative risk of 1.023 per year in women who use HRT or for those who ceased to use HRT up to four years previously.[5- 7]Hence; the present study was conducted for determining the radiological findings among breast cancer patients.

MATERIALS & METHODS

The present study was conducted for determining the radiological findings among breast cancer patients. A total of 50 histological proven cases of breast cancer were enrolled. Complete demographic and clinical

details of all the patients was obtained. A Performa was made and clinical findings of all the patients was recorded in detail. Radiographic assessment of all the patients was done and radiographic findings of all the patients was evaluated and assessed in a separate Performa. All the results were recorded in Microsoft excel sheet followed by statistical analysis using SPSS software. Univariate analysis was done for assessing the level of significance.

RESULTS

A total of 50 patients were analyzed. Mean age of the patients was 38.2 years. While assessing the clinical profile, it was seen that 76 percent of the patients had palpable mass. Positive family history of breast cancer was present in 20 percent of the patients. Invasive ductal carcinoma, invasive lobular carcinoma and mixed carcinoma was present in 76 percent, 16 percent and 8 percent of the patients respectively. Irregular mass was seen in 92 percent of the patients while oval-round mass was seen in 8 percent of the patients. Margins were circumscribed and Microlobulated/angulated in 2 percent and 48 percent of the patients respectively. Indistinct and spiculated margins was seen in 30 percent and 20 percent of the patients respectively. Mammographic findings were seen in 16 percent of the patients. Among them, Microcalcification, asymmetry density and distortion were present in 20 percent, 30 percent and 6 percent of the patients respectively.

Table 1: General characteristics

Variables		Number	Percentage
Mean age (years)		38.2	
Palpable mass		38	76
Family history of breast cancer		10	20
Histopathological type	Invasive ductal carcinoma	38	76
	Invasive lobular carcinoma	8	16
	Mixed carcinoma	4	8

Table 2: Radiological findings

Radiological findings		Number	Percentage
Shape	Irregular	46	92
	Oval-round	4	8
Margin	Circumscribed	1	2
	Microlobulated and angulated	24	48
	Indistinct	15	30
	Spiculated	10	20
Mammographic findings	No abnormality	8	16
	Microcalcification	10	20
	Asymmetry density	15	30
	Distortion	3	6
	Mass	14	28

DISCUSSION

Breast cancer is the most common cause of cancer in women and the second most common cause of cancer death in women in the U.S.Breast cancer refers to cancers originating from breast tissue, most commonly from the inner lining of milk ducts or the lobules that supply the ducts with milk.Worldwide, breast cancer comprises 10.4% of all cancer incidences among women, making it the second most common type of non-skin cancer (after lung cancer) and the fifth most common cause of cancer death. In 2004, breast cancer caused 519,000 deaths worldwide (7% of cancer deaths; almost 1% of all deaths). Breast cancer is about 100 times more common in women than in men, although males tend to have poorer outcomes due to delays in diagnosis.[8- 11]Hence; the present study was conducted for determining the radiological findings among breast cancer patients.

A total of 50 patients were analyzed. Mean age of the patients was 38.2 years. While assessing the clinical profile, it was seen that 76 percent of the patients had palpable mass. Positive family history of breast cancer was present in 20 percent of the patients. Invasive ductal carcinoma, invasive lobular carcinoma and mixed carcinoma was present in 76 percent, 16 percent and 8 percent of the patients respectively. Irregular mass was seen in 92 percent of the patients while oval-round mass was seen in 8 percent of the patients. Margins were circumscribed and Microlobulated/angulated in 2 percent and 48 percent of the patients respectively. The American College of Radiology has established the Breast Imaging Reporting and Data System (BI-RADS) for standardizing radiological terms and reports in mammography screening. The Breast Imaging Reporting and Data System provides diagnostic categories that have implications for guidance regarding follow-up or biopsy of mammographic breast lesions. BI-RADS 3 lesions are considered probably benign with a malignancy risk < 2%. These

findings can be followed up at predetermined intervals according to current recommendations. Suspicious lesions with a substantial probability, but without the classic appearance of malignancy, are classified as BI-RADS 4. Minimal invasive biopsy should be considered in patients with these lesions. BI-RADS 5 lesions are highly suggestive of malignancy.[12]

In the present study, indistinct and spiculated margins was seen in 30 percent and 20 percent of the patients respectively. Mammographic findings were seen in 16 percent of the patients. Among them, Microcalcification, asymmetry density and distortion were present in 20 percent, 30 percent and 6 percent of the patients respectively. Several studies have been conducted or are in progress regarding the sensitivity and specificity of digital and computed mammography when compared to the older film/screen technology. The only completed, federally funded program, was conducted by researchers funded by the United States Department of Defense. In this trial, 4,945 women over age 40 underwent screening mammography. Both film/screen and digital mammography exams were performed for comparison. No statistical difference was noted in sensitivity between the two modalities. Results did show a significantly smaller number of recalls and fewer biopsies were required with digital imaging.[13, 14]In vivo microwave imaging of women with normal mammographic exam suggests that dielectric properties are heterogeneous and correlate with radiographic density. A recent two-part series on measurements of ultra-wideband dielectric properties from normal and cancer tissue samples indicate substantial variations in dielectric properties for normal tissues, and that the contrast in dielectric properties between malignant and adipose tissues could be as high as 10:1, whereas that of malignant to fibroglandular tissue could be no more than 10%. A pilot clinical study that evaluated EIS, MIS, and NIRS indicate substantial contrast difference between abnormal and normal breast tissue.[15- 17]

CONCLUSION

Women with breast cancer typically discover a palpable tumor on their own, while imaging results might vary. Although US is the primary method for diagnosing breast cancer, MRI and mammography can also be used to aid in the diagnosis and assessment of the disease's severity.

REFERENCES

1. Poorkiani M, Hazrati M, Abbaszadeh A, Jafari P, Sadeghi M, Dejbakhsh T, Mohammadian Panah M. Does arehabilitation program improve quality of life in breast cancer patients. Payesh. 2010;9(1):61–68.
2. Aghabarari M, Ahamadi F, Mohammadi E, Hajizadeh E, Farahania V. Physical, emotional and social dimension of quality of life among breast cancer women under chemotherapy. Iranian Journal of Nursing Research. 2005;3:55–65.
3. Hasanpoor Dehkordi A, Azari S. Quality of life and related factor in cancer patients. Behbood. 2006;10(2):110–119.
4. Saki A, Hajizadeh E, Tehranian N. Evaluating the Risk Factors of Breast Cancer Using the Analysis of Tree Models.Ofogh-e-Danesh. Journal of Gonabad University of Medical Sciences. 2011;17(2):60–69.
5. 3. Anderson BO, Yip CH, Smith RA, Shyyan R, Sener SF, Eniu A, Carlson RW, Azavedo E, Harford J. Guideline implementation for breast healthcare in low-income and middle-income countries: overview of the Breast Health Global Initiative Global Summit 2007. Cancer. 2008;113:2221–2243.
6. Siegel R, Naishadham D, Jemal A. Cancer statistics, 2013. CA Cancer J Clin. 2013;63:11–30.
7. Berry DA, Cronin KA, Plevritis SK, Fryback DG, Clarke L, Zelen M, Mandelblatt JS, Yakovlev AY, Habbema JD, Feuer EJ. Effect of screening and adjuvant therapy on mortality from breast cancer. N Engl J Med. 2005;353:1784–1792.
8. Margot New SEER Report Documents High Risk of Second Cancers in Cancer Survivors. Oncology Times. 2007;29(5):8.
9. Ershler W.B. The Influence of Advanced Age on Cancer Occurrence and Growth. In: Balducci L., Extermann M, editors. Biological Basis of Geriatric Oncology. Vol. 124. Springer US: 2005. pp. 75–87.
10. Khuwaja G. A., Abu-Rezq A. N. Bimodal breast cancer classification system. Pattern Analysis and application. 2004;7:235–242.
11. Hartmann L. C., Sellers T. A., Frost M. H., Frost M. H., Lingle W. L., Degnim A. C., Ghosh K., Vierkant R. A., Maloney S. D., Pankratz V. S., Hillman D. W., Suman V. J., Blake C., Tlsty T., Vachon C. M. Benign breast disease and the risk of breast cancer. N Engl J Med. 2005;353:229–237.
12. Kettritz U. Radiologische Morphologie des Mammakarzinoms [Radiological features of breast cancer]. Verh Dtsch Ges Pathol. 2005;89:48-51.
13. Hendrick RE, Lewin JM, D'Orsi CJ, Kopans D, Conant E, Cutter G. Non-inferiority study of FFDM in an enriched diagnostic cohort: Comparison with screen-film mammography in 625 women. In: Yaffe MJ, editor. IWDM 2000: 5th International Workshop on Digital Mammography. Madison, WI: Medical Physics Publishing; 2001. pp. 475–81.
14. Lewin JM, D'Orsi CJ, Hendrick RE, Moss LJ, Isaacs PK, Karellas A, et al. Clinical comparison of full-field digital mammography and screen-film mammography for detection of breast cancer. AJR Am J Roentgenol. 2002;179:671–7.
15. Lazebnik M., McCartney L., Popovic D., Watkins C. B., Lindstrom M. J., Harter J., Sewall S., Magliocco A., Booske J. H., Okoniewski M., and Hagness S. C., "A large-scale study of the ultrawideband microwave dielectric properties of normal breast tissue obtained from reduction surgeries," Phys. Med. Biol. 10.1088/0031-9155/52/10/001 52(10), 2637–2656 (2007).
16. Lazebnik M., Popovic D., McCartney L., Watkins C. B., Lindstrom M. J., Harter J., Sewall S., Ogilvie T., Magliocco A., Breslin T. M., Temple W., Mew D., Booske J. H., Okoniewski M., and Hagness S. C., "A large-scale study of the ultrawideband microwave dielectric properties of normal, benign and malignant breast tissues obtained from cancer surgeries," Phys.

Med. Biol. 10.1088/0031-9155/52/20/002 52(20), 6093–6115 (2007).
17. Poplack S. P., Tosteson T. D., Wells W. A., Pogue B. W., Meaney P. M., Hartov A., Kogel C. A., Soho S. K., Gibson J. J., and Paulsen K. D., "Electromagnetic breast imaging: results of a pilot study in women with abnormal mammograms," Radiology 10.1148/radiol.2432060286 243(2), 350–359 (2007).