PREDICTIVE MARKERS FOR SURVIVAL OF BREAST CANCER (THE ANJELINA JOLIE SYNROME)

Dr.ShilpiSahu	Pathology department, Mahatma Gandhi Medical College ad Hospital,Navi Mumbai, India
Dr.Vibha Gajera	Pathology department, Mahatma Gandhi Medical College ad Hospital,Navi Mumbai, India
Dr. Reeta Dhar	Pathology department, Mahatma Gandhi Medical College ad Hospital,Navi Mumbai, India

ABSTRACT *Breast cancer is the most common leading female cancer in the world .There are various prognostic markers in survival of breast cancer which has prognostic & therapeutic applications. About 75% of all breast cancers are "ER positive" & 65% are "PR positive" likely to respond to endocrine therapy. Some breast cancer(10% to 17%)are known as "triple negative" because they lack estrogen and progesterone receptors and do not overexpress the HER2 protein. Evaluation of ER, PR and HER-2/neu expression by immunohistochemistry (IHC) is routinely performed in breast carcinomas.Over expression of HER-2 is prognostic maker of tumor aggressiveness, responsiveness to adjuvant therapy & poor survival in breast cancer.*

INTRODUCTION:

Breast cancer is the most common pathology in females in the world. There are various prognostic markers in survival of breast cancer.The majority of breast cancers associated with the breast cancer gene known as BRCA1 are triple negative.

While molecular/ genetic testing is very elegent, prognostic ,predictive.It is expensive & not widely available.

IHC classification correlates well with intrinsic gene expression microarray categorization.The biggest advantage of IHC is that it has prognostic & therapeutic applications.It is also inexpensive& readily available.

This study is aimed to find association, if any, between parameters such as tumor Size (T-size), histological grade (Bloom Richardson grading), lymph node metastasis, ER, PR and HER-2neu status in breast cancer.

MATERIALS & METHODS:

Study includes mastectomy specimens from August 2014(6 cases) of breast cancer & H & E with IHC markers(ER,PR & HER 2-neu)have been done.

INVASIVE BREAST CARCINOMA (HISTOPATHOLOGY &IHC)

Patient's age (Yrs)	Site of tumor	Size of tumor(cms)	Tumor type & Asso. Findings	Lymph node staus	IHC markers	BLOOM RICHARDSON SCORE	Prognosis
47	Rt Upper outer, inner quadrant	1 X 0.5 X 0.5	IDC +Fibroadenoma	0 / 18	ER + PR + HER 2 -	7 (Grade II)	Good
35	Lt lower quadrant	4 X 1.7 X 2	IDC +Fibrocystic change	2 / 20	ER – PR – HER 2 –	9 (Grade III)	Poor
76	Lt Lower outer	3 X 1 X 1.5	IDC +Fibrocystic change	NIL	ER + PR + HER 2 +	6 (Grade II)	Good
60	Rt Sub areolar	5 X 4.5 X 2.8	IDC	NIL	ER + PR + HER 2-	5 (Grade II)	-
70	Lt upper quadrant	5.5 X 5 X 4.5	IDC+Fibrocystic change	21 / 23	ER - PR - HER 2-	7 (Ggrade II)	Poor
62	Rt lower quadrant	3 X 2.5 X 1	IDC	NIL	ER – PR – HER 2 –	9 (Grade III)	Poor

GROSS EXAMINATION:

Mastectomy specimen with skin flap showing nodular tumor mass measuring 8x6x4cm,firm in consistency.
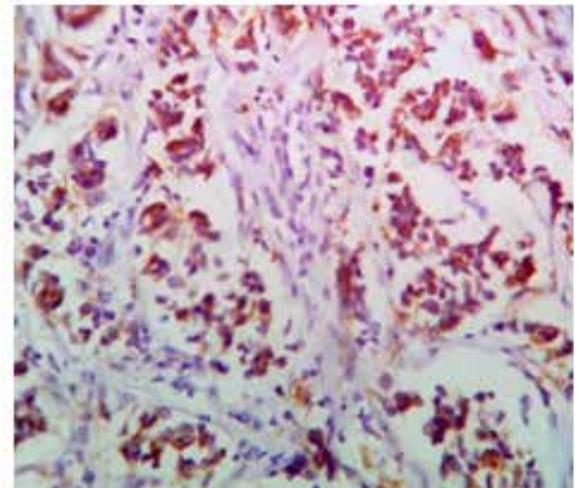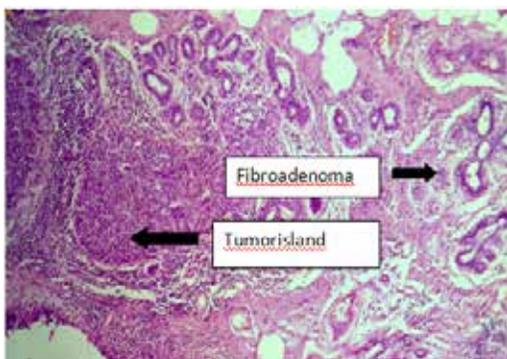
Cut surface –gyayish white, gritty on cutting.
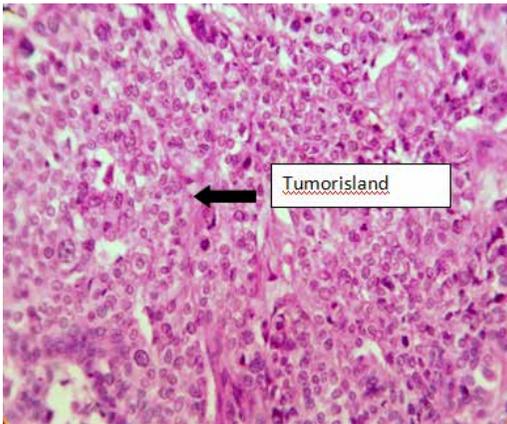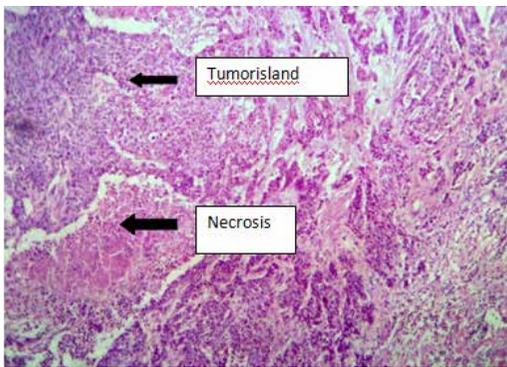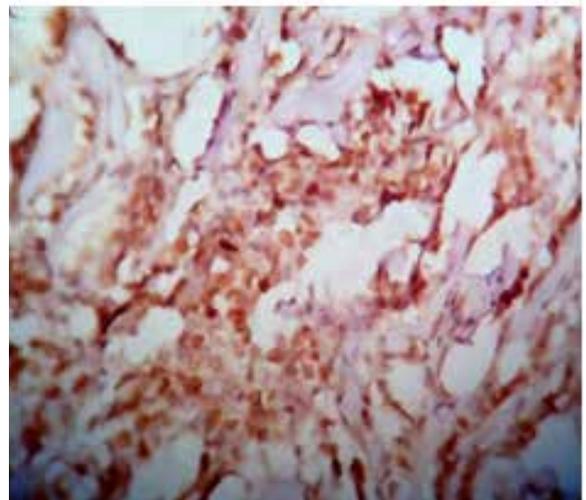
IHC MARKERS
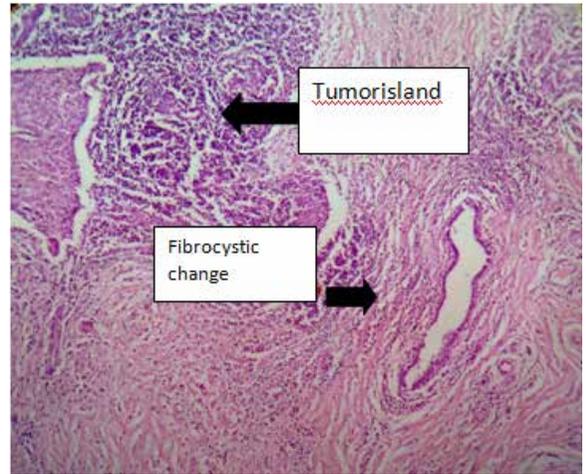
MICROSCOPIC EXAMINATION:

Tumor cells are polygonal in shapearranged in sheet showing nuclear pleomorphism,high N:C ratio,hyperchromasia, prominent nucleoli &atypical mitosis.Areas of nerosis seen.Focal areas of fibrocystic change &fibroadenoma also seen.
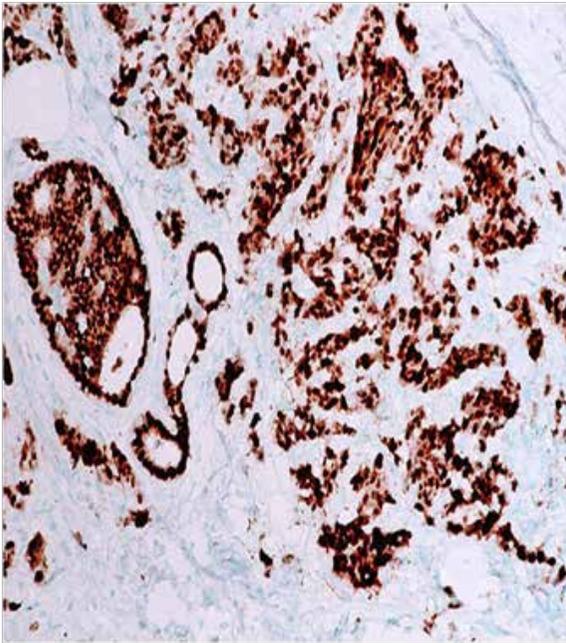
HER-2neu +ve

DISCUSSION:

All cases of invasive breast carcinoma are evaluated for ER/PR status using immunohistochemistry,which has both predictive and prognostic value.

3cases were found with ER,PR positivity & out of these 3 one was triple positive. They were not associated with lymphnode metastasis & grading was also low.No corelation with tumor size was found.

ER,PR positivity indicates good prognosis & respond well to tamoxifen.

One case was found to be HER2neu positive & it indicates bad prognosis with relapse as it treated with herceptin.

3 cases were found triple negative & showed high grade on microscopy.2 of these cases showed lymphnode metastasis. Triple negative indicates bad prognosis.they are more aggressive & require combination therapy

One case was found triple positive.

CONCLUSION:

ER,PR& HER2neu(either individually /together)negative indicates bad prognosis. They need to be followed up & their siblings are adviced for mammography.

The fibrocystic change emerges as a precursors &patients diagnosed with fibrocystic change should be kept under survillance.

Chances of recurrence in HER 2 neu positive is more.

IHC is inexpensive & readily available than molecular methods correlates well with them.

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