

# Histomorphological Study of Inflammatory Breast Lesions

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(Received:22/10/2014, Accepted: 02/11/2014)

## Abstract :

We reviewed 113 patients who had undergone reconstruction of anterior cruciate ligament [acl] between 2009 TO 2012. The incidence of isolated acl tears and acl tears associated with injuries like meniscal tears, other ligamentous injuries and degenerative changes were assessed.

**Aim:** The main aim of this study is to investigate the relationship between the length of time gap between initial ACL injury and ACL reconstruction surgery, and the prevalence of associated injuries such as meniscal tears and osteochondral defects in the knee.

**Materials and Methods :** All patients who underwent ACL reconstruction surgeries at the S S Institute of Medical Sciences & R C Davangere from 2009 to 2012 were evaluated. The time period between initial ACL injury and ACL reconstruction was noted and patients were divided into 2 groups early (less than 3 months) & late (above 3months). Incidence of isolated tears and associated injuries with ACL tears was studied in both groups and statically analyzed.

**Results:** A total of 113 patients with ACL deficiency were reconstructed during the time period, 65 patients were in the early group and 48 patients in the late group. Only 55% of the patients in the early had associated injuries in the early group and 75% of patients had associated injuries in the late group. This was significant statically (p value0.032). Early group had more no of meniscal tears and late group had more no osteochondral defects and other ligamentous injuries.

**Conclusions:** Associated injuries to ACL deficiency are common, meniscal tears might be the result of initial trauma or repeated instability but osteochondral defects were associated with repeated trauma due to instability. A relationship does exist between the length of time from injury to ACL reconstruction, and higher incidence of associated injuries. Early reconstruction is therefore recommended to prevent osteochondral injuries and early degeneration of the joint.

**Key words:** Anterior cruciate ligament; medial meniscus; lateral meniscus; osteochondral defects.

## Introduction

The famous dictum of Rindfleisch(1875)-that the breast is the foster-mother of tumor study is still largely true<sup>1</sup> and much concern is given to malignant lesions of the breast as breast cancer is the most common malignancy in women in Western countries and is emerging also in developing countries; however, benign lesions of the breast are far more frequent than malignant ones. Benign breast diseases constitute a heterogeneous group of lesions including developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations, and neoplasms.

Inflammatory diseases of breast are uncommon, accounting for less than 1% of women with breast symptoms<sup>2</sup>. They are of diverse origin and range from acute mastitis to abscess formation. Some of these lesions are clearly the result of a response to a local insult such as infection, in others the processes in breast reflect a local manifestation of systemic disease and in still others the etiology is not established. These lesions are important not only in terms of local symptoms and discomfort, but also because many may mimic malignancy.

## Materials and Methods

Breast lesions microscopically diagnosed as inflammatory breast diseases over a period of 9 years from January 2005 to December 2013 in the department of pathology, S S Institute of Medical Sciences & Research Centre were included for the study. All the slides and blocks were reviewed and relevant

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clinical data were obtained from request forms. Data were analysed on the basis of age, sex and histological diagnosis. Benign and malignant tumors were excluded from the study.

**Results**

Specimens of breast constituted 1.96% (455/23232) of all histopathology specimens received in the department of pathology over 9 years of which 295 (64.8%) were benign and 160 (35.2%) were malignant lesions. Inflammatory breast lesions constituted 28 (6.2%) of the 295 benign lesions encountered (fig.1). Figure 2 shows the yearly distribution of inflammatory breast diseases indicating an increasing trend.

There are a number of outcome studies which have examined the long-term results of patients who have had reconstruction of the ACL<sup>29-32</sup>. These and other studies have made observations in regard to meniscal tears in both the ACL-deficient and reconstructed knee<sup>33-36</sup>.

In general, early rather than late reconstruction has been recommended to minimize the risk of meniscal tears. Some studies have compared surgical with conservative

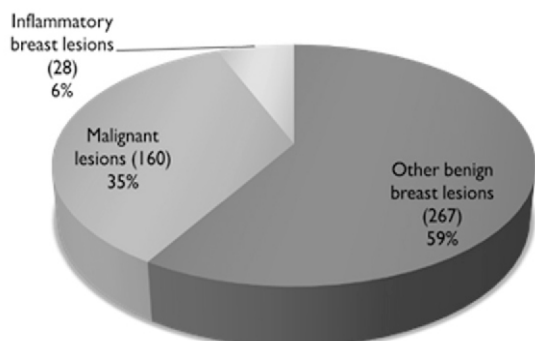


Fig. 1



Fig. 2

The age range of patients with inflammatory breast disease in this study was 17 to 80 years with a mean age of 35.39 years. Majority(10) of the patients belonged to the age group of 30-39 (Table 1).

**Table 1:** Age-wise distribution of inflammatory breast diseases

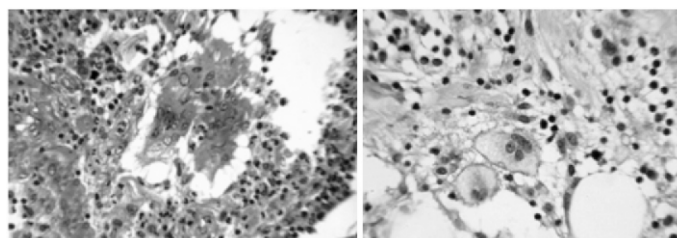
Age (years)	Number	Percentage %
10-19	2	7.1
20-29	9	32.1
30-39	10	35.7
40-49	3	10.7
50-59	3	10.7
60-69	0	0
> 70	1	3.6
<b>Total</b>	<b>28</b>	<b>100</b>

**Table 2:** Patterns of Inflammatory breast diseases and their mean ages

Inflammatory breast diseases	Mean age (yrs)	No of cases	Percentage
Acute on chronic mastitis	27	10	36
Chronic mastitis	43	2	7
Fat necrosis	46.1	7	25
Granulomatous mastitis	34.6	9	32
<b>Total</b>	<b>35.39</b>	<b>28</b>	<b>100</b>

Table 2 shows the mean ages and various histological types of inflammatory breast diseases. Acute on chronic mastitis was the commonest inflammatory lesion accounting for 10 cases (36%) with a mean age of 27 years followed by 9 cases (32%) of granulomatous mastitis with a mean age of 34.6years. Other lesions encountered were 7 cases (25%) of fat necrosis and 2 cases (7%) of chronic mastitis with mean age of 46.1 and 43 years respectively.

Then shape and consistency of lesions were reviewed and it was observed that 10 cases(36%) were ovoid , 8 cases(29%) were round and 6 cases(21%) were irregular. 19 cases(68%) were soft and 8 cases(29%) were firm in consistency.



**Figures 3 & 4:** Multinucleated giant cells. H & E High power

Foreign body giant cells and foamy macrophages were seen in 5 cases of fat necrosis and 3 cases of granulomatous mastitis. Granulomatous mastitis was subcategorized into idiopathic (7 cases; 77.8%) and tuberculous mastitis (2 cases; 22.2%). Majority of cases were diagnosed clinically as carcinoma breast (8 cases; 28.6%).

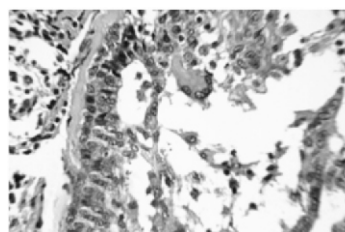


Figure 5: Langhans type of giant cell. H & E High power

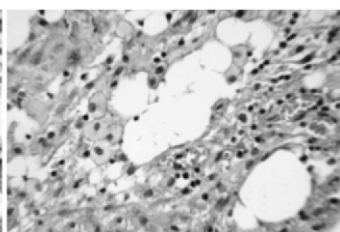


Figure 6: Foamy macrophages H & E High power

## Discussion

Breast lesions pose health and cosmetic hazards predominantly in females. The anxiety and fear associated with increased awareness of breast cancer has significantly improved the health seeking behaviour of patients with breast diseases. This might partially explain the increasing incidence of inflammatory breast diseases over the years as observed in this study.

The relative frequency of inflammatory breast lesions in the present study was 6.2% which was similar to the studies done by ochicha<sup>3</sup> (6%) and A N Olu eddo<sup>4</sup>(5.9%) but it was lower as compared to studies done by Das<sup>5</sup> (9.1%), Bafakeer S<sup>6</sup>(8.3%) and Sandison AT<sup>1</sup>(7.4%) [Table 3]

Table 3: Relative frequency of inflammatory breast diseases in different studies

Studies	No of Inflammatory diseases	Total Breast diseases	Percentage
Sandison A T 1962	176	2246	7.4
Das et al 1992	97	1061	9.1
Ochicha O. et al.2002	13	217	6
Bafakeer S 2010	53	635	8.3
A N Olu eddo 2011	152	2575	5.9
Present study	28	455	6.2

Table 4: Comparison of inflammatory breast lesions in different age groups

Age groups	H A Nggada et al 2011	Bafakeer S 2010	Present study
10-19	17	0	7
20-29	39	15	32
30-39	11	43	36
40-49	5	24	11
50-59	22	8	11
60-69	5	4	0
> 70	0	6	3

Inflammatory breast diseases occurred most commonly in 3<sup>rd</sup> decade which was similar to Bafakeer S's study<sup>6</sup> but they presented more commonly in 2<sup>nd</sup> decade in study done by Nggada<sup>10</sup>[Table 4]. Mean age of tuberculous mastitis was 31.5years similar to study done by Tanrikulu A C<sup>11</sup> (31.5%), Bani-Hani<sup>12</sup> (32.9%)

and Mehta<sup>13</sup> (32.28%). Mean age of granulomatous mastitis in the study is 34.66 years similar to studies done by Hee Ri Na Seo<sup>14</sup> and K Y Y Kok (33.5 and 34 years respectively) but higher compared to Boufettal H (38%) and slightly higher than Fletcher<sup>15</sup>(29.14years) and J J Going<sup>16</sup>(28.4years).

Table 5: Distribution of inflammatory breast lesions in various studies

Type of lesion	S Samir 1993	Hussain N 2005	Mallik N 2010	A N Olu eddo 2011	Present study
Acute on chronic mastitis	41	-	51	5	36
Chronic mastitis	7	36	12	18	7
Fat necrosis	-	3	-	20	25
Granulomatous mastitis	10	15	4	17	32
Duct ectasia	28	13	28	29	-
Others	14	33	5	11	-

Acute on chronic mastitis was the most common inflammatory breast disease in this study accounting for 36% of cases. This was also the finding in studies done by S Samir<sup>7</sup> (41%) and Malik N<sup>8</sup> (51%). Granulomatous mastitis, the second most common inflammatory breast disease in this study, accounted for 32% of cases. Lower figures were however reported by A N Olu eddo<sup>4</sup> (17%), Hussain N<sup>9</sup> (15%) and S Samir<sup>7</sup> (10%).

Fat necrosis accounted for 25% of cases, a figure consistent with the 20% documented by A N Olu eddo<sup>4</sup>. Chronic mastitis was the least common inflammatory breast disease accounting for only 7%, observation also made in the study by S Samir<sup>7</sup> (7%) [Table 5].

### Conclusion

Inflammatory lesions are not uncommon. There is increasing incidence in developing countries. The higher incidence of inflammatory breast lesions in this study may be due to the fact that more patients with breast diseases now present to hospitals as a result of increased awareness. Histopathology plays a crucial role in diagnosing these lesions because clinical & radiological features are nonspecific.

They have to be diagnosed early and treated appropriately and greater awareness of these lesions is mandatory to avoid unnecessary mastectomies & to reduce morbidity among patients.

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How to Cite this article :

Shweta Pai, Shashikala P, Kavita G.U. Histomorphological Study of Inflammatory Breast Lesions Tear. *J Pub Health Med Res*, 2014;2(1):24-27

Funding: Declared none  
Conflict of interest: Declared none