

## PAGET DISEASE - A RARE CASE REPORT

R.G.Sharada<sup>1</sup>, Jayakar Thomas<sup>2</sup>, G.Sukanya<sup>3</sup> and K.Ravishankar<sup>4</sup>

Junior Resident<sup>1</sup>, Professor & Head<sup>2</sup>, Assistant Professor<sup>3</sup>, Department of Dermatology,  
Professor<sup>4</sup>, Department of General Surgery,  
Sree Balaji Medical College & Bharath University, Chennai 600044, India.

Corresponding Author: - **Jayakar Thomas**  
E-mail: [jayakarthomas@gmail.com](mailto:jayakarthomas@gmail.com)

<p><b>Article Info</b> Received 15/01/2016 Revised 27/02/2016 Accepted 12/03/2016</p> <p><b>Key words:</b> asymptomatic multiple pits, cheeks</p>	<p><b>ABSTRACT</b> Paget disease of the breast is a rare form of breast carcinoma which presents with unilateral, sharply marginated, erythematous, eczematous patch or plaque affecting the nipple and occasionally the areola. It is often associated with underlying breast cancer either in situ or invasive intraductal carcinoma. We report a case of Paget disease in a 45 years female who presented with complaints of itchy, red, scaly lesion over the right nipple and areola for the past one year.</p>
---	--

### INTRODUCTION

Paget disease of the breast was first described by Sir James Paget (1874). In 1881, Thin illustrated the first histologic description of Paget disease. Mammary Paget disease (MPD) represent approximately 1%-3% of breast neoplasms (Ashikari *et al.*, 1970). It occurs almost exclusively in women with peak incidence between 50 and 60 years of age. MPD occurs very rarely in males. It is associated always with an underlying in situ or invasive intraductal adenocarcinoma of the breast (Fu *et al.*, 2001; Kollmorgen *et al.*, 1988). MPD frequently presents with unilateral, erythematous, scaly patch or plaque involving the nipple and occasionally the areola.

### CASE REPORT

A 45 years old female presented to our OPD with complaints of itchy, red, scaly lesion over the right breast for the past one year. It initially started over the right nipple as a small reddish lesion which progressively started increasing in size to attain the present size. There was no history of discharge or bleeding from the lesion. There was no history of any pain or burning sensation. There was no history of loss of weight or appetite.

There was no history of similar complaints in the family. The patient was treated with topical antifungals and steroids for the past one year but there was no improvement. Dermatological examination revealed 6 x 6 cm, well defined erythematous, pigmented, scaly plaque present over the right nipple and areola. [Figure 1] No underlying breast masses were palpable. No bleeding or discharge from the lesion. No palpable axillary lymph nodes. Left breast is normal on inspection and palpation. [Figure 2] Scalp, oral mucosa, palms, soles, nail and genitalia were normal. Systemic examination was normal. Complete blood counts done were normal. Ultrasound of right breast and abdomen done was normal. A wedge edge biopsy taken from the right breast shows stratified squamous epithelium with ulceration overlying dense inflammatory cell collections, large vacuolated cells with enlarged nuclei and mitotic figures seen in the basal layer and intraepidermally in clusters. [Figure 3].

### DISCUSSION

Paget disease is classified as Mammary and Extramammary Paget disease. Paget disease of the breast is

a rare form of epithelial adenocarcinoma (Niedt, 2005) which affects the ducts of the nipple and areola. It commonly occurs in women after 50 years of age but it can also occur in men (Lancer and Moschella, 1982; O'Sullivan et al., 1994; Ho et al., 1990) with clinical features similar to those in women and with worst prognosis (Deasai et al., 1996). Extramammary Paget disease is a rare neoplasm that affects apocrine bearing skin such as vulva, perianal region, scrotum and penis. It affects women in the sixth to eighth decade of life (Zollo and Zeitouni, 2000; Shepherd et al., 2005) and is usually not associated with underlying malignancy and presents with intense itching.

The pathogenesis of Paget disease arises from the Paget cells, malignant epithelial cells derived from the underlying ductal adenocarcinoma of the breast. Paget cells express heregulin- $\alpha$  receptors HER2/neu and co-receptors HER 3 and HER4. These receptor complexes results in the chemotaxis of breast ductal carcinoma cells and in turn causes migration and infiltration of Paget cells in the overlying epidermis of the nipple and areolar skin. The main pathogenetic hypothesis for those cases that do not have an underlying carcinoma is derivation from Toker cells within the epidermis of the nipple and areola.

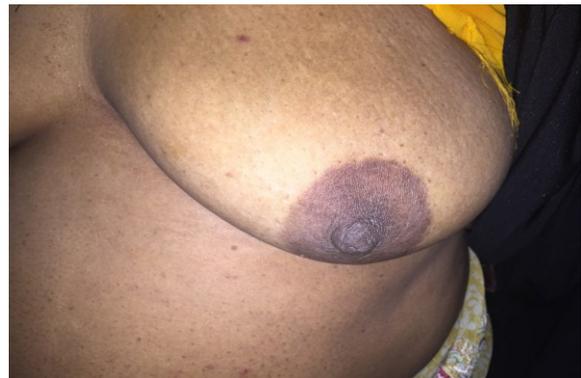
Paget disease of the breast affects only one breast and present with scaling, erythema and eczematous rash around the nipple and areola. The symptoms worsen with pain, itching, burning sensation and yellowish or bloody discharge from the nipple. At times it may be hyperpigmented. Over the course of months or years, it may become eroded. The nipple may or may not be retracted. Approximately 50% of patients present with a palpable mass in their breast (Sakorafas et al., 2001; Kanitakis, 2007) and half will have axillary lymph node involvement. Histologically, it is characterized by the presence of Paget cells which are large, round, pale

staining cells with large nuclei through the epidermis. Intercellular bridges are absent. As the number of Paget cells increases, they compress the squamous cells and form a network, the meshes of which are filled with Paget cells lying singly and in groups. The dermis shows a severe chronic inflammatory reaction. The most important points which help to distinguish PD from pagetoid melanoma are Paget cells are separated in many areas from the dermis by flattened basal cells, whereas melanoma cells border directly on the dermis. The tumor cells of melanoma contain abundant cytoplasmic S-100 protein but is usually absent in Paget disease and melanoma cells unlike Paget cells are positive for HMB-45 antigen, Melan-A and other melanocytic markers. Differential diagnoses are eczema, psoriasis, dermatophyte infections and erosive adenomatosis. Treatment is always surgical. Mastectomy remains the standard definitive treatment. Lymph node evaluation via sentinel lymph node biopsy must be considered. Adjuvant therapy consisting of radiation, chemotherapy or hormonal therapy is recommended based on the lymph node status and specific features of the primary tumor. Overall survival rate in patients with MPD depends upon lymph node status and the presence of underlying breast mass. Patients with negative lymph nodes have 10 year survival rate of 75%-95% whereas those with positive lymph nodes have a survival rate of 20%-40%. Patients with palpable breast mass have 5 year survival probability of 35%-51% as compared to 75%-82% in patients without a palpable mass. Early diagnosis is the key to a favorable prognosis. This case is reported because of presence of unilateral eczematous plaque over the right nipple without any underlying mass. Hence any unilateral eczematous rash on the breast that does not respond to an appropriate course of topical therapy warrants a biopsy and routine mammography allows early detection of underlying breast carcinoma.

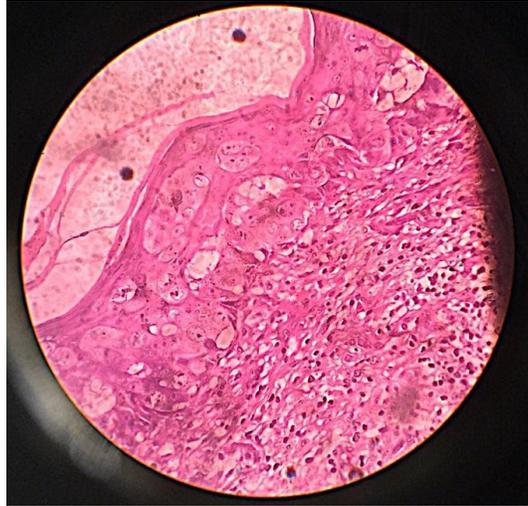
**Figure 1: Clinical photograph showing 6x6, well defined, erythematous, pigmented, scaly plaque present over the right nipple and areola.**



**Figure 2: Clinical photograph showing normal left breast**



**Figure 3: Haematoxylin and eosin (H&E) section of the skin photograph showing large vacuolated cells with enlarged nuclei and mitotic figures seen in the basal layer and intraepidermally in clusters. (Magnification x 40)**



**ACKNOWLEDGEMENT:** NONE

**CONFLICT OF INTEREST:**

The authors declare that they have no conflict of interest.

**STATEMENT OF HUMAN AND ANIMAL RIGHTS**

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

**REFERENCES**

1. Paget J. (1874). On disease of the mammary areola preceding cancer of the mammary gland. *St Barts Hospital Rep*, 10, 87-9
2. Ashikari R, Park K, Huvos AG et al. (1970). Paget's disease of the breast. *Cancer*. 26, 680-5
3. Fu W, Mittel VK, Young SC. (2001) Paget disease of the breast: Analysis of 41 patients. *Am J Clin Oncol*, 24,397.
4. Kollmorgen DR et al. (1998). Paget's disease of the breast: A 33 year experience. *J Am Coll Surg*, 187,171
5. Niedt G. Paget's disease. In: Rigel DS, Fridman RJ, Dezubow LM, Reintgen DS, et al editors. (2005). *Cancer of the skin*. China: Elsevier. 303-9.
6. Lancer HA, Moschella SL. (1982). Paget's disease of the male breast. *J Am Acad Dermatol*, 7, 393-6.
7. O'Sullivan ST, McGreal GT, Lyons A, Burke L, Geoghegan JG, Brady MP. (1994). Paget's disease of the breast in a man without underlying breast carcinoma. *J Clin Pathol*, 47, 851-2.
8. Ho TC, Jacques M, Schopflocher P. (1990). Pigmented Paget's disease of the male breast. *J Am Acad Dermatol*, 23, 338-41.
9. Deasai DC, Brennan EJ, Carp NZ. (1996). Paget's disease of the male breast. *Am Surg*, 62, 1068-72.
10. Zollo JD, Zeitouni NC. (2000). The Roswell Park Cancer Institute experience with extramammary Paget disease. *Br J Dermatol*, 142, 59.
11. Shepherd V, Davidson EJ, Davies-Humphreys J. (2005). Extramammary Paget Disease. *BJOG*, 112, 273.
12. Sakorafas GH, Blanchard K, Sarr MG, Farley DR. (2001). Paget's disease of the breast. *Cancer Treat Rev*, 27, 9-18.
13. Kanitakis J. (2007). Mammary and extramammary Paget's disease. *J Eur Acad Dermatol Venereol*, 21, 581-90.