LETTERS TO THE EDITOR 29.12.1987

A Case Report of Porokeratosis Mibelli and Breast Cancer

Clinical Aetiology Unit,
Heuberg 16, CH-4051 Basel,
Switzerland.

D.Schlossberg
W.Weber

Sir,- it is worthwhile to mention the case of a woman who became ill of porokeratosis Mibelli and breast cancer with respect to the possible association of these two disorders.

At the age of 29 porokeratosis Mibelli of the skin at the left forearm has been diagnosed by histology. At the age of 36 lobular invasive breast cancer stage II B was detected on the right side and mastectomy performed. After one year local recurrence developed. Surgery, radiotherapy, and chemotherapy followed. The patient died of metastatic disease in 1984, 41 years of age.

The family history revealed no further case of porokeratosis. A sister of the mother suffered from cancer of the thyroid.

Laboratory findings: Chromosome studies of peripheral blood lymphocytes revealed chromosomal instability. This was not found in skin fibroblasts obtained adjacent to the porokeratotic lesions. In addition these fibroblasts did not contain DNA of papilloma viruses.

Porokeratosis Mibelli is a rare skin disease inherited by an autosomal dominant trait. Males are three times more frequently affected than females[1]. There is good evidence that squamous cell carcinomas can develop in lesions of porokeratosis Mibelli[1,2,3,4,5,6]. Epidermal keratinocytes grow and differentiate abnormally resulting in early and incomplete keratinization, loss of the stratum granulosum and pyknosis of the basal keratinocytes. Chromosomal instability was described in cultured fibroblasts[2,6].

We addressed the question whether the coincidence of porokeratosis Mibelli and breast cancer is random or not. Little is known about associations of skin diseases with breast diseases, both tissues being of ectodermal origin. The autosomal dominant inherited skin disease called multiple hamartoma syndrome or Cowden's disease is said to be associated with breast cancer[7,8,9]. Males and females are affected in equal numbers. The mucocutaneous lesions are the most striking feature. They consist of papules with generally keratotic or verrucous surfaces. Many of them are trichilemmomas. The most frequently involved sites are the face and the distal extremities, including palms and soles. A variety of other skin lesions, including squamous cell and basal cell carcinomas have been described.

Breast cancer is the most frequent life-threatening manifestation of this disorder in female patients. The median age at diagnosis was 41 years, with a range of 20 to 62 years. Abnormal proliferation of keratinocytes play a central part in porokeratosis Mibelli as well as in the multiple hamartoma syndrome suggesting a role for growth-activating or promoting agents. Recent evidence suggests that the proliferation of skin and breast tumors may be partly mediated by interactions of transforming growth factors alpha and beta with the EGF receptor[10,11].

Further observations are needed in order to strengthen a possible etiological link between porokeratosis Mibelli and breast cancer.

References

1 Goerttler EA, Jung EG. Parakeratosis Mibelli and skin carcinoma. Humangenetik 1975; 26:291-96.

2 Taylor AMR, Harnden DG, Fairburn EA. Chromosomal instability associated with susceptibility to malignant disease in patients with porokeratosis of Mibelli. J Natl Cancer Inst 1973; 51:371-78.

3 Guss SB, Osbourn RA, Lutzner MA. Porokeratosis plantaris, palmaris, et disseminata: a third type of porokeratosis. Arch Dermatol 1971; 104:366-73.

4 Johnston ENM. Porokeratosis of Mibelli with squamous cell carcinoma. Br J Dermatol 1958; 70:381.

5 Savage J. Porokeratosis (Mibelli) and carcinoma. Br J Dermatol 1964; 76:489.

6 Machino H, Miki Y, Teramoto T, Shiraishi S, Sasaki MS. Cytogenetic studies in a patient with porokeratosis of Mibelli , multiple cancers and a forme fruste of Werner's syndrome. Br J Dermatol 1984; 111:579-86.

7 Brownstein MH, Wolf M, Bikowski JB. Cowden's disease: a cutaneous marker of breast cancer. Cancer 1978; 41: 2393-98.

8 Salem OS, Steck WD. Cowden's disease (multiple hamartoma and neoplasia syndrome): a case report and review of the English literature. J Am Acad Dermatol 1983; 8:686-96.

9 Starink TM. Cowden's disease: analysis of fourteen new cases. J Am Acad Dermatol 1984; 11:1127-41.

10 Derynck R, Goeddel DV, Ullrich A, et al. Synthesis of messenger RNAs for transforming growth factors alpha and beta and the epidermal growth factor receptor by human tumors. Cancer Res 1987; 47:707-12.

11 Ellis DL, Kafka SP, Chow JC, et al. Melanoma, growth factors, acanthosis nigricans, the sign of Leser-Trélat, and multiple acrochordons: a possible role for alpha-transforming growth factor in cutaneous paraneoplastic syndromes. N Engl J Med 1987; 317:1582-87.