Granular cell myoblastoma of the breast

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Five cases of granular cell myoblastoma of the breast are reported, all occurring in Negroes. In none was the correct diagnosis made preoperatively. Because this benign tumour has many features of carcinoma, errors in clinical and mammographic assessment may lead to unnecessary mastectomy. Thus, a histological diagnosis must be made on every apparently malignant lump before any form of definitive therapy is performed.

Granular cell myoblastomas are rare, but since the original description in 1926 by Abrikossoff[1] more than 500 cases have been described in various organs. Only about 6% of the reported lesions occurred in the breast[2]. Although its occurrence at this site is infrequent its recognition is important since it may be mistaken for carcinoma and lead to unnecessary mastectomy. In our experience the entity is not altogether rare. Five cases of breast granular cell myoblastoma are presented which were seen over a 6-year period during which 437 patients with breast cancer were seen.

Material and results

Between 1976 and 1981 25 cases of granular cell myoblastoma involving various organs were examined at the Pathology Department, General Hospital, Port-of-Spain. Of the 5 tumours occurring in the breast none had a correct preoperative diagnosis and 2 were thought to be carcinoma. Both presented as hard breast lumps and one, in a 51-year-old female, showed early fixity to the overlying skin. Accurate histological diagnosis by frozen and paraffin sections prevented mastectomy in these patients all of whom were Negro, aged between 19 and 73: one was male (Table 1). Treatment by excision biopsy was curative in all cases.

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Pathology

Grossly the excised lumps, 1–3 cm in diameter, were firm in consistency, homogenous in appearance and greyish-yellow in colour. Microscopically the tumour cells were large with ill defined cytoplasmic outlines containing abundant granular cytoplasm. The cells were in clusters interspersed with fine to coarse connective tissue septa (Fig 1). Fat stains were negative but the cytoplasmic granules were faintly PAS positive.

Discussion

About 50 cases of breast granular cell myoblastoma have been reported, none with a correct diagnosis before histological examination[3]. Seven of the 15 cases reported by Mulcare[4] and 6 of 19 cases reported by Umansky and Bullock[2] had a preoperative diagnosis of carcinoma. Because of the marked desmoplastic reaction produced by these tumours, fixity to skin and pectoralis fascia is common[4,5]. Rarely, the patient may present with an ulcerated fungating lesion[2]. Thus, the lesion may have many of the classical clinical features of malignancy.

Granular cell myoblastoma may also mimic carcinoma on gross pathology[3], frozen section[4,6] and mammography[3,7]. As a result mastectomy has been performed on the mistaken diagnosis of carcinoma[2,4]. Although malignant granular cell myoblastoma has been reported at other sites[8,9], no case has been documented in the breast. In this organ the lesions are invariably benign and local excision is curative. It is therefore extremely important that it be distinguished from carcinoma.

Aspiration smears have been recommended by some workers as a reliable method of diagnosis[10] but caution

TABLE 1

Granular cell myoblastoma (GCM) of breast clinical and histological diagnosis

Patient	*Age : Sex*	*Race*	*Preoperative diagnosis*	*Frozen section*	*Final pathology*
1	19 : F	Negro	Fibroadenoma	Not done	GCM
2	73 : M	Negro	Carcinoma	Benign tumour	GCM
3	25 : F	Negro	Fibroadenoma	Not done	GCM
4	23 : F	Negro	Cystic mastitis	Not done	GCM
5	51 : F	Negro	Carcinoma	Benign tumour	GCM

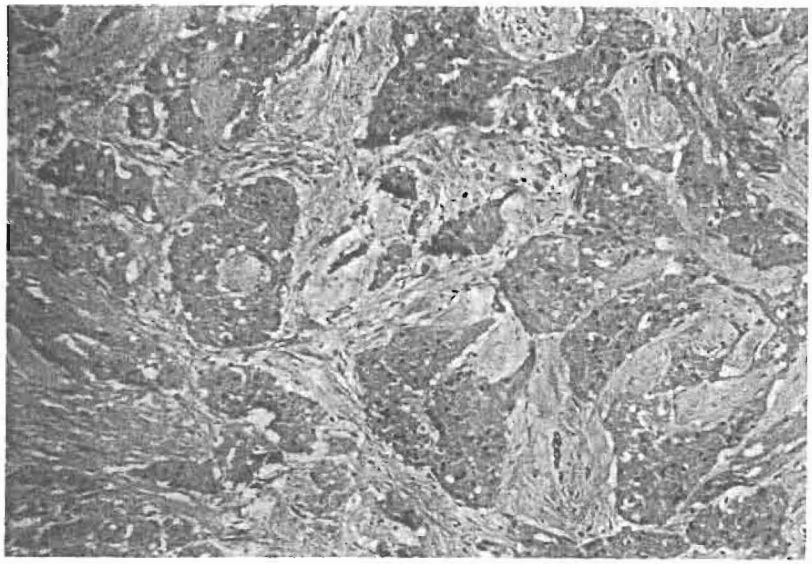

Fig 1 Large polyhedral cells with granular cytoplasm containing regular, dark nuclei without mitotic figures. Between the bundles of cells is thick fibrous stroma. (H & E × 100).

is essential as an erroneous interpretation can have disastrous consequences. In a doubtful case, excision biopsy to reach a definitive diagnosis is mandatory even where the tumour presents clinically and mammographically as carcinoma. As in our two cases, if there is any doubt clinically or on frozen section, paraffin sections should be examined before further surgery is undertaken.

This neoplasm is extremely rare in the male breast, only 4 cases having been reported[2 4 10]. It is interesting to note that all of them, and our own case, were diagnosed clinically as carcinoma.

The precise cellular origin of this tumour is a matter of controversy but, there is strong evidence that it is derived from an undifferentiated mesenchymal cell[11]. The greater reactive potential of mesenchymal tissue among Negroes may be responsible for their predisposition to this tumour, as has been noted in several reports[2 12], and may explain its relatively commoner occurrence in our predominantly negro hospital population. However, its occurrence among whites, even of the younger age group, is well documented and constant awareness of the possible diagnosis may avoid unnecessary mastectomy in patients with benign granular cell myoblastoma.

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