3. Enell, H. & Hahn, B.: Elephantiasis congenita angiomatosa. Acta Paediatr Scand *42:* 416. 1953.
4. Goidanish, I. F. & Campanucci, M.: Vascular Haematomas and Angiodysplasias of the Extremities. Ch. C. Thomas, Springfield, Ill. 1959.
5. Gourie-Devi, M. & Prakash, B.: Vertebral and epidural haemangioma with paraplegia in Klippel Trenaunay Weber syndrome. J Neurosurg *48 (5):* 814. 1978.
6. Klippel, M. & Trenaunay, R.: Du naevus variqueux osteohypertrophique. Arch Gen Med *77:* 804. 1900.
7. Klippel, M. & Trenaunay, R.: Naevus variqueux ostéohypertrophique. J Prat *14:* 65. 1900.
8. Kwaan, H. C.: The pharmacology and use of aminocapnoic acid and aprotinin. Med Clin North Am *56:* 163. 1972.
9. Mullins, J. F., Naylor, D. & Redetch, J.: The Klippel Trenaunay Weber syndrome. Naevus vasculosus osteohypertrophicus. Arch Dermatol *86:* 702. 1962.
10. Petschelt, E.: Zur Klinik, Symptomatologie, Lokalisation, Alter und Geschlechtsverteilung des Naevus vasculosus osteohypertrophicus (Klippel Trenaunay Weber Syndrome). Arch Dermatol Syph *196:* 155. 1953.

Palmo-plantar Keratoderma Associated with Carcinoma of the Bronchus

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Abstract. A 63-year-old man presented with a 15-month history of palmo-plantar keratoderma and was found to have a bronchogenic carcinoma. The implications of this association are discussed.

Key words: Keratoderma; Carcinoma of the bronchus

Many disorders of keratinization are known to be associated with internal malignancy. Exfoliative dermatitis and acquired ichthyosis are particularly linked with lymphoma but have been described with a number of malignancies (12). Bazex's syndrome or acrokeratosis paraneoplastica (1) which is associated with carcinoma of the laryngo-pharyngeal region, may present with keratoderma but usually starts with erythema and psoriasiform scaling which involves the fingers, toes, ears and nose. The keratoderma has a characteristic violaceous colour and the rest of the body may be affected in the latter stages of the disease. The Howel-Evans syndrome (7, 15) constitutes palmo-plantar keratoderma of autosomal dominant inheritance, associated with carcinoma of the oesophagus. Acanthosis nigricans may also present with keratoderma or sometimes with the so-called tripe palm anomaly (2, 3). It has been estimated that over 50% of adults presenting with acanthosis nigricans have an associated neoplasm (5). The acquired form of pachydermoperiostosis may also present with keratoderma and has been described in association with a variety of systemic illnesses and internal malignancies including carcinoma of the bronchus, adenocarcinoma of the lung and mesothelioma (12).

CASE REPORT

History

A 63-year-old male fur liner presented in April 1981 with a 15-month history of gradual thickening of the palms and soles. This developed as isolated areas of involvement which became confluent on palmar and plantar surfaces. He complained of recent painful fissures on the palms and loss of sensation over the tips of his fingers.

Prior to this he had been well and denied any other symptoms. His family history was unhelpful. He smoked 60 cigarettes a day.

Examination

His palms showed gross diffuse hyperkeratosis with a finely corrugated surface (Fig. 1). The palmar creases appeared to be spared but were affected in places by painful fissures. His soles showed relatively minor changes of a similar nature. There was no sparing over the plantar creases. General examination was normal and there were no other signs of acropachy or peripheral neuropathy.

Investigations

Full blood count—normal. ESR 26 mm/h. Chest X-ray revealed a large mass in the left upper lobe (Fig. 2) indicative of carcinoma of the bronchus. Growth hormone levels were normal.

Histopathology

A biopsy from the right palm showed marked compact hyperkeratosis and acanthosis. A remarkable feature was regular "tenting" of the epidermis to create an appearance of pinnacles where there was loss of the otherwise increased granular layer and associated areas of parakeratosis. Prominent dilated capillaries were evident in the papillary dermis.

DISCUSSION

The association of palmo-plantar keratoderma with carcinoma of the bronchus without other clinical

Fig. 1. Left palm. Confluent keratoderma showing finely corrugated surface.

features has been reported on only three previous occasions (8, 9, 10) and is not well documented in dermatological textbooks. Howel-Evans et al. (7) mentioned a case as a personal communication and suggested that the association of neoplasia of the bronchus with keratoderma was in some respects comparable to the genetic syndrome they described, as both bronchus and oesophagus are embryologically derived from the foregut. Two further personal communications of this association have been recorded (4).

Other cases of acquired keratoderma in association with malignancy have been reported (8, 11, 13). These include carcinoma of the oesophagus, metastatic squamous carcinoma, carcinoma of the breast, adenocarcinoma of the lung and carcinoma of the bronchus. The patient with carcinoma of the bronchus described by Millard & Gould (8) also had clubbing suggesting the possibility of pachydermoperiostosis, and additionally showed elevated levels of growth hormone possibly derived from the tumour and responsible for the cutaneous manifestations. Such an increase in growth hormone production has been previously associated with pachydermoperiostosis (14) and furthermore acanthosis nigricans may be encountered in acromegaly (6). Possible hormone production was also suggested in the case decribed by Riddick, Brodkin & Gibbs (11). This patient's keratoderma was associated with adenocarcinoma of the lung but he also presented with gynaecomastia and generalized hyperpigmentation.

In our patient, clubbing was absent and growth hormone levels were normal. The mechanism responsible for the production of keratoderma therefore remains obscure, although ectopic hormone production cannot be excluded.

The association of acquired keratoderma in isola-

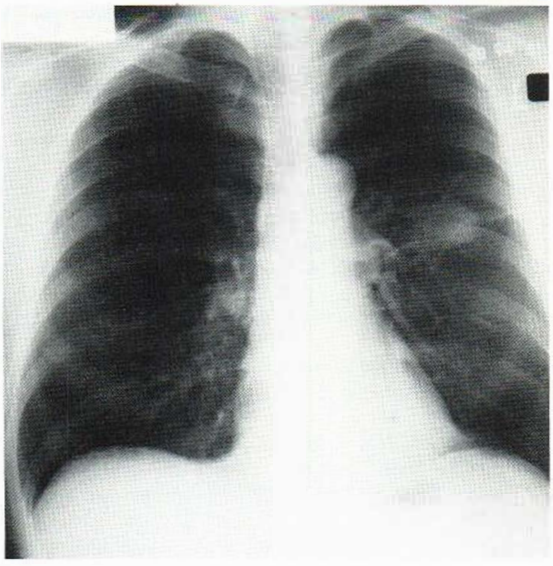

Fig. 2. Chest X-ray. Large tumour mass on left mid-zone.

tion with occult bronchogenic carcinoma and perhaps other malignancies seems undeniable; improvement in the keratoderma following treatment of the lung lesion has been reported (10). The development of acquired keratoderma should consequently prompt thorough investigation for the possible presence of occult neoplasm.

REFERENCES

1. Bazex, A. & Griffiths, A.: Acrokeratosis paraneoplastica. A new cutaneous marker of malignancy. Br J Dermatol *103:* 301, 1980.
2. Breathnach, S. M. & Wells, G. C.: Acanthosis palmaris: tripe palm. A distinctive pattern of palmar keratoderma frequently associated with internal malignancy. Clin Exp Dermatol *5:* 181, 1980.
3. Clarke, J.: Malignant acanthosis nigricans. Clin Exp Dermatol *2:* 167, 1977.
4. Costello, M. J. & Gibbs, R. C.: The Palms and Soles in Medicine, p. 123. Charles C. Thomas, Springfield, Illinois, USA, 1967.
5. Curth, H. O.: Significance of acanthosis nigricans. Arch Dermatol Syph *66:* 80, 1952.
6. Freinkel, R. K. & Freinkel, N.: Dermatology in General Medicine. (ed. Fitzpatrick, Eisen, Wolff, Freedberg and Austen) 2nd ed., p. 1257. McGraw-Hill, New York, 1979.
7. Howel-Evans, W., McConnell, R. B., Clarke, C. A. & Sheppard, P. M.: Carcinoma of the oesophagus with keratosis palmaris et plantaris (tylosis). Quart J Med *107:* 413, 1958.
8. Millard, W. G. & Gould, D. J.: Hyperkeratosis of the palms and soles associated with internal malignancy and elevated levels of immunoreactive human growth hormone. Clin Exp Dermatol *1:* 363, 1976.
9. Parnell, D. D. & Johnson, S. A. M.: Tylosis palmaris et plantaris. Its occurrence with internal malignancy. Arch Dermatol *100:* 7, 1969.
10. Powell, F. & Mackey, J. P.: Bronchial carcinoma and hyperkeratosis palmaris et plantaris. Postgrad Med J *57:* 57, 1981.
11. Riddick, L., Brodkin, R. H. & Gibbs, R. C.: Palmar and plantar keratoderma with hyperpigmentation and gynaecomastia. Report of a case associated with primary adenocarcinoma of the lung. Acta Dermatovener (Stockholm) *51:* 69, 1971.
12. Roberts, S. O. B. & Rook, A.: Textbook of Dermatology (ed. Rook, Wilkinson and Ebling 3rd ed., vol. 2, 2104. Blackwell Scientific Publications, Oxford, 1979.
13. Schwindt, W. D., Bernhardt, L. C. & Johnson, S. A. M.: Tylosis and intrathoracic neoplasms. Chest *57:* 590, 1970.
14. Steiner, H., Dahlbäck, O. & Waldenström, J.: Ectopic growth hormone production and osteoarthropathy in carcinoma of the bronchus. Lancet *i:* 783, 1968.
15. Yesundian, P., Premalatha, S. & Thambiah, A. S.: Genetic tylosis with malignancy: a study of South Indian pedigree. Br J Dermatol *102:* 597, 1979.

Cartilaginous Nevus on the Glabella

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Abstract. Cartilaginous nevus usually occurs in front of the auricle as an accessory auricle and much less frequently on the cheek or anterior part of the neck. We report a case of cartilaginous nevus found on an unusual location, the glabella of the face, in an otherwise normal newborn girl. We think that it was a remnant of the branchial cartilage derived from the first pharyngeal arch of embryonic life.

Key words: Cartilaginous nevus; Developmental anomaly; Glabella

CASE REPORT

A newborn girl was referred to us because of a pedunculated nodule on the glabella. The baby, being otherwise normal, was a second daughter of healthy parents. The delivery was normal after an uneventful pregnancy. There was no family history of developmental or cutaneous malformation.

The nodule was elastic-soft, pedunculated, 3 mm in diameter and 4 mm in height, being located on the glabella (Fig. 1). It was excised totally under local anesthesia and processed for histologic examination. Sections stained with hematoxylin-eosin showed an unremarkable epidermis but there was cartilaginous tissue in the deep portion of the dermis (Fig. 2).

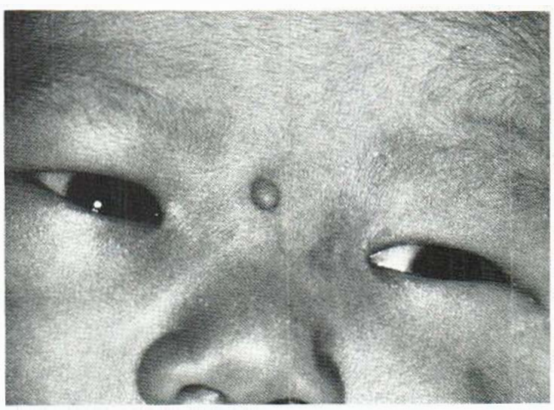

Fig. 1. A pedunculated nodule on the glabella.