(Stevens *et al.* 1975, Derso *et al.* 1978). However, in the present study there is at least circumstantial evidence that the father was the source; he died in China from liver disease at the age of 63 whereas the mother is alive and apparently well (untested) at the age of 83. Tong *et al.* (1979) also noted this pattern of paternal-infant transmission in Chinese-Korean families living in Los Angeles, but the mechanism is unexplained. There may be racial differences, for in a study in West Africans there was a much higher incidence of HBsAg-positive mothers (71%) than fathers (0%) in patients with HCC (Larouze *et al.* 1976).

In the present study eAg was detected in one and anti-HBe in the other brother with HBsAg and HCC. In one early study, none of 5 patients with HCC had eAg whereas all had anti-HBe (Eleftheriou *et al.* 1975), but in recent larger studies the prevalence of both eAg and anti-HBe have been lower than would be expected in carriers of HBsAg (Szmunn 1978, Maupas *et al.* 1977). The reasons for this are not known, but may be related to the low titres of circulating surface antigen in many of these patients which may make eAg difficult to detect (Beasley *et al.* 1977).

It is hoped that hepatitis B vaccines currently undergoing trials will provide a means of preventing these family tragedies in the future. At present it seems reasonable to screen the families of affected patients, particularly those from South East Asia, in the hope that earlier diagnosis of HCC may improve prognosis, but this is as yet unproven.

Acknowledgments: We are grateful to Dr I M Murray-Lyon and Dr Viola Luis for advice on this case, to Dr F Paradinas for the histology, and to Dr J J Van Dyk, Verwoerd Hospital, South Africa, for providing clinical details and histology on patient WT. Hepatic artery embolization and chemotherapy in patient PT were carried out in the Liver Unit, King's College Hospital, London.

References

- Bagshawe A F, Gacengi D M, Cameron C H, Dorman J & Dane D S
(1975) *British Journal of Cancer* **31**, 581-584
Beasley R P, Trepo C, Stevens C E & Szmunn W
(1977) *American Journal of Epidemiology* **105**, 94-98
Denison E K, Peters R L & Reynolds T B
(1971) *Annals of Internal Medicine* **74**, 391-394
Derso A, Boxall E H, Tarlow M J & Flewett T H
(1978) *British Medical Journal* **i**, 949-952
Eleftheriou N, Thomas H C, Heathcote J & Sherlock S
(1975) *Lancet* **ii**, 1171-1173
Hagstrom R M & Baker T D
(1968) *Cancer* **22**, 142-150
Johnson P J, Wansbrough-Jones M H, Portmann B *et al.*
(1978) *British Medical Journal* **i**, 216
Kaplan L & Cole S L
(1965) *American Journal of Medicine* **39**, 305-311

- Kew M C, Desmyter J, Bradburne A J & Macnab G M
(1976) *Gastroenterology* **71**, 915 (abstract)
Larouze B, London W T, Saimot G, Werner B G, Lustbader E D, Payet M & Blumberg B S
(1976) *Lancet* **ii**, 534-538
Maupas P, Coursaget P, Goudeau A, Drucker J, Sankale M, Linhard J & Diebolt G
(1977) *Annals of Microbiology* **128A**, 245-253
Ohbayashi A, Okochi K & Mayumi M
(1972) *Gastroenterology* **62**, 618-625
Peters R L, Afroudakis A P & Tatter D
(1977) *American Journal of Clinical Pathology* **68**, 1-7
Steiner P E
(1960) *Cancer* **13**, 1085-1166
Stevens C E & Beasley R P
(1976) *Nature (London)* **260**, 715-716
Stevens C E, Beasley R P, Tsui J & Lee W C
(1975) *New England Journal of Medicine* **292**, 771-774
Szmunn W
(1978) *Progress in Medical Virology* **24**, 40-69
Szmunn W, Harley E J & Prince A M
(1975) *American Journal of the Medical Sciences* **270**, 293-304
Szmunn W, Prince A M, Diebolt G, Leblanc L, Baylet R, Masseyeff R & Linhard J
(1973) *American Journal of Epidemiology* **98**, 104-110
Szmunn W, Stevens C E, Ikram H, Much M I, Harley E J & Hollinger B
(1978) *Journal of Infectious Diseases* **137**, 822-829
Tong M J, Weiner J M, Ashcavi M W & Vyas G N
(1979) *Cancer* **44**, 2338-2342
Trichopoulos D, Tabor E, Gerety R J, Xirouchaki E, Sparros L, Munoz N & Linsell C A
(1978) *Lancet* **ii**, 1217-1219
Vyas G N
(1974) *Nature (London)* **248**, 159-160
Wheeler P G, Melia W, Dubbins P, Jones V, Nunnerley H, Johnson P & Williams R
(1979) *British Medical Journal* **ii**, 242-244

Migratory erythema and eosinophilic cellulitis associated with nasopharyngeal carcinoma¹

D Murray MRCP

R A J Eady MRCP

St John's Hospital for Diseases of the Skin
Lisle Street, London WC2H 7BJ

Migratory erythemas are rare markers of internal malignancy. We report a case of a young woman with a nasopharyngeal carcinoma who presented with a migratory erythema. This association has not previously been described.

Case report

A 17-year-old female of Irish descent presented with a three-month history of an itchy, figurate and erythematous rash on the trunk and proximal parts of the limbs (Figure 1). In 1978 a

¹Case presented to Section of Dermatology, 17 April 1980. Accepted 11 June 1981

Figure 1. View of upper legs to show figurate erythema

mastoidectomy had been performed because of repeated infection and drainage from the right ear. Defining the edge of the eruption and its subsequent examination twelve hours later showed it to be migratory. Within the advancing urticated margin the skin had a yellow to green colour. On histopathological examination there was a mixed inflammatory infiltrate in the mid and upper dermis in which eosinophils were prominent. In some areas (Figure 2) 'flame figures' comprising clumps of extruded eosinophil granules (Wells & Smith 1979) were seen. The

Figure 2. Skin biopsy with infiltrate of eosinophils and adjacent 'flame figure'. ($\times 100$)

presence of bilateral cervical lymphadenopathy led to examination under anaesthetic and the discovery of a mass in the post-nasal space. Multiple biopsies were obtained which histopathologically showed poorly defined areas of pale, undifferentiated tumour cells with a pronounced surrounding lymphocytic infiltrate (Figure 3).

Figure 3. Section of tumour showing pale undifferentiated carcinoma and darkly staining lymphocytic infiltrate. ($\times 48$)

The following investigations were carried out: Hb 12.6 g/dl, WBC $8.8 \times 10^9/l$ with 42% neutrophils, 31% lymphocytes, 1% monocytes and 25% eosinophils (absolute eosinophil count $2.2 \times 10^9/l$); ESR 22 mm in the first hour; C3 1.55 g/l (normal range 0.75–1.75); C4:0.28 g/l (normal range 0.14–0.54); C1 esterase inhibitor 0.36 g/l (normal range 0.18–0.26); Circulating immune complexes were detected using a platelet aggregation technique. The following tests were normal or negative: antinuclear antibodies, antimitochondrial antibodies, anti-smooth muscle antibodies, sheep cell agglutination, stools for ova, cysts and parasites, toxoplasma dye test 1/16, Paul Bunnell test, tanned cell haemagglutination for HBs antigen, direct immunofluorescence of lesional and uninvolved skin using standard commercially available fluorescein labelled rabbit anti-human IgG, IgG, IgA and C3, indirect immunofluorescence using human skin as substrate, liver function tests and immunoglobulins.

Chemotherapy using vincristine, bleomycin, methotrexate and 5-fluorouracil was given over the first four weeks combined with high doses of radiotherapy which were continued over three months. A total of 6600 rad to the midline face and 6060 rad to the neck were given using a Cobalt unit followed by a further 1000 rad using a linear accelerator. There was rapid reduction in the size of the tumour, resolution of the cervical lymphadenopathy and fading of the rash leaving a figurate pattern of postinflammatory

hyperpigmentation. Examination under anaesthesia five months after completion of treatment revealed no sign of recurrence. She remains well.

Discussion

Figurate and migratory erythemas are recognized markers of internal malignancy. Erythema gyratum repens is probably the most notable example. Skolnick & Mainman (1975) reviewed 21 cases in the literature and found a malignancy associated with all of them. A further 4 cases were included by Harrison (1979) in a review of the annular erythemas. Bronchial carcinoma was the most frequent neoplasm, occurring in 44% of cases.

The association of other types of migratory erythema with internal malignancy is less clear. Terminological confusion remains, but if discussion is limited to cases of figurate and migratory erythemas of the type usually included under the title 'erythema annulare centrifugum' (EAC), then such an association, if it exists, must be extremely rare. Bönninger & Happle (1977) described a case of acute myeloid leukaemia and EAC, but White & Perry (1969) found no increased incidence of malignancy in a study of 113 cases of annular erythema. Nasopharyngeal carcinoma is an uncommon neoplasm in the Western world, but is exceptionally common in the Far East and North Africa. It predominately affects males, particularly in the third and fourth decades. In white populations the tumour is rare, and comprises only 0.25% to 0.5% of all malignancies (Batsakis 1974). It is derived from nasopharyngeal epithelium and often has lymphocytes as a prominent component, reflecting the normal abundance of lymphocytes in the nasopharynx.

In those regions with a high incidence, nasopharyngeal carcinoma has been shown to be related to the Epstein-Barr virus by viral antibody studies (Henle *et al.* 1970) and by the detection of virus-specific DNA sequences in tumour cells (Wolf *et al.* 1975). In areas where the tumour is uncommon, this relationship is less clear (de Schryver *et al.* 1974). We were unable to perform Epstein-Barr viral studies in our patient.

The rapid resolution of the rash with treatment of the primary tumour supports a relationship between the two but the mechanism must remain conjectural. Holt & Davies (1977) proposed an immunological pathogenesis for erythema gyratum repens. The presence of circulating immune complexes, perhaps derived from the combination of tumour antigen and host antibody, is suggestive of such a process in this case. These complexes may have been deposited in

the skin but rapidly removed, accounting for the negative immunofluorescence. The migratory nature of the rash would support such a concept. Alternatively, shared antigen on tumour and skin cells might have led to an immunological response directed at both.

The tissue eosinophilia with associated 'flame figures' comprises part of a histological picture described as 'eosinophilic cellulitis' by Wells & Smith in 1979. The significance of the eosinophil infiltrate is unknown but could be consistent with an 'allergic' or an immunological basis for the cutaneous reaction.

References

- Batsakis J G (ed)
(1974) *Tumours of the Head and Neck*. Williams & Wilkins, Baltimore; p 128
- Bönninger F & Happle P
(1977) *Zeitschrift für Hautkrankheiten* 52, 77
- de Schryver A, Klein G & Henle W
(1974) *International Journal of Cancer* 13, 319-325
- Harrison P G
(1979) *International Journal of Dermatology* 18, 282-270
- Henle W, Henle G & Ito H C
(1970) *Journal of the National Cancer Institute* 44, 225-231
- Holt P J A & Davies M G
(1977) *British Journal of Dermatology* 96, 343-347
- Skolnick M & Mainman E R
(1975) *Archives of Dermatology* 111, 227
- Wells G C & Smith N P
(1979) *British Journal of Dermatology* 100, 101-109
- White J W & Perry H O
(1969) *British Journal of Dermatology* 81, 641
- Wolf H, Zur Hausen H & Klein G
(1975) *Medical and Microbiological Immunology* 161, 15-21

A 'pennanidal' sinus¹

D Elliot MA FRCS

S Quyyumi MB BS

Southend Hospital, Essex SS0 0RY

The origin of hairs found in sacrococcygeal pilonidal sinuses and their role, if any, in the formation of these sinuses are uncertain. A case is reported which provides unique and conclusive evidence that penetration of a sacrococcygeal pilonidal sinus by a foreign body is possible.

Case report

A 19-year-old girl presented with a five-day history of throbbing pain in the sacral area. The patient had previously been completely fit, with no significant medical history. In particular, she gave

¹Case presented to Clinical Section, 13 February 1981.
Accepted 11 June 1981