ADENOCARCINOMA OF THE OVARY PRESENTING AS ACANTHOSIS NIGRICANS

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ACANTHOSIS nigricans is a rare but nevertheless important skin disease, the significance of which lies in the fact that cases showing this disorder for the first time in adult life are nearly always found to have an internal neoplasm.

Since Pollitzer (1891) first described the condition many cases of acanthosis nigricans and carcinoma have been reported, but its association with primary ovarian neoplasm appears to be extremely uncommon. After a fairly exhaustive search of the literature we have been able to discover only 2 such cases (Soetomo, quoted by Curth, 1943; Meinrenken, 1953).

The case reported here shows the following points of interest:

(1) It is a further example of the combination of primary ovarian growth and acanthosis nigricans.

(2) In the absence of the skin manifestations ovarian disease would not have been suspected.

(3) Hair growth of lanugo type was present over the face and neck, a feature only once previously reported in cases of acanthosis nigricans (Morris, 1894).

CASE HISTORY

M.W., a housewife, aged 56, was quite well until October, 1955 when she noticed a rough area behind the right ear. This was excised and proved to be a simple wart. About the same time numerous warts appeared on her arms, legs and trunk. During the next few months her cheeks and tongue began to feel dry and sore, and at times her eyes were irritable and watered excessively. Her hands and to a lesser extent her feet became thickened and yellow, and her finger nails brittle and deformed. She also discovered that the skin around the anus was becoming thickened, rough and darker in colour. In addition to these changes she noticed a fine growth of hair on her face and neck, while at the same time her scalp hair seemed to be thinning. Her general health was excellent and since the menopause 6 years before she had had no abdominal pain, bleeding or vaginal discharge.

EXAMINATION

Examination revealed a well-preserved lady of late middle age, who showed a fine downy growth of hair confined to the face, forehead and neck. The hair was of lanugo type and measured 1 to 2 mm. in length. Apart from some slight diffuse hair-thinning the scalp showed no abnormality. The pubic hair was rather sparse but was of normal female distribution.

Multiple warts of the common and seborrhoeic types were scattered over the arms and legs, while in the axillae and groins there were a number of pedunculated papillomata.

The palms of the hands and the palmar surfaces of the fingers were dry, coarsely hyperkeratotic and of a striking yellow colour (Fig. 1). Similar but less marked changes were present on the soles of the feet.

The finger nails were brittle and showed definite koilonychia.

In the perianal area and extending forward along the perineum to the fourchette the skin showed the changes typical of acanthosis nigricans, being thickened, papillomatous and of a brownish-black colour (Fig. 2).

The dorsal surface of the tongue was rough and granular showing deep transverse fissuring. Raised rough granular plaques were also present along the inner surface of both cheeks and extended forwards to involve the lips.

No masses could be felt on abdominal palpation, but some free fluid was thought to be present in the peritoneal cavity. Pelvic examination revealed nodules in the pouch of Douglas.

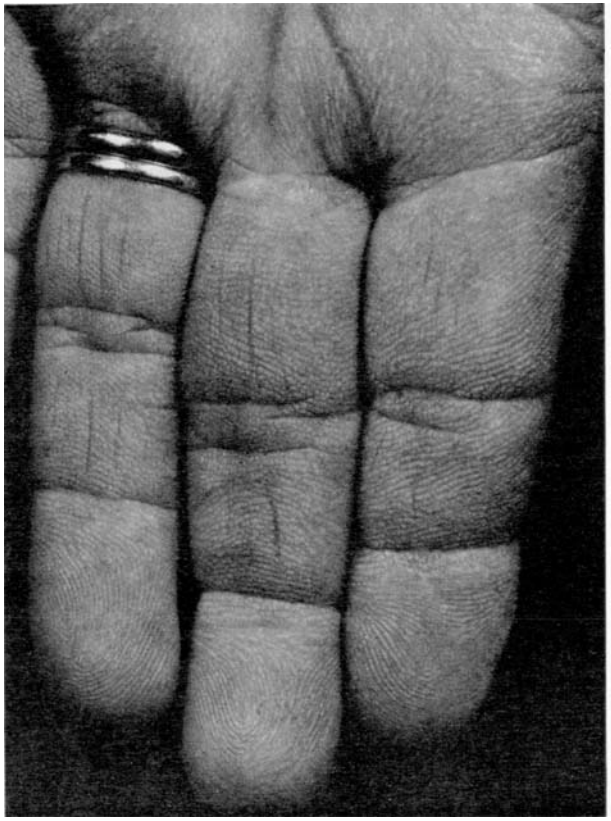

FIG. 1

The fingers of the left hand showing hyperkeratosis.

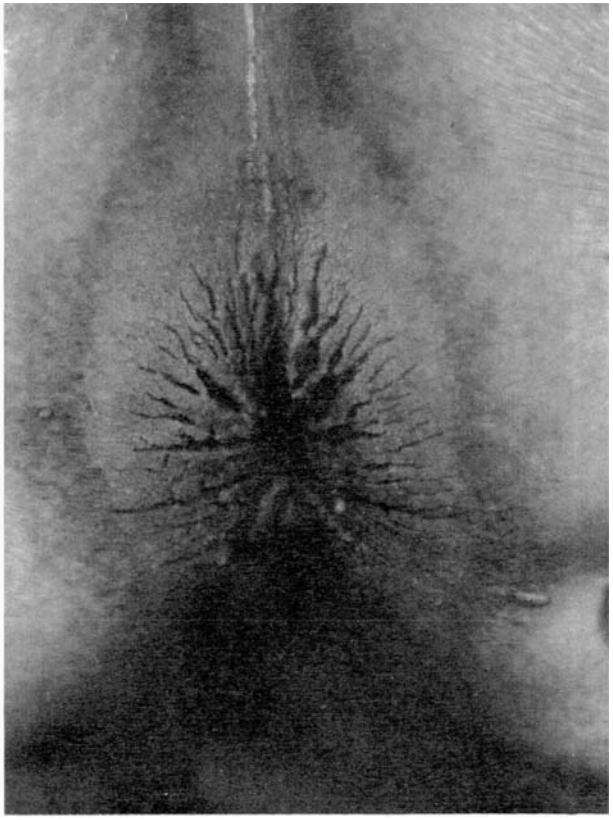

FIG. 2

The perianal area showing the typical skin changes of acanthosis nigricans.

No abnormalities were detected in the heart, lungs or nervous system.

Investigations

The blood picture, X-ray of the chest, barium meal and enema were all within normal limits and occult blood tests were negative on three occasions.

Estimations of the urinary 17-ketosteroids and 17-ketogenic steroids gave readings of 2·5 mg. and 3·5 mg. per 24 hours respectively.

A biopsy was taken from the perianal skin and this showed acanthosis, papillomatosis and hyperkeratosis. In some areas there was a slight increase in the pigment of the basal cell layer and in the upper layers of the corium there was a scattered inflammatory infiltrate. The histological appearance was compatible with a diagnosis of acanthosis nigricans.

Treatment and Progress

On 13th June, 1956 laparotomy (Mr. Clayton) was performed and a papilliferous cyst was removed from the right ovary. The peritoneal cavity contained free fluid and metastases were found in the pelvis. Secondary deposits were also present in the para-aortic and omental lymph glands. No other metastases were detected and the stomach and suprarenals appeared normal.

The patient's post-operative course was uneventful but apart from some slight flattening of the buccal plaques and some decrease in the amount of pain when eating there was no obvious change in the skin lesions.

Deep X-ray therapy to the pelvic area was started on 4th July, 1956 and the treatment completed on 29th August, 1956, a total dose of 5,300 r having been given. During this treatment the patient developed fairly severe radiation sickness and diarrhoea.

When last seen on 8th October, 1956 new warts were still developing but a number of the old ones had flattened and a few had disappeared. There had been some increase in the facial hair, but the skin of the hands and the perianal area had become slightly smoother and less thickened. The patient's general condition had obviously deteriorated and she complained of poor appetite, loss of weight, abdominal pain and vomiting.

Discussion

Acanthosis nigricans itself is a benign skin condition which may appear for the first time either in adult life (adult type) or in childhood (juvenile type). In the former case it is nearly always associated with an internal carcinoma. The juvenile form of acanthosis nigricans appears before puberty and may show an asymmetrical distribution. It is only rarely associated with carcinoma. In contrast to the adult variety other members of the family may be affected. In spite of these differences it is often impossible to distinguish the 2 types clinically or histologically. Each variety accounts for about 50 per cent of the reported cases. The type of growth associated with the adult form of acanthosis nigricans is nearly always an adenocarcinoma and metastases are usually present by the time the diagnosis is made. In most cases the neoplasm and the acanthosis nigricans are noticed at the same time, but the skin manifestations may precede the discovery of the growth or may only make their appearance after the removal of the primary tumour. Although temporary improvement may occur following treatment of the neoplasm no permanent cure has been reported. Over 90 per cent (Curth, 1943) of the adenocarcinomata originate within the abdomen, the stomach being the commonest site. The combination of acanthosis nigricans with primary ovarian growth seems to be very rare. In a review of the literature in 1943 Curth mentioned one such case and we have only been able to find one other (Meinrenken, 1953). Neither of these cases was reported from this country.

The present case shows many of the typical features of acanthosis nigricans, namely hyperkeratosis of the palms and soles, multiple warts and papillomata, thickening of the buccal mucosa and changes in the finger nails. The pigmented warty thickening in the perianal area is perhaps the most characteristic change. Other sites such as the neck, axillae, groins and the flexor surfaces of the knees and elbows are often similarly affected. These various features taken individually might well be dismissed as being of little consequence, but collectively make up a characteristic picture which in the adult should suggest to the physician the possibility

of malignant disease, even in the absence of symptoms.

The presence of downy lanugo hair on the face and neck in this case is of considerable interest because it is not one of the usual features of acanthosis nigricans and as far as we are aware only one such case has previously been reported (Morris, 1894). The growth of hair was much greater than that sometimes observed in women around the menopause. Widespread fine downy hair is known to occur in severe cases of anorexia nervosa and malnutrition, but the present case showed neither of these states. There was no evidence of any known endocrine upset, and in particular there was nothing to support a diagnosis of virilism. Excessive growth of lanugo hair appearing in adult life has also been noted by Lyell and Whittle (1951) following cystectomy for carcinoma of the bladder, and by Le Marquand and Bohn (1951) following gastrectomy for peptic ulceration. In neither of these cases was there any evidence of acanthosis nigricans.

The cause of the abnormal hair growth in the present case is not clear but the fact that it appeared at the same time as the other manifestations of acanthosis nigricans suggests a relationship between them. It is tempting to postulate that both the acanthosis nigricans and the hair growth may be a response to some abnormal substance produced by the ovarian carcinoma, although it must be admitted that we have no proof of the existence of such a product.

Summary

A case of adenocarcinoma of the ovary presenting with the skin manifestations of acanthosis nigricans is reported. The rarity of this combination is stressed and the diagnostic significance of these skin lesions appearing for the first time in adult life is emphasized. Attention is drawn to the unusual association of acanthosis nigricans with excessive lanugo hair over the face and neck. Although no satisfactory cause for this hair growth was found a possible mechanism is suggested.

Acknowledgments

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