

MULTIPLE METASTASIZING SWEAT GLAND CARCINOMAS

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Cancer of the skin rarely develops from sweat gland epithelium. Jacobson *et al.* (2) in reviewing the literature up to 1959 found that 33 cases of metastasizing sweat gland carcinoma had been published. Subsequently 5 further cases have been published (3, 5, 7, 8, 10). A common feature of all cases is the development of only a single primary tumor. We therefore find it of interest to report a case characterized by the development of several independent sweat gland carcinomas followed by hematogenous and lymphogenous spread.

Case Report

A 58-year-old woman had no history of previous skin diseases or abnormalities of sweat secretion. In January 1966 a subcutaneous intumescence was found in the epigastric region and 6 weeks later another over the sternum. On admission to the hospital 25th March, 1966 blood examinations showed: Hb 14 g% and ESR 33 mm/h. Gynecological examination showed atrophy of the vaginal epithelium and the uterus. Adnexa were normal.

Excision was made of the two intumescences, one of which measured 3×2×2 cm, the other 2×1×1 cm. They were both located profoundly in the corium on the subcutaneous border. The histological examination of the intumescence revealed adenocarcinomas of identical structure, derived from sweat gland epithelium. Shortly afterwards a new tumor appeared under the left breast. It was excised and showed identical histological structure. On July

17th, 1966, the patient was re-admitted due to the outbreak of 7 additional tumors, all of which were excised, all of them adenocarcinomas, derived from sweat gland epithelium. On the fourth admission on September 14th, 1966, 9 new tumors and an intumescence in the right axilla were excised. Histologically they were found to be sweat gland adenocarcinomas and the last from the axilla to be a lymph node metastasis of adenocarcinoma, same type. The patient also complained of soreness over the left posterior iliac spine, but radiological examination did not reveal any bone metastases. X-ray therapy, however, gave relief. During the following months excision was performed on 11 new tumors in 3 periods. Thus, eleven months after the appearance of the two first tumors the total number of tumors reached 28.

Estrogen therapy (Stilboestrolum 5 mg×3 per day) was initiated on December 1st, 1966. Thereafter no further tumors developed, but during the following weeks a progressive, general weakness set in. Areas of rarefaction, suggesting bone metastases, were demonstrated radiologically in thea cranii. Psychically the patient grew apathetic, and spells of confusion and hallucination occurred. A right-sided homonymous hemianopsia developed and EEG indicated a focus in the left temporal lobe. Owing to the progressive weakening and difficulties of peroral medication, hormonal therapy was discontinued after 1 month. During the last month the patient remained in severe cachexia and exitus occurred 15 months after the outbreak of the first two tumors.

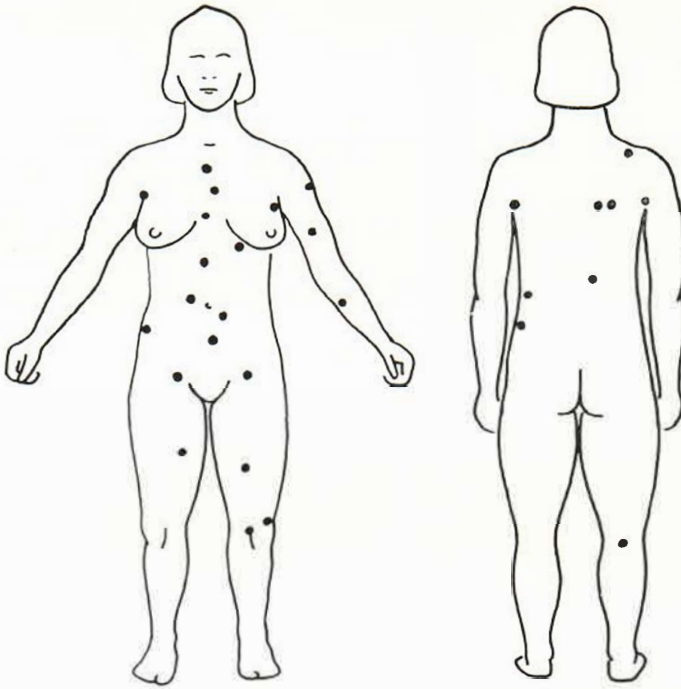


Fig. 1. Distribution of the tumors

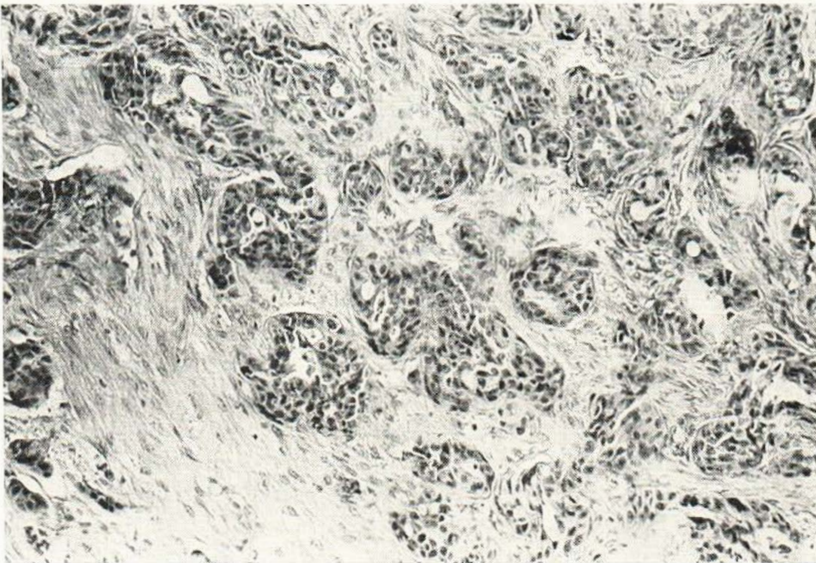


Fig. 2.

Fig. 2-4. Photomicrographs of tumor tissue. Magnification 100-400-700X.

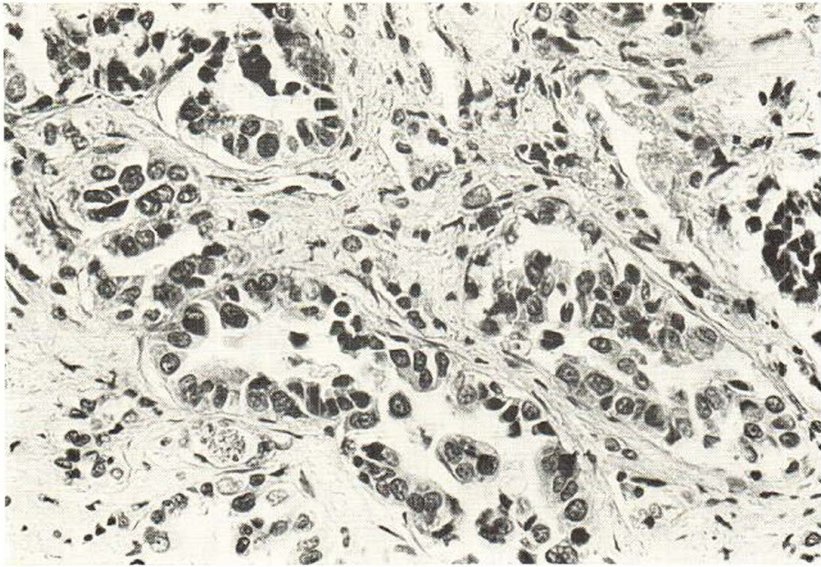


Fig. 3.

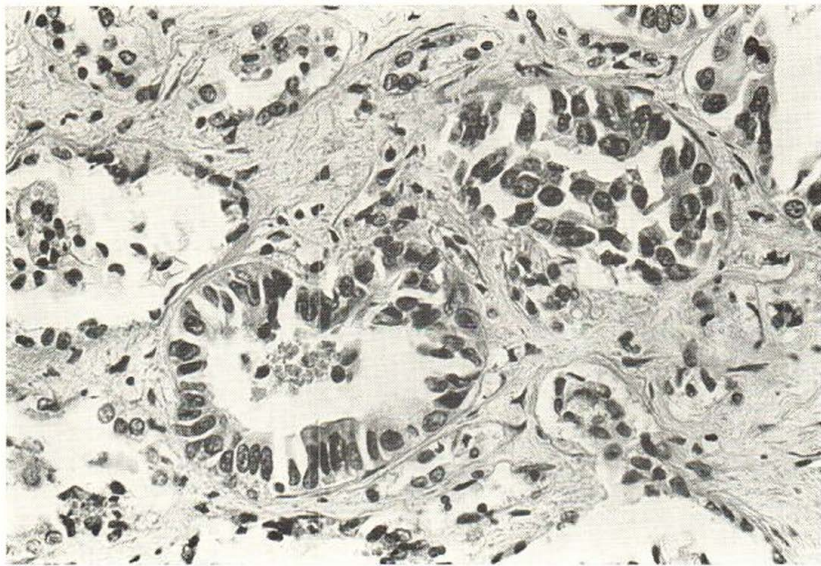


Fig. 4.

Histological examination. The excised skin tumors showed a uniform picture. Neoplastic tissue was found profoundly in the corium and subcutis. Its closely arranged or confluating gland imitations were narrow or slightly dilated and very irregular. They were composed of cylindrical, slightly eosinophilic epithelial cells containing some cytoplasm and measuring 10 to

35 μ . The nuclei with diameters of 5 to 9 μ were chromatin-rich and slightly polymorph with distinct nucleoli. The atypical epithelial cells were arranged in one or several layers. The cells sometimes formed irregular spines. Profases and abnormal mitoses were observed. To a varying degree neutrophil leucocytes, monocytes and lymphocytes infiltrated the pervaded, dense or

flaccid stroma and fatty tissue. Histological diagnosis: Adenocarcinoma and carcinoma solidum derived from apocrine glands.

Autopsy. Brain: Anteriorly in the left occipital lobe a yellow-white, solid or more flaccid process was found, extending up to the surface and centrally to thalamus and hypothalamus. The process measured 3 to 4 cm. No abnormalities were observed in cerebellum, pons or brain-stem. Adrenal glands: The normal structure was almost replaced by dense, yellow-white, neoplastic tissue. Left kidney: Close to the surface white infiltrative processes were found. The supplementary histological findings were as follows: Specimens of brain tissue showed metastases of the adenocarcinoma, described type. The picture was complicated by pronounced necrobiosis and chronic inflammation. The adrenal tissue samples showed that little remained of the cortex. The vacuolisation of zona fasciculata was negligible.

Discussion

The case described is apparently the first in which a multiple appearance of malignant sweat gland tumors has been observed. The clinical course indicates that the tumors developed independently, since they all appeared prior to the signs of hematogenous spread.

Multiple development of carcinomas is a well-known phenomenon. In his monograph Moertel (4) points out that such cases demonstrate that carcinogenesis is not an isolated biological occurrence, but rather the result of a protracted carcinogenous stimulus of a susceptible tissue, which does not result in unicellular disease, but in an affection of a larger section of an organ system. Through a well-defined premalignant stage one or more tumors develop. Thus it is reasonable to interpret the course of the present case as a wide-spread affection of the sweat gland population with the tumors as external symptoms.

Other types of multiple skin carcinomas are also known. Thus exposure to arsenic may cause a multiple and wide-spread outbreak of basocellular carcinomas together with hyperkeratoses and Bowen's disease

(6). The same is known to appear following medical application of arsenic and the use of drinking water contaminated with arsenic. Moreover multiple outbreaks of basocellular carcinoma after long exposure to sunlight are well known. In their recent review, Gorlin *et al.* (1) describe a hereditary syndrome involving the simultaneous development of multiple basocellular carcinomas, bone abnormalities and jaw cysts. The multiple development of benign sweat gland neoplasms is not infrequent. This applies to syringomas as well as to cylindromas (9).

The distribution of the tumors of the present case is remarkable. It appears from fig. 1, that they were located predominantly on the trunk and on the proximal parts of the extremities. In their review, Jacobson *et al.* (2) found, that 39 per cent of the published cases of metastasizing sweat gland carcinomas were primarily attached to the head, 27 per cent to the extremities, especially to their peripheral parts, and the rest to the axillas, external genitalia and areolae. No carcinomas arose on the other parts of the trunk. They moreover found lymphogenous spread in all cases and in 48 per cent of the cases also hematogenous spread, particularly to the lungs and the bones.

SUMMARY

In the present paper there is described a case of multiple sweat gland carcinomas, metastasizing to lymph node, to the brain, adrenal glands and kidneys.

REFERENCES

1. Gorlin, R. J., Vickers, R. A., Kelln, E. and Williamson, J. J.: Multiple Basal Cell Nevi Syndrome. *Cancer* 18: 89-104, 1965.
2. Jacobson, Y. G., Rees, T. D., Grant, R. and Fitchett, V. H.: Metastasizing Sweat-Gland Carcinoma. *Arch. Surg.* 78: 574-81, 1959.
3. Mincy, J. E. and Lee, L. C.: Intracranial Metastasis of Sweat Gland Carcinoma. *J. Neurosurg.* 25: 564-66, 1966.
4. Moertel, Ch. G.: *Multiple Primary Malignant Neoplasms*. Springer Verlag, Berlin, Heidelberg, New York, 1966.

5. Paine, C. H.: Very Late Recurrence of a Previously Excised Sweat Gland Carcinoma. *Brit. J. Cancer* 19: 263-67, 1965.
6. Sanderson, K. V.: Arsenic and Skin Cancer. *Trans. St. Johns Hosp. Derm. Soc.* 49: 115, 1963.
7. Seitchik, M. W.: Adenocarcinoma of Eccrine Origin. *J. Alb. Einstein Med. Center* 13: 71-75, 1965.
8. Shenoy, Y. M. V.: Malignant Perianal Papillary Hidroadenoma. *Arch. Derm.* 83: 965-69, 1961.
9. Tulenko, J. F. and Conway, H.: An Analysis of Sweat Gland Tumours. *Surg. Gynec. Obstet.* 121: 343-48, 1965.
10. Wilde, J. and Bader, G.: Zur Klinik und Morphologie des metastasierenden Schweißdrüsenkarzinoms. *Brunn Beitr. Klin. Chir.* 206: 436-47, 1963.