METASTATIC CARCINOMA OF THE SKIN
Erysipelas carcinomatosum

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ABSTRACT

Widely spread erythema of the skin is sometimes clinically non-diagnostic. In the case of our 54 year old female patient the skin biopsy from an erythema which was expressed on the anterior and lateral surfaces of the neck, in the left clavicular and sternal areas, revealed nests of malignant epithelial cells in the dermis. The primary tumor was detected by an analysis of bioptic material obtained by a needle biopsy from a palpable tumor in the left breast: groups of malignant epithelial cells. An X-ray film enclosed islets of homogenisation and rarefaction in the lumbosacral segment of the spine and pelvic bones. Due to widely spread metastases the patient was transferred to the Institute of oncology for cytostatic treatment.

KEY WORDS
skin metastases, erysipelas carcinomatosum, breast cancer, bone and lymphatic nodes metastases.

INTRODUCTION

Metastatic malignant skin tumors are relatively uncommon event in most dermatological practices. They are defined by RA Mackie as follows: A tumor formed by malignant cells originating from another site and frequently from another tissue which are conveyed to the skin by the blood or lymphatic circulation (1).

Metastasis is not a simply tumor cells breaking off from the primary neoplasm and lodging in a distant tissue, but rather a complicated biologic process comprising six conceptual steps (2): 1.) detachment from primary tumor, 2.) invasion and introversation of these cells into a vessel, 3.) passage through the blood or lymphatic circulatory system, 4.) stasis in a vessel at the recipient bed, 5.) extravasation through the vessel wall and invasion of the recipient tissue and 6.) proliferation within this tissue. The above listed steps are rather complicated biologic processes, one of them is the activity of specific receptors on tumor cells which facilitate the attachment to the matrix or basement membrane components of a capillary vessel. Some highly aggressive actively invading tumor cells express laminin receptors in quantities that are 50 times normal (3). Hydrolytic enzymes then degrade the matrix and thus enable a successful intravasation and circulation in the lymph and blood vessels. The mechanism of stasis may be a random tumor cell thrombosis or a site specific attachment in which the tumor cell selectively adheres to a specific organ's vessel wall. It is believed that for the extravasation and invasion of the

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malignant cells into the target organ mechanisms similar to
the intravasation are in operation (4).

The proliferation of the tumor cells in the recipient tissue
again depends on the activity of various mechanisms (5). First
to be mentioned are local growth factors, mitogenic
factors as well as others, including an altered sensitivity to
these factors. Such proliferation may be further enhanced by
the ability of the tumor cells to produce their own growth
factors, the so-called autocrine growth factors (6), which
enable tumor cells to grow in distant organs without the
presence of other local growth factors. The ingrowth of a rich
vascular supply net which makes possible the growth of
micrometastases is provoked by angiogenic factors. Some
tumors have been found capable of releasing such factors (7).
A special problem present the site specific metastases (8).

CASE REPORT

The 54-year old female patient who had a history of
diabetes lasting for 2 years came for consultation to the
Department of dermatology of the Medical school in Zagreb
in February 1990 and was immediately admitted in order to
carry out the necessary detailed clinical investigation. Seven
months earlier she noticed a swelling of the left side of the
neck and later on an erythema appeared at the same site. The
erythema spread progressively to the anterior part of the neck
as well as towards the sternal region. Otherwise her medical
history was uneventful. Before coming to the Department of
dermatology she was admitted to a local hospital where the
tentative diagnosis of malignant lymphoma was made. The
patient was in good general physical condition and did not
complain of serious health problems.

At the time of admittance the following skin changes were
observed: the skin of the sternal region, of the left clavicular
region as well as of the entire anterior and left aspects of the
neck was diffusely erythematosus, slightly edematous and
infiltrated (fig. 1 and 2). The altered surface was not sharply
demarcated from the normal skin. The left breast was enlarged
as compared to the right side. The lymphatic glands of the
size of hazel nuts were palpable in her left axilla.

The X-ray examination revealed in the lower part of the
thoracic spine non-homogeneous foci suspected to be
secondary manifestations. In the lumbosacral segment of the
spine there were also expressed spots of a non-homogeneous
bone structure including small areas of sclerosis and
rarefaction which were even more similar to osteolytic and
osteoplastic manifestations characteristic of a secondary
involvement of the basic neoplastic process. X-ray film of the
pelvic bone as well as os ischii and os pubis included also
areas of non-homogeneous bone structure and a larger non-
homogeneous area in the vicinity of the right sacroiliacal
joint (fig. 3).

Such non-homogeneous islets speak strongly for secondary
manifestations of the basic malignant process.

Laboratory tests revealed increased glucose fasting values
of 12.1 and later 8.3 mmol/l, increased values of alkaline
phosphatase 323 IU and on repeated assaying 381 IU (normal
values up to 40 IU), as well as increased values of the
carcinoembryonic antigen of 13 ng/l (normal values up to 3
ng/l). There was also a disproteinemia, but other laboratory
tests were within the normal limits. The gynecologists
observed only a right side chronic adenitis.

Fig. 3 X-ray film of the lumbosacral spine and pelvic bones.
Spots of homogenisation and rarefaction characteristic for
secondary manifestations of the basic malignant process.

Pathohistology of the biopsied erythematous skin disclosed
islets of carcinomatous epithelial cells inside the dermis
which fact confirmed the diagnosis of metastatic carcinoma
of the skin (fig. 4). A needle biopsy of the palpable tumor in
the left breast revealed a number of atypical epithelial cells,
which were immediately recognized by the cytologist as
malignant. (fig. 5). By a needle biopsy of the lymphatic node
from the neck groups of malignant epithelial cells were
detected (fig. 6). The bone marrow investigation from the
iliac crest revealed also groups of malignant epithelial cells
(fig. 7).

DISCUSSION

Dermatologists do not encounter skin metastases very
frequently, there are however opinions according to which
this should happen in 3 - 4 % of malignant tumors (9).
Evidently the preconditions for a successful growing of metastases mentioned in the introduction are not often present in the skin. The most frequent primary sites are breast, stomach, lung, uterus, large intestine, kidney, prostate gland, ovary, liver and bone (1). The commonest skin tumor to metastasize into the skin is malignant melanoma.

Carcinoma of the breast provokes sometimes an erythema of the skin which can be more or less similar to erysipelas. Such rare skin lesions are mentioned in the literature as erysipelas carcinomatous (10). The skin lesions in our patient were identical with this description.

In the case of our patient the primary site of the carcinoma was the breast which fact was verified by the enlarged left breast and the needle biopsy of the same breast. The infiltrated and erythematous skin of the upper sternal and neck areas, where nests of metastatic carcinomatous cells were detected by biopsy, support such conclusion. The needle biopsies of the bumble marrow and a lymph gland as well as the X-ray examinations of dorsal column and the skull show clearly that the metastases were widely spread throughout the body. Due to the widely spread metastases the patient was transferred to the Institute of oncology in Zagreb for cytostatic treatment.

REFERENCES


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Fig. 1 Erysipelas-like erythema on the anterior aspect of chest and neck. The left breast is slightly enlarged
Fig. 2 The same patient, lateral view
Fig. 4 Biopsy specimen of erythematous skin. Islets of malignant epithelial cells in the dermis
Fig. 5 Needle biopsy of the left breast. Malignant epithelial cells
Fig. 6 Lymph node from the neck. A group of malignant epithelial cells obtained by needle biopsy
Fig. 7 Bone marrow. A group of malignant epithelial cells

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