

## A Case of Lymphedema of the Lower Limbs as a Result of Metastatic Spread to the Lymphatic Vessels of the Dermis

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### Summary

An unusual case of lymphedema is presented. It affects the lower limbs and chest, and is caused by localized metastatic proliferation to the dermal lymphatic vessels from a primary gastric carcinoma of the muciparous cell type.

### Introduction

The following is an interesting case of lymphedema which was brought to our attention. It shows special physiological and clinical characteristics. We are dealing here with an unusual case of lymphedema of the lower limbs and chest. Following a systematic study of the patient, we are able to demonstrate that the cause is a localized metastatic proliferation to the lymphatic vessels of the dermis, the primary etiology being a gastric carcinoma of the muciparous cell type.

### Clinical history

A 45-year-old male from Salerno (case A.G.) a veterinarian by trade, was admitted to our Department on July 24th, 1978. Past and present history were unremarkable. The patient had noticed a swelling of the lower limbs and genitals for about one year; he had also experienced difficulty when walking and deterioration of his general state of health. Marked edema of the lymphatic type was obviously present in the lower limbs, genitals and in the trunk right up to the level of the mammary region. (See Fig. 1.) A moderate increase was noted in the supraclavicular lymph nodes bilaterally as well as in the lateral

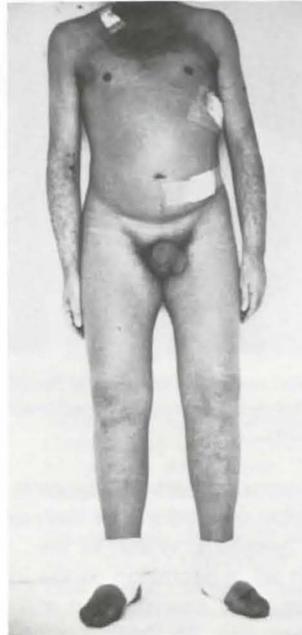


Fig. 1 Clinical case in consideration. Lymphedema of the lower limbs, genitals and chest

cervical nodes, which had a rubbery consistency. Examination of the chest revealed a dullness at the right base caused by pleural effusion.

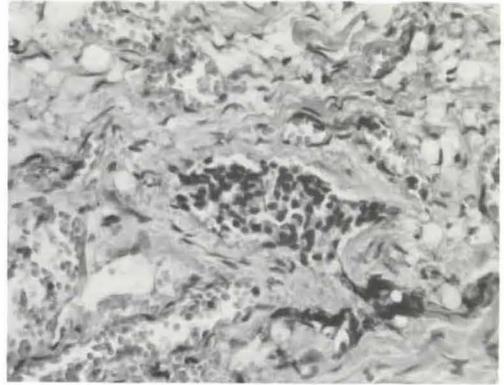
The pathological hemoclinical findings were as follows: leukocytes: 11.600 mm<sup>3</sup>; Ca.: 8,2 mg/dl; Protein: 4.4 g/dl; Albumin: 2.8 g/dl; Globulin: 3.6 g/dl; Cholinesterase: 1400 U/dl.



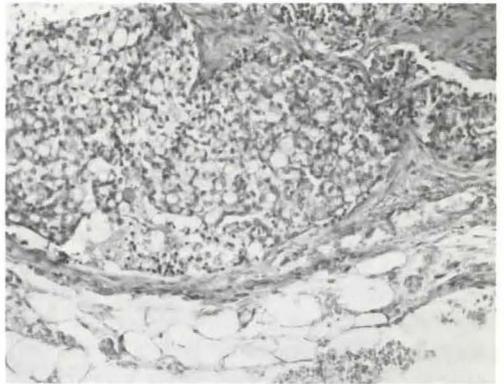
**Fig. 2** Lymphography: numerical increase of lymphatic collectors with flooding and multiple overflowing of the contrast medium.

The patient underwent numerous diagnostic tests. Lymphography revealed a large increase in the number of lymphatic vessels in the lower limbs which are apparent up to the upper third of the leg, with extravasation and dermal backflow (see Fig. 2). Phlebography does not demonstrate any alteration in the venous circulation.

A radiographic examination of the chest confirmed the presence of right pleural effusion. A biochemical test of the pleural fluid was therefore performed to determine its nature. The following data were obtained: appearance: turbid, color: yellow; noncoagulated; Rivalta test: positive; protein: 31 %. A large amount of reddish sediment was present with multiple erythrocytes, and a few degenerated polymorphonuclear cells. Numerous cells of epithelial appearance represent in an advanced stage of regression. Radiographic examination of the whole skeleton does not show any secondary osteolytic alteration of the skeleton. Barium

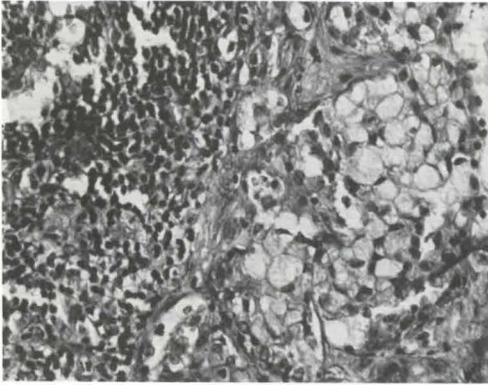


**Fig. 3** Metastatic carcinoma of the dermal lymphatic vessels (Em.Eos. 125 x)



**Fig. 4** Endolymphatic metastasis consisting of cells having the shape of "bezel shaped rings" with considerable vasodilation (Em.Eos. 125 x)

enema and urography were negative. A biopsy was then performed on the left leg (skin fragment and subcutaneous tissue). The samples were sent to the Institute of Anatomy and Pathological Histology of the University of Genoa for a histological examination. Both the skin fragment at the dermo-hypodermic level and the subcutaneous tissue demonstrated carcinomatous infiltration consisting mainly of founded elements with an eccentric nucleus having the appearance of bezel-shaped cells. The cytoplasm was extremely PAS +. A large number of dermal lymphatic vessels was invaded by metastases. They probably originated from a cylindrical cell carcinoma with a muciparous activity potential (Fig.3-5).



**Fig. 5** Carcinomatous metastasis in the peripheral inlet of the supraclavicular lymph node

At the same time, a radiographic examination of the gastro-intestinal tract was carried out, which clearly shows a filling defect in the antro-pyloric region with irregular margins. There is thickening of the gastric wall with disappearance of the mucosal folds. This study indeed confirms the initial impression of a gastric carcinoma.

On August 4th, 1978 owing to the progressive deterioration of the patient's general state of health and due to the fact that a surgical intervention was not being contemplated, he was then transferred to his hometown according to his wish and that of his relatives. One month later, we were notified of his death. An autopsy was not performed because such a procedure was against the wishes of the relatives.

### Discussion

As of now, many classifications of lymphedema have been suggested. We would like to remind you of our School's classification (7).

The clinical case observed belongs to the secondary lymphedemas and more precisely in the group of those of neoplastic nature.

The lymphographic survey enabled us to observe an increase in the number of lymphatic vessels, dermal backflow, and flooding of and extravasation from the lymphatic vessels. This led us to suspect a partially rejected invasion of the lymphatic vessels, which obstructed the lymphatic flow. The final diagnosis was definitely established through histology, which demonstrated an invasion of neoplastic cells with a bezel appearance and probably multicentric activity at the level of the dermal lymphatic vessels. We have since been able to verify the presence of an asymptomatic primary gastric neoplasm radiographically. This case demonstrates how the abnormal metastatic spread of a gastric carcinoma towards the dermal lymphatics can create lymphedema in the lower limbs, the genitals, and the chest with unusual physiopathological characteristics.

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