

Lymphographic Changes Caused by Lymph Node Metastases in Carcinoma of the Suprarenal Glands

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Summary

In the literature reviewed, only two articles were found describing lymphographical changes caused by metastases of malignant adrenal tumours. A patient with anaplastic carcinoma of the suprarenal gland is presented here. In this patient, postoperative retroperitoneal lymphography with control films was of vital importance for the planning of post-operative treatment and follow-up.

The literature describing lymphographical changes caused by lymph node metastases is abundant. Notwithstanding, only a few mentions are made of lymphographical findings of metastases in patients with malignant tumours of the suprarenal glands, which, apparently, is due to the fact that these tumours are relatively rare. In *Rummelhardt* and *Fussak's* (4) series consisting of 729 lymphographies there were only two malignancies of the suprarenal glands, both with verified lymph node metastases. *Lewinsky* et coll. (2) collected literature on 158 non-hormonal adrenocortical tumours and added to them 20 cases of their own. Of these latter patients, retroperitoneal lymphography had been performed on one only with a positive finding. The purpose of this paper is to present an additional case and describe the patient.

Case Report

A 41-year-old woman with anamnesis of over 10 years of hypertension was admitted to hospital for menstrual disturbances persisting for more than a year, and an increased growth of hair for approx. 6 months. Moreover, the patient had found a resistance in her left upper abdomen.

At physical examination, the patient was found to be obese and to have acne on her face as well as hirsutism. Under the left costal arch, a firm, immovable, non-tender resistance, the size of two fists, was palpable. Her blood pressure was elevated, the highest reading measured was 220/145 mm Hg. Of the laboratory values, sedimentation rate was elevated, ad 69 mm/h. Urine ketosteroids were markedly elevated, 156.1 $\mu\text{mol}/24$ hours, and likewise, urine ketogenic steroids were 270.5 $\mu\text{mol}/24$ hours. Plasma cortisol levels were also elevated, but no 12-hour changes were found in them, morning level was 0.79 $\mu\text{mol}/1$ and evening level 0.77 $\mu\text{mol}/1$. The dexametason suppression test was not made.

Chest X-ray film revealed a slightly enlarged left ventricle of the heart and no pathological densities in the lungs. The excretory urography showed a lateral displacement of the left kidney. Because an adrenal tumour was suspected, an abdominal aortography was performed, revealing an expansive process at the upper medial side of the left kidney, where malignant vessels were also seen (Fig. 1).

At operation, a malignant neoplasm in two parts weighing 1460 gr as well as the left kidney, which was partly surrounded by the tumour attached to it, were excised. At operation, tumourous tissue was detected on the surface of the renal artery and the aorta; from the latter this tissue was completely removed. The operation report does not include any mention of possible lymph node metastases. The microscopic picture of the tumour corresponded with that of a partly necrotized anaplastic carcinoma. Only normal renal tissue was demonstrable in the specimens taken from the left kidney. For the planning of postoperative treatment a retroperitoneal lymphography was performed, revealing a large lymph node metastasis confined to the

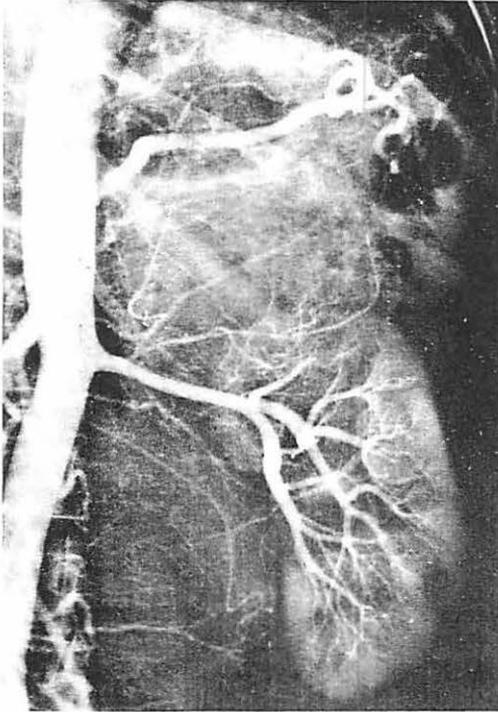


Fig. 1 The left kidney is displaced by a large tumour mass. The aortography shows the size of the tumour, the stretched a. renalis and the dilated as well as displaced a. suprarenalis inferior. Pathologic vessels are demonstrated in the tumour.



Fig. 2 An enlarged metastatic lymph node is seen in the left lumbar region. The node shows central replacement and shell-like opacification.

left lumbar region. Postoperatively, the chemotherapeutical o,p'-DDD treatment was instituted and continued for about 4 months. In a control lymphogram 5 months after the operation, the lymph node metastasis was found to have grown and it was excised. The histological picture of the metastasis corresponded with that of the poorly differentiated carcinoma tissue, at the edge of which some lymph node tissue was seen, and, thus, the specimen could be interpreted as a lymph node metastasis of adrenal carcinoma. Two weeks after this reoperation, control lymphogram was again taken revealing that the metastatic lymph node had been removed, but that changes indicating new metastases had appeared on the contra lateral side. o,p'-DDD treatment was continued, but in spite of it control lymphograms revealed increasing growth in the lymph node metastases on the right side. Plasma cortisol and urine 17-ketosteroids remained at normal level, while urine 17-ketogenic steroids were gradually elevated to the level of $101.2 \mu\text{mol}/24$ hours and blood pressure to about 200/100 mm Hg. Fifteen months after the primary operation, the patient was given radiotherapy to the lymph nodes, after which a diminution in them was verified. At this stage, metastasis of the bone was found in the left humerus, which was also treated with radiotherapy. Twenty months after the operation, the patient was alive and in a relatively good general condition.

Lymphographical findings

In the primary lymphography performed 8 days after the excision of the adrenal tumour, a rounded lymph node measuring 2.7×4.2 cm was detected on the level of the intravertebral

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Fig. 3 Five months later the size of the node is doubled and the marginal sinus discontinued.

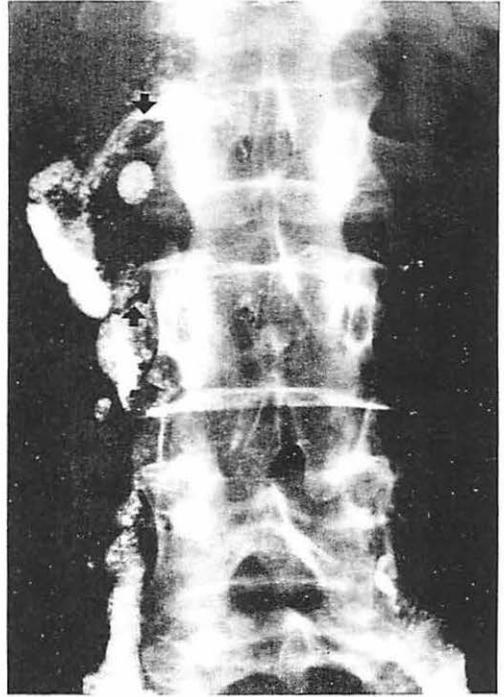


Fig. 4 The left metastatic node is excised and there is a new metastasis to the right. Only a crescent shaped opacification is seen of the enlarged node which displaces adjacent nodes.

bodies of the third and fourth lumbar vertebrae (Fig. 2). The defect in this node filled it almost entirely so that the contrast medium filled only the marginal sinus, which was interrupted laterally. Five months later the lymph node metastasis had reached the size of 5.6 x 8.7 cm, at which stage contrast medium could hardly be detected in the marginal sinus (Fig. 3). This indicated the reoperation at which the lymph node metastasis was excised, and its size as well as spread corresponded with the lymphographical finding. At the level of the bifurcation of the aorta, two lymph nodes, regarded as suspect metastases at this operation, were excised. In one of these, histological examination revealed metastatic tissue.

A postoperative lymphogram taken two weeks later, revealed that the node previously interpreted as metastasis had been removed and an additional metastasis measuring 1.1 x 2.0 cm was demonstrated on the right side on the level of the 2nd lumbar vertebra (Fig. 4). This metastasis was followed with lymphograms taken at 2-month intervals; in a lymphography performed 7 1/2 months later it measured 3.4 x 4.0 cm (Fig. 5). Cobalt radiotherapy of 3360 rads was then administered to this metastasis, which was afterwards found to have diminished in size, measuring 1.6 x 2.4 cm.

Discussion

Lymphogenic metastasizing in malignancies of the suprarenal glands occurs in half of the cases reported in the literature (3). The lymph in the suprarenal glands is drained into the lymph nodes situated around the renal arteries (1). Metastases of the carcinoma of the suprarenal

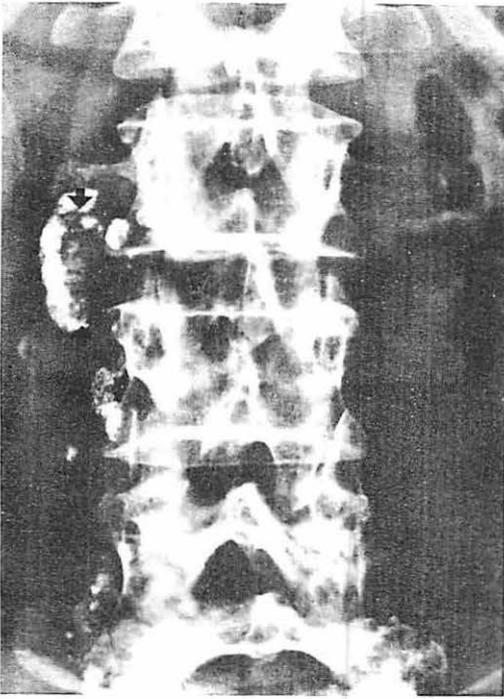


Fig. 5 Control lymphogram after irradiation reveals diminishing of the metastasis.

glands are easily demonstrated in lymphography, but they do not have any specific characteristics (4). Apart from revealing lymph node metastases of carcinomas pretherapeutically, lymphography and control pictures are of importance in detecting new metastases developing later and in following their size, in order to plan treatment.

In the patient presented here, the first metastasis of carcinoma of the suprarenal glands was found postoperatively by lymphography in a lumbar lymph node on the left side and it was confirmed histologically. In the control lymphographs taken later, a new metastasis was observed on the contralateral side and it was found to diminish as a result of radiotherapy. In this case, the lymphographical changes of the metastases of the adrenal carcinoma did not deviate from alterations caused by other carcinomatous metastases.

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