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Computer Tomography (CT) in the Diagnosis and Staging of Cancer of the Penis

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CANCER OF the penis is a rare disease in Finland. Its incidence is 0.5/100 000/male population [1]. At presentation, patients generally complain of a penile mass or ulcerating lesion. Some patients may demonstrate inguinal lymphadenopathy [1, 2]. Tumours of the glans and prepuce may metastasise to the inguinal nodes, but if the infiltration involves the corpus spongiosum or urethra, metastases are often also found in the para-iliac and para-aortic nodes [3, 4]. Lymphography is important in the evaluation of the para-iliac and para-aortic lymph nodes, but its straightforward interpretation is often difficult [5–7]. There are presently no reports available concerning the use of computer tomography (CT) as a method of investigation in cancer of the penis, but there are some reports on CT investigations in benign lesions of the penis [8, 9].

The UICC classification of penile cancer of 1987 [10] is based on the depth of infiltration and other histopathological findings. The T code (classification of the primary tumour) could be established according to these rules only in patients undergoing surgery. In a previous study [7], it was demonstrated that although the majority of patients were operated on, one third of the patients could not be classified in regard to this classification. The main aim of the present study was to establish whether CT could be a valuable method in the classification of cancer of the penis, with regard to the T code.

13 men with histologically confirmed malignant tumour of the penis (9 patients with squamous cell carcinoma originating in the penis, and 4 patients with metastasis in the penis from cancers of other sites) were investigated by CT. Contrast enhancement with iopamidol was used. The findings in CT scans were compared with findings with other methods of examination (Table 1).

Table 1. Findings in 13 patients with cancer of the penis by method of investigation, and investigated area

Method of investigation	No. of abnormal findings by investigation area (%)		
	Penis	Inguinal regions	Pelvic and abdominal regions
Palpation	13/13 (100)	6/13 (46)	—
Computer tomography	8/13 (62)	6/13 (46)	6/13 (46)
Lymphography	—	2/3 (67)	3/3 (100)
Histological findings	13/13 (100)	4/6 (67)	—

All primary tumours were palpable. Eight of the nine primary tumours were larger than 2 cm. All four metastases involving the penis were located in the shaft. Eight tumours involving the penis were visible in CT pictures. Four tumours larger than 1 cm with exophytic growth were well detected by CT. All four palpable metastatic tumours in the penis were demonstrated by CT. Small superficial penile tumours found in palpation were missed by CT (Table 1).

Valuable methods of investigation are indispensable in the staging of penile cancer and for rational treatment planning. Actually, there is no reliable physical method of investigation which can demonstrate infiltration of different tissues and structures of the penis by tumoral cells, as determined by the rules of the UICC classification. CT was also helpless. The treatment of penile cancer consists of conservative methods using radiotherapy and chemotherapy. Amputation of the penis is always avoided when possible. So, cancer of the penis should be almost always classified according to findings of physical examination. There is no diagnostic need for CT in examining the penile lesions. In the present study, all penile tumours were determined by palpation while some tumours were completely missed by CT scans. Physical examination and CT findings concurred nevertheless in 62% of penile tumours.

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