PENILE CANCER

Can preoperative CT identify patients with high-risk, node-positive penile cancer?

Patients with pathological node-positive (pN⁺) penile cancer have markedly decreased survival rates compared to those with node-negative disease. Adjuvant radiation therapy might benefit some men found to have lymph node metastases, but survival remains poor in those with high-risk disease features. Systemic induction therapy before definitive surgery might improve the prognosis for these high-risk patients; however, this would require preoperative identification of parameters indicative of high-risk pN⁺ disease, and, as nodal involvement is typically discovered after histopathologic examination, highly sensitive imaging-based methods of risk stratification are needed. Niels Graafland and colleagues from The Netherlands Cancer Institute investigated whether preoperative CT can reliably detect high-risk disease features.

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The preoperative diagnostic CT images of 30 patients (median age 65 years, range 44–90 years) with confirmed unilateral or bilateral lymph node involvement were independently reviewed by two radiologists who were unaware of the patients' node status. Several radiographic criteria were assessed for their ability to predict pathological lymph node involvement, including short axis diameter ≥ 8 , 11 or 15 mm, central node necrosis, presence of irregular nodal border, and infiltration of adjacent tissue. Either side of the patient was classified as being high

risk if any of the following three features were present: ≥ 3 unilateral inguinal lymph node metastases, extranodal extension, or pelvic lymph node involvement.

Of the 60 sides under investigation, 38 (63%) had histopathologically confirmed nodal involvement, of which 22 (37%) were considered high risk. The radiographic criteria of central nodal necrosis and/or presence of irregular nodal border were found to predict high-risk pN⁺ penile cancer with a sensitivity and specificity of 95% and 82%, respectively. Importantly, the sides that were falsely designated as high risk were confirmed to be harboring inguinal metastases, but were considered only low risk. The interobserver agreement for the presence of these criteria was 95%.

Although the retrospective nature of this study and the use of a highly selected patient population might have led to overestimation of the diagnostic utility of CT, the authors nonetheless conclude that central node necrosis and/or irregular nodal border are useful CT criteria with which to identify patients with high-risk pN⁺ penile cancer before they undergo definitive surgery. These criteria could be used for patient counseling or for indicating which men might benefit from induction therapy.

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