



Original contribution

# Warty/basaloid penile intraepithelial neoplasia is more prevalent than differentiated penile intraepithelial neoplasia in nonendemic regions for penile cancer when compared with endemic areas: a comparative study between pathologic series from Paris and Paraguay<sup>☆</sup>

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**Summary** Penile squamous cell carcinoma shows an ample geographic variation in its prevalence with regions of low (North America, Europe, Japan, and Israel) and high (Africa, Asia, and South America) incidence. However, the geographic variation in the distribution of penile intraepithelial neoplasia is not well established. The aim of the present study was to compare the distribution of in situ and invasive lesions between geographic areas with low (France) and high (Paraguay) penile cancer incidence using a series of consecutive cases. The French series included 86 cases (57 in situ and 29 in situ + invasive squamous cell carcinoma), and the Paraguayan series, 117 cases (31 in situ and 86 in situ + invasive squamous cell carcinoma). Incidence of invasive squamous cell carcinoma in the overall samples was higher in the Paraguayan series ( $P < .00001$ ). Comparing the Paraguayan and the French series, differentiated penile intraepithelial neoplasia was more prevalent in the former (65.0% versus 19.8%), whereas lesions showing warty and/or basaloid features predominated in the latter (35.0% versus 80.2%) to a significant level ( $P < .00001$ ). This distinctive pattern of differential distribution was maintained when cases with associated invasive squamous cell carcinoma were excluded. The pattern of distribution of lichen sclerosus was also distinctive, with a significantly higher prevalence in the Paraguayan population when compared with the French series (32.5% versus 12.8%,  $P = .0015$ ). In summary, there appears to be a distinctive distribution of penile precursor lesions depending on the

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