

Leptomeningeal Metastasis of Gynecologic Origin: The Decisive Role of Cytology

Dias C^{1,2 * #}, Lino I^{1,3 #}, Babo M^{1,4 #}, Roque R^{5,6}

<https://doi.org/10.26537/citotech.vi9.6906>

¹Escola Superior de Saúde, Instituto Politécnico do Porto, Porto, Portugal

²Serviço de Anatomia Patológica, Hospital da Luz, Lisboa, Portugal

³Serviço de Anatomia Patológica, Fundação Champalimaud, Lisboa, Portugal

⁴Serviço de Anatomia Patológica, Instituto Português de Oncologia Francisco Gentil, EPE, Porto, Portugal

⁵Serviço de Anatomia Patológica, Instituto Português de Oncologia de Lisboa Francisco Gentil, Lisboa, Portugal

⁶Escola Superior de Saúde de Lisboa, Instituto Politécnico de Lisboa, Lisboa, Portugal

Received: January 2025/ Published: December 2025

These authors contributed equally to this work.

***Corresponding author:**

Cristiana Dias

cristiana.sgd@gmail.com

ABSTRACT

Cytopathological examination of cerebrospinal fluid is an essential diagnostic method in the evaluation of central nervous system disorders and plays a fundamental role in the detection of meningeal dissemination by neoplasms.

The present case study refers to a 34-year-old woman previously diagnosed with high-risk human papillomavirus–associated adenosquamous carcinoma of the uterine cervix, with confirmed lymph node metastasis. Approximately one year after radical hysterectomy, neurological symptoms led to the consideration of carcinomatous leptomeningitis.

Cytological analysis of the cerebrospinal fluid revealed malignant cells with epithelial morphology, confirmed by immunocytochemistry showing positive immunostaining for pan-cytokeratin MNF116 and p16 protein, and negative staining for CD20. The patient's prior oncological history and cellular morphology, complemented by immunocytochemical biomarker evaluation, allowed the diagnosis of leptomeningeal metastasis from cervical carcinoma.

This case highlights the relevance of cerebrospinal fluid cytological examination which, in association with complementary techniques, enabled the diagnosis of meningeal metastases from a gynecological neoplasm, a rare but clinically relevant entity.

Key-words: Cerebrospinal Fluid, Adenosquamous Carcinoma of the Cervix, Leptomeningeal Carcinomatosis, Immunocytochemistry, Human Papillomavirus

