Touch imprint cytology

Touch imprint cytology (TIC) and frozen section (FS) procedures are essential for intraoperative pathological diagnosis (IPD). They are invaluable tools for therapeutic decision-making, helping surgeons avoid under or overtreatment of patients. Pituitary neuroendocrine tumors (PitNETs) are generally small, slow-growing tumors with low-grade malignancy located at the base of the skull where it is impossible to maintain a wide tumor margin. Therefore, transsphenoidal surgery (TSS) should be performed with necessary caution, and with sufficient and minimal resection. Thus, this study aimed to evaluate the diagnostic accuracy of TIC for the diagnosis of PitNET and determine its ability to accurately evaluate the surgical margin compared to the FS procedure. A total of 104 fresh specimens from 28 patients who underwent TSS for PitNETs were examined using TIC and FS. TIC specimens were categorized according to the cell imprinting pattern. All specimens with a large number of neuroendocrine cells diffusely attached to the glass surfaces had PitNET components. Contrarily, no rich or diffuse cell attachments were observed in any non-tumoral endocrine cells. In conclusion, recognizing a pattern of endocrine cell adherence to glass is highly effective in IPD to certify the existence of a PitNET component [1].

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Tanabe N, Inoshita N, Ishida A, Kato M, Yoshimoto H, Shiramizu H, Suga H, Tateno T, Ohashi K, Yamada S. Touch imprint cytology is useful for the intraoperative pathological diagnosis of PitNETs' surgical margins. Brain Tumor Pathol. 2023 Oct;40(4):215-221. doi: 10.1007/s10014-023-00470-9. Epub 2023 Oct 6. PMID: 37801258.