Detection of Dendritic Langerhans Cells using CD1a: Technical Approach and Practical Application

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LETTER TO THE EDITOR

Dendritic cells (DCs) are engaged in the immune response and their role is to present antigens to T cells. An important subtype of DCs is mainly represented by Langerhans cells (LCs). LCs act locally by initiating the adaptive T cell response and in the epidermis by being involved in the innate immune response. Antigen presentation of DCs is linked to a transmembrane glycoprotein, CD1a. Consequently, CD1a is accepted as a good marker for detecting dendritic LCs[1,2]. Many studies indicated that CD1a expression is particularly useful for detection of DCs, in opposition to another protein, S100, which is expressed frequently in mature DCs[3]. The density of positive expression of CD1a in tumours was corelated with a poor prognosis. O'Donnell et al. described that an intratumoural increase of Langerin-positive DCs was remarkably associated with vascular/lymphatic invasion in patients with oral squamous cell carcinoma (SCC), predicting an unfavourable survival rate[4].

The immunohistochemical reaction was performed using the Leica Bond-Max autostainer. After the peroxidase blocking, the CD1a was used as primary antibody (clone MTB1, RTU, Leica Biosystems, Newcastle Ltd, Newcastle Upon Tyne NE 12 8EW, UK, incubation time 30 minutes) and the Bond Polymer Refine Detection System. Cells with dendritic morphology and cytoplasmic expression of CD1a were found. The following patterns were noticed: isolated cells and networks. The cells organized in networks, with numerous, communicating extensions, were located predominantly perivascular *(fig.1 a)*, in the centre or at the periphery of the tumour areas *(fig.1 b)*. It may be considered that this immunoreaction faithfully reproduces the morphology, number, and distribution model of follicular dendritic cells in squamous cell carcinomas of the head and neck.
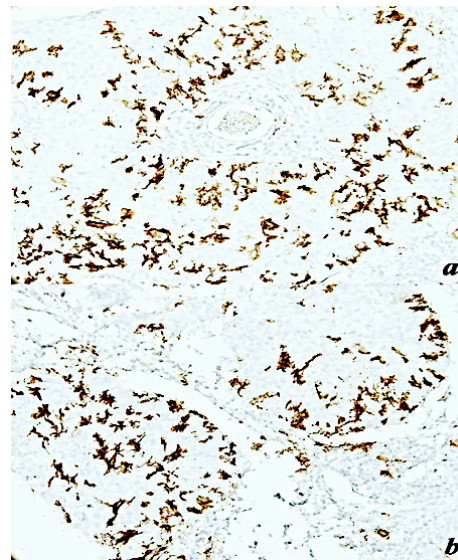
Fig.1
Immunohistochemical positive expression of CD1a in SCC of the palatine tonsils, original magnification x400. DCs-perivascular invasion (a). DCs-network distribution in the tumour area (b).

References

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