

Skin telopodes

MUGUREL CONSTANTIN RUSU

Discipline of Anatomy, Faculty of Dental Medicine, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania

Dear Editor,

Regarding the paper “Infrastructure of the telocytes from tumor stroma in the skin basal and squamous cell carcinomas”, which was recently published in your journal [1], I have several observations, which I will not discuss before congratulating the authors for their work, in which they used the transmission electron microscope (TEM). At this time, although there were attempts to establish a specific immune phenotype of telocytes (TCs), this goal was not yet reached and TEM remains the only tool able to indicate whether, or not, a cell is a TC [2].

Telocytes were defined as being “*cells with telopodes*” [3]. Telopodes (Tps) are moniliform prolongations of TCs, alternating thin segments named podomeres with dilations named “*podoms*” [4], and not “*podomes*” as the authors here [1] describe throughout their paper.

The authors state they got from surgery samples of cell carcinomas. Malignant epithelial and stromal lesions are documented in Figures 1–6 of the article. Then, TCs and Tps are documented in Figures 7–14 of the article.

In a previous paper, we indicated that diagnosis of TCs is difficult as hybrid morphologies can occur [5]. We commented there that the telopodial emergence should be carefully observed and diagnosed, as fibroblasts can be misdiagnosed as being TCs [5]. In this regard, to document only telopodial prolongations, without cell bodies, as in Figures 8–14 of the paper we refer here [1], could appear as speculative for a TC diagnosis in TEM. Moreover, the bipolar TC indicated in Figure 7 of the article, has a doubtful telopodial emergence. Nevertheless, the presence of caveolae, although stated as being a main trait for identifying TCs, does not firmly indicate TCs; different other cell types can present these plasmalemmal specializations [6].

Attention is pointed to the TC-mast cells vicinities [1], as was done in previous papers dealing with TCs [7, 8]. In this regard, the authors should have investigated and performed a differential diagnosis between TCs and dermal dendrocytes (DCs) that were first described by Headington [9, 10] and are referred or investigated in more than 150 papers. These dermal DCs are morphologically similar to TCs in TEM [11]. However, different subtypes of DCs are described [12, 13], making an accurate differential diagnosis a difficult task. Since their description, DCs were considered as being “*part of an immunologically competent system that is indigenous to the dermis and is either supplementary or complementary to immunologically functional cells of the epidermis*” [10]. As DCs have specific markers, such as the Factor XIIIa [14–17], an immunohistochemical study should be designed complementary to TEM skin studies. This is mandatory when it is known that DCs are involved in the dermal immune response to skin neoplastic processes [18]. The authors should have also taken into account that dermal DCs have antigen-presenting and healing functions in the basal cell carcinoma (BCC) when the peritumoral stroma demonstrates an increased microvascular bed, an increased number of mast cells and an increased number of DCs expressing CD34 and GP1b- α , a vascular adhesion molecule [19]. CD34-positive TCs were assessed in skin dermis samples [20] but they were not checked for a GP1b- α or Factor XIII phenotype.

I congratulate hereby the authors for their valiant effort, and thank the editors for publishing an interesting topic, which leads to further researches and debates.

References

- [1] Mirancea N, Moroşanu AM, Mirancea GV, Juravle FD, Mănoiu VS, *Infrastructure of the telocytes from tumor stroma in the skin basal and squamous cell carcinomas*, Rom J Morphol Embryol, 2013, 54(4):1025–1037.
- [2] Sun X, Zheng M, Zhang M, Qian M, Zheng Y, Li M, Cretoiu D, Chen C, Chen L, Popescu LM, Wang X, *Differences in the expression of chromosome 1 genes between lung telocytes and other cells: mesenchymal stem cells, fibroblasts, alveolar type II cells, airway epithelial cells and lymphocytes*, J Cell Mol Med, 2014, 18(5):801–810.
- [3] Popescu LM, *The tandem: telocytes – stem cells*, Int J Biol Biomed Eng, 2011, 5(2):83–92.
- [4] Faussone Pellegrini MS, Popescu LM, *Telocytes*, Biomol Concepts, 2011, 2(6):481–489.
- [5] Rusu MC, Nicolescu MI, Jianu AM, Lighezan R, Mănoiu VS, Păduraru D, *Esophageal telocytes and hybrid morphologies*, Cell Biol Int, 2012, 36(12):1079–1088.
- [6] Rusu MC, Loreto C, Mănoiu VS, *Network of telocytes in the temporomandibular joint disc of rats*, Acta Histochem, 2014, 116(4): 663–668.

- [7] Rusu MC, Jianu AM, Mirancea N, Didilescu AC, Mănoiu VS, Păduraru D, *Tracheal telocytes*, J Cell Mol Med, 2012, 16(2):401–405.
- [8] Rusu MC, Mirancea N, Mănoiu VS, Vâlcu M, Nicolescu MI, Păduraru D, *Skin telocytes*, Ann Anat, 2012, 194(4):359–367.
- [9] Headington JT, *The dermal dendrocyte*, Br J Dermatol, 1985, 113(Suppl s29):15.
- [10] Headington JT, *The dermal dendrocyte*, Adv Dermatol, 1986, 1:159–171.
- [11] Monteiro MR, Shapiro SS, Takafuta T, Menezes DW, Murphy GF, *Von Willebrand factor receptor GPIb alpha is expressed by human factor XIIIa-positive dermal dendrocytes and is upregulated by mast cell degranulation*, J Invest Dermatol, 1999, 113(2):272–276.
- [12] de Panfilis G, *Langerhans cells, dendritic cells, 'dendrocytes' and macrophages in normal human dermis*, Br J Dermatol, 1996, 135(4):652–653.
- [13] Headington JT, Cerio R, *Dendritic cells and the dermis: 1990*, Am J Dermatopathol, 1990, 12(3):217–220.
- [14] Hermanns-Lê T, Uhoda I, Piérard-Franchimont C, Piérard GE, *Factor XIII a-positive dermal dendrocytes and shear wave propagation in human skin*, Eur J Clin Invest, 2002, 32(11):847–851.
- [15] Arrese Estrada J, Piérard GE, *Factor-XIIIa-positive dendrocytes and the dermal microvascular unit*, Dermatologica, 1990, 180(1):51–53.
- [16] Nickoloff BJ, Griffiths CE, *Factor XIIIa-expressing dermal dendrocytes in AIDS-associated cutaneous Kaposi's sarcomas*, Science, 1989, 243(4899):1736–1737.
- [17] Cerio R, Spaul J, Jones EW, *Histiocytoma cutis: a tumour of dermal dendrocytes (dermal dendrocytoma)*, Br J Dermatol, 1989, 120(2):197–206.
- [18] Fullen DR, Headington JT, *Factor XIIIa-positive dermal dendritic cells and HLA-DR expression in radial versus vertical growth-phase melanomas*, J Cutan Pathol, 1998, 25(10):553–558.
- [19] Humphreys TR, Monteiro MR, Murphy GF, *Mast cells and dendritic cells in basal cell carcinoma stroma*, Dermatol Surg, 2000, 26(3):200–203; discussion 203–204.
- [20] Manetti M, Guiducci S, Ruffo M, Rosa I, Fausone-Pellegrini MS, Matucci-Cerinic M, Ibba-Manneschi L, *Evidence for progressive reduction and loss of telocytes in the dermal cellular network of systemic sclerosis*, J Cell Mol Med, 2013, 17(4):482–496.

Corresponding author

Mugurel Constantin Rusu, Associate Professor, MD, PhD, Dr. Hab., Discipline of Anatomy, Faculty of Dental Medicine, "Carol Davila" University of Medicine and Pharmacy, 8 Eroilor Sanitari Avenue, 050474 Bucharest, Romania; Phone +40722–363 705, e-mail: anatomon@gmail.com

Received: June 5, 2014

Accepted: July 10, 2014