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Research article

Terminologia Histologica 10 years on: some disputable terms in need of discussion and recent developments

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ABSTRACT

At first sight, the issue of morphological terminology may seem to be a "closed and unchanging chapter", as many of the structures within the human body have been known for decades or even centuries. However, the exact opposite is true. The initial knowledge of the microscopic structure of the human body has been continuously broadening thanks to the development of new specialized staining techniques, discovery of the electron microscope, or later application of histochemical and immunohistochemical methods into routine tissue examination. Contrary to popular belief, histology has a status of constantly developing scientific discipline, with continuous influx of new knowledge, resulting in an unavoidable necessity to revise the histological nomenclature at regular intervals. The team of experts of the Federative International Programme on Anatomical Terminology, a working group of the International Federation of Associations of Anatomists, published in 2008 the First Edition of *Terminologia Histologica*. *Terminologia Histologica* (TH) is the best and most extensive of all the histological nomenclatures ever issued. However, here we suggest that several terms of important histological structures are still missing while several other terms are disputable. First, we present some clinically important terms of cells and tissue structures for inclusion in the next TH and, in a second part, we refer to some new terms in the current edition of the TH which are not yet mentioned in current histology textbooks (e.g., fusocellular connective tissue, bundle bone as the third type of bone tissue, spongy layer of vagina or *arteria vaginata* from the splenic white pulp). With this article we hope to start a wide scientific discussion which will lead to an inambiguous definition and demonstration of typical examples of all terms in the TH, with the result that the new edition of the *Terminologia Histologica* will become an internationally accepted communication tool for all practitioners and teachers of histology alike.

1. Introduction

Terminology in morphological sciences is enormously important. Proper denomination of individual structures of the human body, whether from the perspective of gross anatomy, or from the microscopic point of view, has an irreplaceable role in unambiguous understanding and communication among scientists. In addition, the significance of a uniform nomenclature extends beyond professional discussions among morphologists, as it is also greatly important in communication toward clinicians and among clinicians themselves. Any discrepancy in the usage of anatomical, histological or embryological nomenclature by health care professionals during their clinical practice can lead to misunderstandings, misinterpretations and subsequently to possible errors in diagnostics and therapy. Worldwide unification of the morphological nomenclature is a long lasting endeavor of the Federative International Programme on Anatomical Terminology (FIPAT), a working group of the International Federation of Associations of Anatomists (IFAA). However, the unification of the terminology is only the first measure. Next inevitable step is to disseminate the correct nomenclature so it gets established as a set of reference terms which are commonly and properly used by a wide spectrum of professionals. Therefore, it can be said that anatomical, histological and embry-

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ological nomenclatures are the base for medical communication (Kachlik et al., 2008, 2015; Rosse, 2001).

Despite the last version of the internationally accepted and recommended histological nomenclature, *Terminologia Histologica* (TH), has been circulating for over 10 years (FICAT, 2008), it has not been met with a significant acclaim, judging by the number of available scientific papers published on the topic since then. Actually, there are only two publications discussing the TH. The first one published by Allen (2009) described the significance of its printed version as follows: "TH contains terminology for cellular structures, tissue and organs at the microscopic level. The books present the Latin term for each structure accompanied by the term in current usage in English-speaking countries." The second one (Varga et al., 2018a), provided an in-depth historical discourse of the histological terminology and nomenclature, but also summarized a list of hundreds of mistakes and inconsistencies published in the first edition of the TH. The nature of the mistakes can be summed up into several categories: typing errors, shortcomings in Latin grammar, discrepancies between various terminologies, and synonyms or repetition of terms in the current edition of the TH.

We anticipate that in the following years the histological terminology will experience the same strenuous path the anatomical terminology has already endured. The current anatomical terminology has an extensive history, which is the summary of especially long journey, beginning in the first half of the 16th century, when Flemish anatomist Andreas Vesalius authored the first widely known anatomical textbook entitled *De humani corporis fabrica* published in 1543. On the other hand, the first histological textbook was published as late as 1837 by German histologist Jacob Henle (*Symbolae ad anatomiam villorum intestinalium, imprimis eorum epithelii et vasorum lacteorum.*, focused only on the epithelial tissue). The textbook containing the complete general histology *Allgemeine Anatomie* was published by the same author in 1841. The first English histology textbook was published even later in 1846 by Arthur Hill Hassall (*The Microscopic Anatomy of the Human Body, in Health and Disease*). Despite these early exceptional works, the starting point of modern histology education as well as the base for creation of the histological terminology was the textbook "*Manual of Human Microscopic Anatomy*" published by a Swiss histologist Albert von Kölliker in 1860 (Bynum and Porter, 1993). The initial knowledge of the microscopic structure of the human body had been continuously broadening thanks to the development of new specialized staining techniques and impregnation methods (Nobel prize for medicine or physiology in 1906 was awarded to Camillo Golgi and Santiago Ramón y Cajal for their achievements in the field of neurohistology). The 20th century was the period of a number of revolutionary discoveries, which are rightfully recognized as the milestones of the histology development – the discovery of the electron microscope (Nobel prize for Physics in 1986 awarded to Ernst Ruska for his fundamental work in electron optics, and for designing the first electron microscope), application of histochemical and immunohistochemical methods into day-to-day research and routine histological and histopathological tissue examination (Riva et al., 2014; Wick, 2018), and last but not least, the development of molecular biology, whose methods are applicable also in the histological research. All of the aforementioned underlines the status of histology as a constantly developing scientific discipline, with a continuous influx of new knowledge, resulting in an unavoidable necessity to revise the *Terminologia Histologica* at regular intervals.

We expect, that the second and revised edition of the *Terminologia Histologica* will be published in the near future. Until that time, we would like to highlight some facts from the current edition, which deserve a wide scientific discussion. Firstly, it is the question of some clinically important, sometimes not widely accepted, but missing terms important for histologists (and subsequently for pathologists, forensic doctors, clinicians, etc.). Secondly, it is the issue of "controversial" terms, whose presence in humans is either unconfirmed, debatable, or under-researched, and most of them we cannot find in any of histological textbooks.

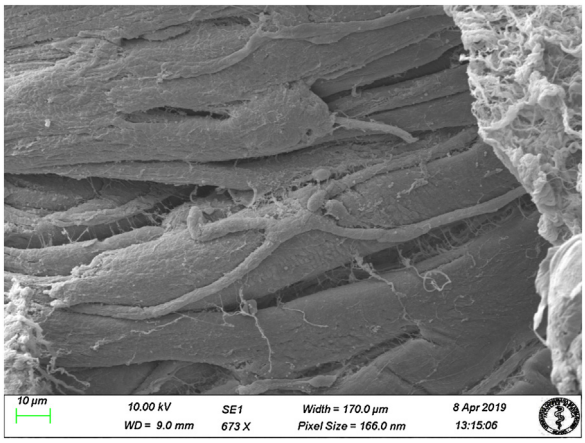

Fig. 1. Telocyte-like cell from the human myocardium. Cell with a small cell body (18 μm × 7 μm) and four thin and long cytoplasmic projections, most of them are longer than 70 μm (scanning electron microscope).

2. Cell populations which are not mentioned in TH

Telocyte (*telocytus*, Fig. 1) – telocytes (formerly known as interstitial Cajal-like cells) are "controversial" interstitial/stromal cells discovered only 14 years ago. To this date, they have been described in a diverse array of organs of different species including humans such as the heart (Iancu et al., 2018; Marini et al., 2018), gut (Shoshkes-Carmel et al., 2018), liver (Liu et al., 2016), kidneys (Qi et al., 2012), female reproductive system (Klein et al., 2017; Janas et al., 2018), or placenta (Nizyaeva et al., 2018). As of July 2019, more than 380 articles are being displayed in MEDLINE/PubMed after "telocytes" OR "interstitial Cajal-like cells" are searched for. From the functional perspective, telocytes were reported to play an important role in regeneration, tissue repair and angiogenesis (Vannucchi et al., 2016; Yang and Xiao, 2016; Shoshkes-Carmel et al., 2018; Hussein and Mokhtar, 2018), but also in the pathogenesis of a vast spectrum of diseases (Ibba-Manneschi et al., 2016; Pasternak et al., 2016; Varga et al., 2018b, 2019a). Despite this immense extent of emerging knowledge, telocytes still have not been widely accepted among researchers as a stand-alone cell population. They are neither referenced in histological textbooks, nor are they included in the *Terminologia Histologica*. From the histological point of view, telocytes have no specific immunophenotypic marker and their long cytoplasmic prolongations may be easily confused with blood and lymphatic endothelial cells, lymphatic progenitor cells or pericytes (Rusu and Hostiuc, 2019; Toader et al., 2019; Varga et al., 2019b). Despite the controversy surrounding telocytes, we think they should be included in both the nomenclature and textbooks of histology.

Thymic myoid cell (*cellula myoidea thymi*), is a missing term in the description of the thymic microscopic structure, even though this cell type is mentioned in the *Terminologia Embryologica* (FIPAT, 2017). Thymic myoid cells correspond to a muscle-like cell population present in the thymic medulla. The biological role of thymic myoid cells is yet not clear, as reviewed by Varga et al. (2019c). Mesnard-Rouiller et al. (2004) suggested that since thymic myoid cells express high level of most muscle genes, they may contribute to the mechanisms involved in the maintenance of immune tolerance. For mentioned reason, thymic myoid cells have been

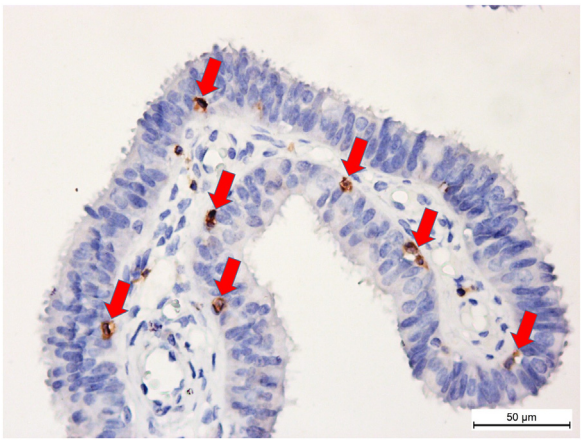

Fig. 2. Arrows indicate CD3-positive intraepithelial T lymphocytes within the epithelial lining of the uterine tube, located adjacent to the basement membrane (anti-CD3 immunostaining; stained brown with chromogen diaminobenzidine).

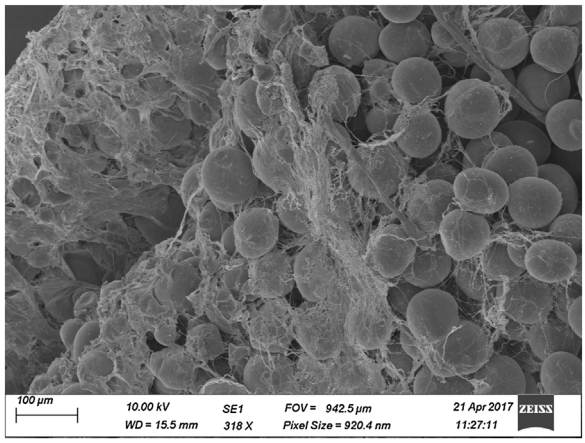

Fig. 3. Epicardial adipose tissue (*textus adiposus epicardiacus*) from the human heart, as an integral part of the epicardium (scanning electron microscope).

implicated in the pathogenesis of neuromuscular disorder myasthenia gravis (Marx et al., 2013).

The population of "halo cells" is missing in the description of the epithelial lining of *ductus epididymidis*. Halo cells are small cells with a narrow rim of clear cytoplasm around their dark nucleus, present throughout the epididymal epithelium. They are the primary immune cells in the epididymis. Thanks to immunostaining, it is now clear that the population of halo cells is comprised of helper T lymphocytes, cytotoxic T lymphocytes, and monocytes (Flickinger et al., 1997; Robaire et al., 2006).

The description of the tubal epithelium in current histological nomenclature is confusing. The presence of basal epithelial cells (*epitheliocytus tubarius basalis* according to the TH) in the tubal epithelium has long been a cytological enigma. According to our previous results (Varga et al., 2019d), these "basal cells" express surface markers of T-lymphocytes (Fig. 2). We recommend to remove the term basal epitheliocyte from the TH and replace it with intraepithelial T lymphocyte (*lymphocytus T intraepithelialis*). Intraepithelial T lymphocytes can be a key cell population in the process of immune tolerance, responsible for the tolerance of non-self sperm and partially non-self early embryo, preventing the activation of local immune responses. There is also an issue of peg or intercalary cell (*epitheliocytus tubarius angustus*), specifically the rationale behind its recognition as an individual cell type. According to Paik et al. (2012), these cells represent merely a mitotically active cell population or stem-like epithelial cells. These stem-like cells (historically termed as peg cells) are distributed throughout the uterine tube, but are mostly concentrated in the distal end, a potential site of the initiation of ovarian high-grade serous carcinoma (Tone, 2017).

3. Missing clinically important tissue structures or organs

Epicardial adipose tissue (*textus adiposus epicardiacus*, Fig. 3) is a morphologically and functionally distinct type of adipose tissue around the heart. Due to the anatomical proximity to other fat accumulations within this organ, the epicardial adipose tissue was often erroneously described as pericardial or paracardial fat (Talman et al., 2014). However, a definite distinction between the epicardial adipose tissue and other closely located cardiac fat depots is of utmost relevance. Since the epicardial adipose tissue is in direct contact with the myocardium, this topographical relation has a great significance in both physiological and pathophysiological conditions (Iacobellis, 2009). When thicker and dysfunctional, the epicardial adipose tissue actively contributes to the development and progression of coronary atherosclerosis, owing to a close topographic relation to coronary arteries (Ansaldo et al., 2019). From the clinical point of view, the volume of epicardial adipose tissue correlates not only with the risk of coronary artery disease, but also with that of non-ischemic dilated cardiomyopathy (Petrini et al., 2019) or atrial fibrillation (Gaeta et al., 2017). A terminological inconsistency can be found also in the understanding of the normal microscopic anatomy of the heart wall. Original papers (Bouchi et al., 2017) as well as review articles (Antonopoulos and Antoniades, 2017) often describe the epicardial adipose tissue as ectopic, while internationally recognized histological textbooks see it as a constituent of the epicardium itself (Ross and Pawlina, 2016).

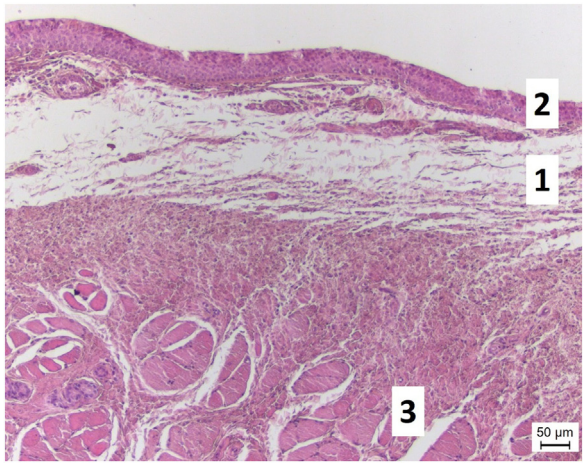

Fig. 4. *Lamina subepithelialis/lamina propria superficialis* of the vocal folds of the larynx often named as space of Reinke (1) between the surface epithelium (2) and skeletal muscle fibers of the vocalis muscle (3) (hematoxylin and eosin staining).

In the subchapter *Larynx*, the clinically important term *lamina subepithelialis/lamina propria superficialis* ("space of Reinke", Fig. 4) within the mucosa of *plica vocalis* is missing. Space of Reinke contains an extraordinary loose connective tissue rich in extracellular matrix and mostly acellular, located superficially to *ligamentum vocale* (Kambic et al., 1989; Rosen et al., 2008). In modern otorhinolaryngology, Reinke's space of the vocal fold is perceived as an important component of malignancy propagation and is also implicated in many phonation disorders, including vocal fold edema (Reinke's edema; Senior, 2015).

In mostly clinically-oriented scientific literature, the laryngeal tonsil (*tonsilla laryngea*), is mentioned as the fifth tonsil. It is localized in the wall of the laryngeal ventricle, where clusters

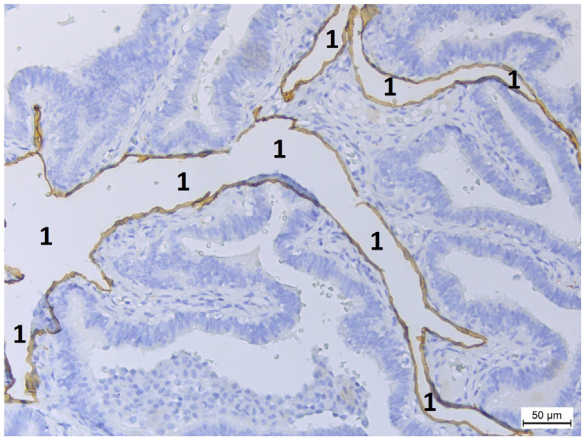

Fig. 5. Lymphatic lacunae (*lacunae lymphaticae*, 1) localized in the center of each mucosal fold of the mucosa of the human uterine tube. Lymphatic endothelial cells are labeled with anti-podoplanin D2-40 antibodies and stained brown with chromogen diaminobenzidine. Cell nuclei are counterstained by hematoxylin.

of lymphocytes and lymphatic nodules are constantly present. In this area, an organized lymphatic tissue (as a part of the mucosa-associated lymphatic tissue) is found in 100% of children and in more than 90% of adolescents, decreasing to less than 10% of the population in the sixth decade (Kutta et al., 2003). Thus, it undergoes the same changes, referred to as the age-related involution, which occur in the lymphatic tissue of other tonsils in the elderly. Typical morphological signs of the lymphatic tissue associated with the larynx are lymphatic nodules with germinal centers, infiltration of the overlying epithelium by lymphocytes, and high endothelial venules (Kracke et al., 1997). Again, these are also characteristic signs of other tonsils. On the other hand, a typical "capsule" at the adluminal surface is missing; but this connective tissue layer is poorly developed also in the lingual or tubal tonsils.

A probably important tissue structure in the subchapter *Tuba uterina*; *Salpinx* is missing. In the center of every mucosal fold of the uterine tube, as well as in the fimbriae of the uterine tubes, dilated lymphatic spaces are situated (Fig. 5). The term lymphatic lacunae of tubal mucosal folds and fimbriae (*lacunae lymphaticae plicae mucosae et fimbriae*) for their description is the most appropriate. These lymphatic lacunae were first time mentioned in the habilitation thesis of German physician Paul Kroemer in 1904, and may be responsible for the thickening of the fimbriae during the oocyte pick-up before fertilization and may be important for the maintenance of the tubal fluid (Varga et al., 2018c).

4. Terms, which need scientific discussion before the 2nd edition of TH

In the histological description of the thymus, a primary lymphoid organ, medullary thymic lymphoid nodules are mentioned (*nodulus lymphoideus thymicus*). Lymphoid nodules containing B-lymphocytes and their activated forms are characteristic features of secondary lymphoid organs. They may occur also in the wall of digestive, respiratory and genitourinary systems, collectively termed as mucosa-associated lymphoid tissue. In general, B-lymphocytes are also normally present in low number in the thymic medulla, especially around thymic corpuscles of Hassall (Mikušová et al., 2017). However, it is questionable, whether well developed lymphoid nodules are found in the human thymus under normal conditions as described by Mills (2012), or they are present exclusively during pathologies, e.g. autoimmune myasthenia gravis with thymic follicular hyperplasia (Marx et al., 2018). In the first case, there are two possibilities which can explain the occurrence of

Table 1
Terms listed in the TH but are not mentioned as an independent term in any histological textbooks.

Terms
Textus osseus fasciculatus (bundle bone as the third type of bone tissue)
Medulla ossium gelatinosa (gelatinous bone marrow, as the third type of bone marrow)
Textus connectivus fusocellularis (fusocellular connective tissue is mentioned two times – as a type of connective tissue proper and as a tissue type within the ovary)
Tunica spongiosa (spongy layer of the vagina)
Pars profunda corticis (tertiary or deep cortex of the lymph node, as a part of the cortex but different from the paracortex)
Arteria vaginata pulpae albae (sheated artery of the splenic white pulp, different from the central arteriole)
Glandula mucosa (mucous gland of the urinary bladder, in the area of the urinary bladder trigone)

B-lymphocyte-containing lymphoid follicles in the normal human thymus. Firstly, the thymic medulla is not a "typical" primary lymphoid organ, since it is not left out of the entry of circulating lymphoid cells generated in the secondary lymphoid organs and also it has some similarities with the secondary lymphoid organs (Pabst, 2007). Only the thymic cortex is a typical primary lymphoid organ. The second explanation is based on the unusual subdivision of the thymic parenchyma into two compartments, as proposed by Levine and Rosai (1980). The first thymic compartment is the "true parenchyma", the cortex and medulla, while the second compartment comprises perivascular spaces, which may be filled with B-lymphocytes. This second explanation also asserts that thymic lymphoid nodules are localized exclusively within the perivascular spaces and are separated from the thymic parenchyma by the basal lamina (Vetters and Barclay, 1973). Similar are the findings of Bódi et al. (2015), who subdivided thymic medulla to keratin-positive and keratin-negative areas. The medullary keratin-negative areas contain blood vessels, dendritic cells and B-lymphocytes, and they are separated from the medullary keratin-positive areas by a discontinuous basal lamina.

Some new terms appeared in the *Terminologia Histologica* (Table 1), however, after a thorough review, we have found no mention of these terms in current internationally used textbooks of histology (Gartner, 2018; Kierszenbaum and Tres, 2016; Lowe and Anderson, 2015; Mescher, 2016; Mills, 2012; Ovalle and Nahirney, 2013; Ross and Pawlina, 2016; Young et al., 2014). Of course we are not implying that this absence automatically undermines the significance of these terms. Perhaps, the novel research from which they have arisen is so revolutionary and recent that simply there was not enough time to meet the "deadline" for their transition from "laboratories into textbooks". Moreover, these new terms are not explained in the *Terminologia Histologica*. Thus we think that if a scientific community/expert commission decides to keep these terms included as they are deemed relevant, their definition is inevitable. Without proper definition and examples of their occurrence, they will be used neither in histological practice nor in human histology teaching.

In some histological textbooks (e.g. Ross and Pawlina, 2016) the bundle bone and woven bone are described as synonymic terms. In case of the deep cortex of the lymph node, some authors (e.g. Young et al., 2014) consider this part to be the same as paracortex (i.e. deep cortex and paracortex are synonymic terms). Finally, mucuous glands of the urinary bladder are mentioned in the textbook by Gartner (2018) within the lamina propria of the region in close vicinity to the uretheral orifices, but not in the whole trigone of urinary bladder.

Furthermore, some of these terms are also misleading. For example, according to the TH, the ovarian connective tissue is termed as "fusocellular connective tissue". However, for a patholo-

gist, there is a different connotation, as the name is similar to some forms of neoplasms like fusocellular gonadal stromal tumor of the testis (Nistal et al., 1996), or testicular fusocellular rhabdomyosarcoma (Martorell et al., 2010). We assume that the proponents of this term tried to highlight the abundance of fusiform or spindle-shaped cells, i.e. fibroblast-like cells in this connective tissue. But similar cells are present in general in the connective tissue proper, e.g. the lamina propria of the uterus is extremely "cellular" and made up mostly of fusiform fibroblasts – population of precursor cells, which further differentiate into decidual cells after implantation of the embryo.

Similarly, we think that the term "gelatinous bone marrow" does not belong into the set of terms of the normal histology. Gelatinous transformation of the bone marrow was first observed in the 20th century in the autopsy specimens from patients with prolonged starvation and cachexia; it is a rare hematological condition associated with numerous etiologies, and represents a marker of underlying severe disease (Barbin and Oliveira, 2017). It was earlier described mainly in association with anorexia nervosa and psychiatric eating disorders, but recently it was reported also in ulcerative colitis, tuberculosis, chronic renal diseases, immunosuppressed states, and malignancies (Singh et al., 2016). Without proper explanation of the differences between microscopic structure of the fatty (yellow) bone marrow and gelatinous bone marrow, but also without straightforward evidence of the gelatinous bone marrow in physiological conditions, this new term has little chance to catch on and become firmly established in histological practice.

We presume that the term "spongy layer of the vagina" originated from the occurrence of numerous thin-walled venous plexuses within the subepithelial connective tissue of the vagina. However, the TH lacks a clear distinguishing, whether the spongy layer is identical with the lamina propria of other hollow organs, or there is a separate mucosa of the vagina (not mentioned in the TH), while the spongy layer lies underneath. It is also necessary to keep in mind that the structure of the vaginal wall is not uniform. For instance, a recent research indicates that there is no apparent erectile or "spongy" tissue in the anterior vaginal wall, except a single spot where the urethra abuts the clitoris distally (Hoag et al., 2017).

There is also rather chaotic description of the splenic microcirculatory blood flow in the current *Terminologia Histologica*. Firstly, the TH presented a completely new term – *arteria vaginata pulpae albae*. For the sake of completeness, *Terminologia Embryologica* (FIPAT, 2017) designates it as *arteriola vaginata pulpae albae* (artery vs. arteriole). But in the recent histological textbooks only arteria/arteriola centralis, with the T-lymphocyte sheath surrounding it, is always mentioned. According to the TH, the direction of the blood flow would be illogically backward, from arterioles to arteries (Table 2). Apart from *arteria vaginata*, the splenic red pulp also features arteries (red pulp arteries) according to the TH, while normally it should contain only arterioles and their branches, regarding to their wall structure and the diameter. The occurrence of peri-arteriolar macrophage sheath (*vagina periarteriolaris macrophagocytica*) around penicillar arterioles of the splenic red pulp is also questionable in humans, as the majority of scientific publications mention this structure only in animals, however not around arterioles, but surrounding capillaries exclusively (so-called sheathed capillaries of Schweigger-Seidel). The majority of scientific publications are investigated on animal models, where are present the species differences (Haley, 2017; Cesta, 2006), just several authors focused directly to human splenic vasculature (Steiniger et al., 2018, 2011; Zhu et al., 2015). Table 2 sums up the divergences in arterial portion of the human splenic microcirculation according to recent scientific papers.

Table 2
The blood microcirculation in human spleen, according to *Terminologia Histologica* and selected current widely accepted histological textbooks or scientific articles (*note*: divergences are only in arterial portion of blood circulation, venous portion match).

Name of the book or article	Description of splenic human blood circulation
Terminologia Histologica (2008)	Trabecular artery – sheathed artery of white pulp (*arteria vaginata pulpae albae*) – central (nodular) arteriole – red pulp artery – penicillar artery – penicillar arteriole – sinusoids (Fig. 6)
Gartner (2018) Color Atlas and Text of Histology	Trabecular artery – central artery/arteriole – follicular artery (branches of central artery within lymphoid nodule) – penicillar artery (division into the three regions: pulp arteriole, sheathed arteriole, terminal arterial capillaries) – sinusoids
Kierszenbaum and Tres (2016) Histology and Cell Biology	Trabecular artery – central artery/arteriole (also called follicular arteriole) – radial arterioles (branches of central artery within lymphoid nodule filling marginal zone sinuses) – penicillar artery/arteriole – macrophage sheathed capillaries – sinusoids
Mescher (2016) Junqueira's Basic Histology	Trabecular artery – central arteriole – penicillar arteriole (some are sheathed capillaries) – sinusoids
Ross and Pawlina (2016) Histology	Trabecular artery – central artery – penicillar arteriole – sheathed capillaries – sinusoids
Mills (2012) Histology for Pathologists	Trabecular artery – central arteriole – penicillar arteriole – sheathed capillaries – sinusoids
Kushumi et al. (2015)	Trabecular artery – central artery (does not directly serve as branches into the nodules) – penicillar artery (branch of the central artery, makes a hairpin returning back to the follicle to form a capillary bed there) – sheathed capillaries – sinusoids
Steiniger et al. (2011) and Steiniger et al. (2018)	Trabecular artery – central artery – penicillar artery (numerous arterial ends in splenic cords) – sheathed (originating from arterioles bending around the follicle surface) capillaries and non-sheathed capillaried (fed by sheathed ones approaching perifollicular region, all ends are open!) – sinusoids
Cesta (2006)	Trabecular artery – central arteriole – penicillar artery – arterial capillaries – sinusoids
Haley (2017)	Trabecular artery – small arteriole branches – red pulp – central arteriole – small arteriole branches – white pulp capillary beds with termination at the marginal sinus, marginal zone or red pulp – penicillar arterioles – sinusoids
Zhu et al. (2015)	Trabecular artery – central arteriole – penicillar arterioles – sheathed arterial capillaries – sinusoids

5. Discussion and future perspectives

Before the publishing of the second and revised edition of *Terminologia Histologica*, several important issues need to be clarified. Firstly, should all the major anatomical parts mentioned in the TH feature their whole histological structure? The answer seems to be simple and clear – yes. Then, e.g. the term *labium majus pudendi* should be further classified including the subterm *cutis labii majoris pudendi* with all the adnexa present, to distinguish it from the skin of *labium minus pudendi* which features a bit different composition of the skin derivates.

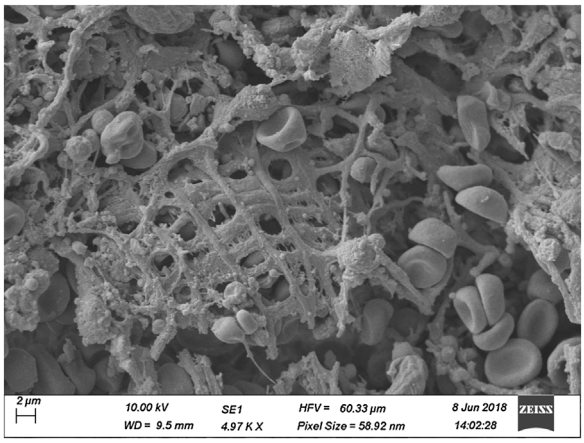

Fig. 6. An outer view of the surface of a splenic sinusoid from the human red pulp, erythrocytes are localized extravascularly, among splenic cords (scanning electron microscope).

Secondly, the *Terminologia Histologica* contains an abundance of synonymic terms, perhaps describing the same structure only in different organs. A typical example for this kind of discrepancy is the usage of term for a sinusoid. In the subchapter *Hepar*, it is listed as *vas sinusoideum*, in the subchapter *Splen* as *vas sinusodeum splenicum*, in the subchapter *Hypophysis* there is the longest term *vas capillare sinusoideum adenohypophysiale*, and finally in the subchapter *Vas capillare* there is a general term *Vas capillare sinusoideum*. We can see the inconsistence in the order and existence of adjectives and it is necessary to unify them as *vas capillare sinusoideum*. Similar situation occurs in the description of types of endothelial cells in the chapter Cardiovascular system. Without any definition or deeper description, the terms mentioned below make an impression of synonymic terms, even though they are presented as distinct types of endothelial cells. Unfortunately, without any definition these terms are not applicable in practice:

- *Endothelium fenestratum* (fenestrated endothelium)
- *Endothelium perforatum* (perforated endothelium)
- *Endothelium disjunctum* (discontinuous endothelium)

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