The term lepidic is used prominently in the recently published multidisciplinary classification of adenocarcinoma. The lack of use in common (nonmedical) English has led to some confusion over the proper definition of this term. This historical perspective traces the history of the term lepidic from its origins at McGill University in Montreal, Canada, through its uses in English pathologic descriptions, to its current state in pulmonary pathology.


With the advent of the new classification system for adenocarcinoma there has been a recent interest in the origin and definition of the word lepidic. With this renewed interest, several misinterpretations have been put forth. Some are easy to dismiss, such as the common mistake of calling a lesion “lipidic,” as though it were composed of fat. However, other issues, such as determining the origin and etymology of the word, have proven trickier. Turning to the Oxford English Dictionary results in a fruitless search, as the word is not listed therein. In fact this word is a neologism, a new word invented in Canada in the early 1900s.

A TERM IS BORN

John George Adami, MD, (Figure 1) was born at Ashton-on-Mersey, Lancashire, England, on January 12, 1862. After studying in Manchester, Cambridge, Breslau, and Paris, Dr Adami arrived at McGill University in Montreal, Canada, in 1892. As a professor of pathology, he was described as being interesting and having a peculiar charm. He wrote of the pathology course, “It is quite true that the ignorant and the quack can render himself rich, and it is true that he may manage to effect apparent or even real cure without knowing a word about the science of medicine but the object of this [pathology course] is not to make a man rich, but is to make him thoughtful and useful to the community.”

Adami was a prolific writer, and he first used the term lepidic in an address to the Toronto Pathological Society on January 4, 1902. In his lecture titled “Original Communication on the Classification of Tumors,” he proposed 2 new terms that would be used to classify all neoplasms. The term lepidic (from ληπίς, λεπίδος, meaning a rind, skin, or membrane) was applied to tumors that appeared to be derived from surface-lining cells. The term hylie (from ὑλή, meaning crude undifferentiated material) was applied to tumors that appeared to be derived from connective tissues.

When he was a young man, Adami was advised by his teacher, Michael Foster, a student of Aldous Huxley, to “take warning never to write a textbook. If it is a failure it is to be thrown away and worse than wasted. If it is a success it is a millstone around your neck for the rest of your life.” Despite this advice, in 1908 Adami published the first part of his 2-volume textbook Principles of Pathology. The tumor classification was a source of great pride, and it was reproduced in this text along with several other new terms, some that became obsolete (eg, lepidoma) and others that became widely used (eg, mesothelium).

MATURATION OF THE TERM

The term lepidic laid relatively dormant for many years, making rare appearances in textbooks of pathology, until the 1950s and 1960s when it was included in several textbooks including Spencer’s Pathology of the Lung, Russell and Rubinstein’s Pathology of Tumours of the Nervous System, and Gould’s Pathology of the Heart. The first two of these texts are by British authors, and the last uses the term when referencing an article from the University of Leeds. Perhaps this anglocentricity is reflective of the fact that Dr Adami concluded his career as vice-chancellor of the University of Liverpool. In contrast, the term lepidic was only rarely observed in American medical literature during this time. This absence is brought to light in the written records from the San Antonio Society of Pathologists’ eighth annual tumor seminar in 1952, given by Dr Matthew J. Stewart from Leeds, England. In his opening remarks, he was compelled to define this elusive term by stating, “I ought perhaps to mention that I shall probably make frequent use of two terms introduced nearly fifty years ago by the late Professor J. G. Adami of McGill University, Montreal, which I have found useful but which, regrettably, have not come into general use. The terms in question are ‘hylie’ and ‘lepidic,’ meaning respectively a pulplike type of structure...
and a covering-cell type of structure without embryo implications.

It is around this same period that the terms lepidic and hylic underwent a subtle change in meaning. In Herbert Spencer’s Pathology of the Lung published in 1962, he stated that tumors may grow into the surrounding alveoli either filling them with a solid mass of malignant cells (a hilic [sic] growth) or lining their walls (a lepidic growth). This is a minor alteration in definition; however, this is where the modern definition of tumor growth along intact alveolar septa arose.

ETYMOLOGY MEETS ENTOMOLOGY

In the early 1990s the erroneous belief that the term lepidic came from the etymologic origin “butterfly” became prevalent. In one of the earlier references to this point it is stated that “Liebow coined the term lepidic.” However, Averill Liebow never used the term lepidic in any of his published works. Instead, he preferred to use descriptive terminology such as “tending to use the walls of pre-existing alveoli as supporting stroma.” The term is not found in Liebow’s Atlas of Tumor Pathology published in 1952 by the Armed Forces Institute of Pathology (AFIP). However, the term makes an undefined appearance in the AFIP’s second series by Carter and Eggleston in 1980. The changing definition of the term is highlighted in the AFIP’s third series by Colby, Koss, and Travis published in 1995. In this text, lepidic is defined in one instance as meaning “scale-like” and in another as “calling forth the image of a butterfly (genus: Lepidoptera) alighting on intact alveolar walls.” Similar to Monarch butterflies migrating across the continent, the term lepidic migrated throughout the pulmonary literature. Soon the term was stated to mean, “like a butterfly resting on a branch,” “resembling butterflies sitting on a fence,” “butterflies alighting on shrubbery,” vague resemblance in cross-section to a butterfly,” and a reference “to the scales of the butterfly wing.” While these colorful and useful metaphors evoked both the microscopic morphologic appearance and the possible aerogenous mode of dissemination, they were unrelated to the source of the term. Lepidic did not have an entomologic etymology.

CONCLUSION

So where does this leave us today? In the new classification of adenocarcinomas, the term lepidic is defined as tumor cells proliferating along the surface of intact alveolar walls without stromal or vascular invasion (Figure 2). This is a slightly different definition from that originally proposed by Dr Adami (derived from surface-lining cells) or what Dr Spencer stated (having an alveolar arrangement); and it is certainly different from any butterfly-derived meaning. Do not despair; pathologists have defined the word many times before and it looks like we have done it again.

References
2. Adami JG. Pathological Notes. Montreal, Canada: John Lovell & Son; 1898.

Figure 1. John George Adami, MD, first chair of pathology at McGill University (Montreal, Canada) and creator of the term lepidic. This photo, which hangs on the wall outside the chair’s office, is reproduced courtesy of the Department of Pathology, McGill University.

Figure 2. Lepidic pattern of adenocarcinoma, characterized by noninvasive surface alveolar growth of tumor cells (hematoxylin-eosin, original magnification x200).