

Cell nucleus and English letters

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Cell nucleus and English letters seem to be two totally unrelated concepts. How could they be connected?

White blood cells (WBC) are an important part of human body; in particular, neutrophil accounts for a large proportion of WBC and is large in quantity, along with varied karyotypes. Thus, neutrophils are responsible for maintaining body health and fight against various pathogens. Therefore, the white blood cell count changes when the disease occurs, and the change of neutrophils is especially active. When a patient seeks treatment in a hospital, the doctors will observe the changes of WBC and neutrophils during disease diagnosis and treatment.

In hospitals, automated hematology analyzer is often used to analyze the number of blood cells; these data often can objectively and accurately reflect the changes of blood cells (including WBC and neutrophils). Thus, the clinical laboratories validate the results of blood cell analysis and then issue test reports. However, in some cases, hematology analyzer can only provide the number of the “normal” cells and cannot validate the numbers of cells with morphological changes or immature cells; these abnormal changes should be further examined under microscope by laboratory staff to obtain the correct answer.

I myself often carefully observe the abnormal morphological changes of these blood cells under microscope. You will find many interesting phenomena during the work, including the morphological changes of WBC, in particular a variety of interesting and variable karyotypes of the neutrophils, which may even stir an impulse to artistic creation. Neutrophils have nuclei, which are often segmented nucleus; under normal circumstances, they have 2–4 sub leaf nucleus. While the slightly naive cells can be band form

nucleus, the transitional nuclei are hyper segmentation and the configuration of the nucleus changes in a random, natural, and disordered manner, forming some special morphologies and structures.

At the beginning of my career, I found that the nuclei of neutrophils are very close to Arabic numerals. Then, I paid special attention to the neutrophils with such karyotypes and took photos, which resulted in the initial work titled “The Cells Are Numerals” (*Figure 1*). During the subsequent work, I found these numeral-like cellular karyotypes also look very similar to the English letters. Then, I began to photo and collect neutrophils with a shape similar to English letters. Some of the neutrophils with karyotypes that look like L, C, U, V, Z, N, O, and I are easy to photo, and almost all of them are composed of neutrophils with band form nucleus. Neutrophils with the configurations of some other English letters including D, E, W, M, G, P, X, and Y are less common, but can also be found within one year. Neutrophils with the configurations of English letters including A, B, H, Q, K, and R are most difficult to find, among which cells with the configuration of letter Q is hyper segmentation granulocyte. Interestingly, for some cells, one letter can become another only by changing the photographing angle, such as U and C, E and M and W; and Z and N, etc. However, to ensure the quality of the work and the uniqueness of the graph, the cellular configurations selected are 26 totally different cells; after cropping and editing, these cells form a work title “The ABC of Cells” (*Figure 2*). I have spent almost three years in this work, during which hundreds of blood smears were observed and thousands of photos were taken. Too often I used a better, more similar, and more satisfying image to

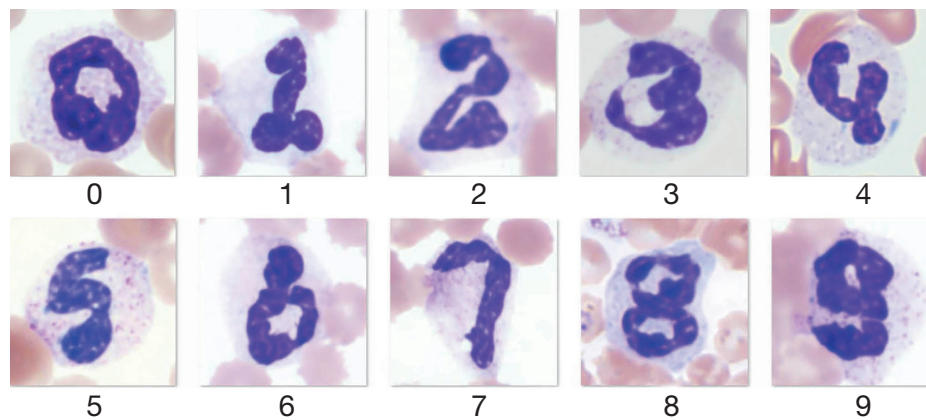


Figure 1 The cells are numerals.

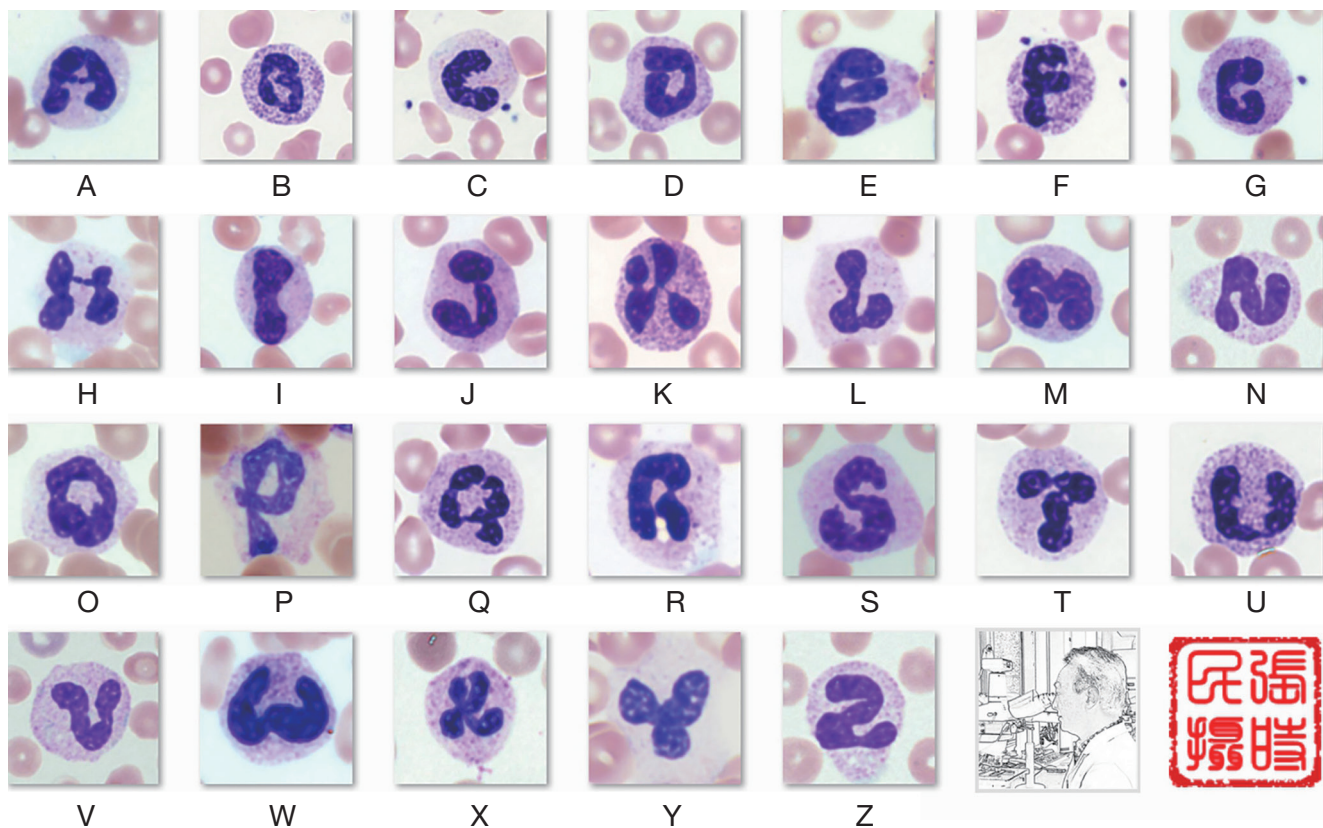


Figure 2 The ABC of cells. ABC, white blood cells.

replace a less satisfying one. Finally, I carefully selected the most suitable and most similar images to form this work.

Observing the blood smears is a highly professional work. You have to view a variety of blood cells under microscope on a daily basis, which may make you feel tired and

boring. But in this process you may have some unexpected discoveries, as already shown in my other single works. Inspiration, original ideas, and potential and ability of artistic thinking and artistic creation may make the boring and repetitive work become more innovative and funny.

You may see the beauty that others may ignore and create artistic works. Work can be art, and the background of artistic creation also comes from the realistic work and the nature, which of course also include the microscopic world that is invisible to the naked eye. Anyway, for a doctor, the most important thing is to identify the valuable pathological changes in blood cells, so as to provide the correct testing and diagnosis reports for clinical use.

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Footnote

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