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An Integrating Perspective

Integrins are transmembrane proteins involved in the adhesion of cells to each other and to the extracellular matrix. They also play a role in cell growth, proliferation, and may participate in the inflammatory response. In this issue, Blok et al. (1), describe the increased expression of integrin $\alpha 6\beta 4$ at the basement membrane zone lining the sebaceous glands in hidradenitis suppurativa (HS), a disease in which much remains to be discovered.

It is therefore curious to see which other diseases may be characterised by up-regulation of integrins. Interestingly, an increased expression of integrins is also seen in two inflammatory diseases that are histopathologically comparable with HS: Crohn's disease and periodontal disease (2, 3). The similarities between HS and Crohn's disease have been noted previously and appear supported by these new findings (4, 5). The possible central role of integrins in this context is further made interesting by the development of anti-integrin antibodies in the treatment of Crohn's disease (6).

These diseases have another important factor in common, *viz.* bacterial colonization. While it is widely acknowledged that HS is not a simple infection, the microbiome is a likely co-factor in the development of the disease (7). Recent studies have indicated both the presence of a specific microbiome as well as of biofilm in HS and Crohn's disease (8, 9). The increased expression of integrins can be speculated to be either a cause or a consequence of dysbiosis. The findings of Blok et al. (1) in the sebaceous glands may therefore indicate an exciting new pathway to pursue in the quest for better understand the complex interplay between bacterial colonization, immunity and structural predisposition of disease.

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Gregor Jemec
Section Editor