Infectious Disease Images: A Remarkable, Free Resource

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Infectious Disease Images (idimages.org) features several hundred with a vast array of diagnoses. The website is organized by cases and images and boasts an atlas with scores of bacteria, viruses, fungi, parasites, and ectoparasites. As a free resource, Infectious Disease Images lends itself nicely to both learners and educators at all levels.

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Legionella cavitary pneumonia [1], periorbital Buruli ulcer [2], disseminated coccidioidomycosis [3], and several hundred additional cases are available at Infectious Disease Images (idimages.org). Created by the Infectious Diseases Divisions of the Massachusetts General Hospital (MGH) and the Brigham and Women's Hospital in collaboration with the Ragon Institute of MGH, Massachusetts Institute of Technology, and Harvard, the website also pulls cases from prior IDWeek conferences and academic institutions across the globe. The site is not intended for a general audience, and it is not meant to be used as a guide for the management of individual patients. Instead, it serves as a remarkable educational resource for all learners and educators interested in infectious diseases.

The site is organized by cases, images, and the atlas (Figure 1). Whether accessed on a computer or handheld device, the website's layout is consistent and navigable; however, the smartphone version of the site does not include the “My ID Images” section of user-saved website entries. With the website's permission, a video example of the website's use is available online (URL https://www.youtube.com/watch?v=w558m8Q5SH4). In general, cases offer succinct descriptions of presenting symptoms, diagnostic maneuvers, and clinical courses of real patients with a vast array of diagnoses. Most cases are at the level of difficulty of a senior infectious disease fellow. Cases are typically accompanied by discussions that highlight relevant literature surrounding cases' final diagnoses, and a good proportion of cases are recent enough to contain the latest evidence. It is notable that some cases also feature an “annotated version”, which consists of expert interpretation that supplements the case's main text. Images of physical exam findings, imaging studies, histopathology, and a variety of other subject matter accompany cases, and the image database can be searched separately. Image resolution on the site is nonuniform, but most image files are high enough quality to allow for characteristic findings to be appreciated.

Infectious Disease Images also boasts an atlas that consists of content indexed by organism type and alphabetical order. It includes scores of entries on a range of bacteria, viruses, fungi, parasites, and ectoparasites. Each entry displays the organism's characteristic microscopic, histopathologic, or gross appearance. Cases and images within the site's database are also linked to their respective atlas entry to allow for ease of reference. For example, the atlas entry for genus Eikenella includes a Gram stain specimen, the appearance of Eikenella corrodens on blood agar medium, and a hyperlink to its associated case within the site's database.

The website's main strength is its educational value for learners and educators alike. For learners, the cases progress in a standard fashion and provide a differential of causative organisms. There is also a “Self-Test” function that generates a quiz from 5 random cases. These 2 features may prove useful for a medical student learning microbiology or an infectious diseases fellow preparing for board exams. For educators, helpful categories allow images to be searched by diagnosis (eg, acquired immune deficiency syndrome- and human immunodeficiency virus-related infections, bone and joint infections, etc), imaging technique, organism, and laboratory technique. Special collections that group cases and images according to pediatric infectious diseases or cases appropriate for a medical student's knowledge level are also available. These features permit educators to streamline their searches and easily incorporate cases of interest into their respective curricula or didactic materials.

Despite its strengths, the website’s usability and educational value may be improved by implementing select changes. Most
case entries have standardized sections that allow for quick reading; however, the laboratory studies sections are in paragraph form, and the website may benefit from switching to a tabular or bulleted form to allow for easier interpretation. Unlike images accompanying cases, some website entries are images without a related case vignette, and they contain limited information. Although image-only entries can be used as representative examples of a diagnosis of interest, their teaching value may benefit from the addition of brief information concerning associated symptoms or outcome.

Overall, Infectious Disease Images features a well organized, online platform with several hundred entries. One is hard-pressed to find a free infectious diseases resource with equivalent breadth of information and an equally rigorous editorial staff. We find this website to be of great use to both learners and educators with an interest in exploring infectious diseases.

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References

1. Morillas JA, Englund K. Case #19009: A young woman with lupus presenting in late winter with cough. Partners Infectious Disease Images. Available at: http://www.idimages.org/idreview/case/caseid=580. Accessed 12 August 2021.
2. Narayanasamy S, Chang CC, Fuller A. Case #17001: A man developed progressive left eyelid swelling and redness. Partners Infectious Disease Images. Available at: http://www.idimages.org/idreview/case/caseid=528. Accessed 12 August 2021.
3. Pal P, Ahrendsen JT, Lamothe S, Stack C. Case #19008: An otherwise healthy man with unrelenting headaches. Partners Infectious Disease Images. Available at: http://www.idimages.org/idreview/case/caseid=579. Accessed 12 August 2021.