



## Virtual Resident Education with the Dermatologic Society of Greater New York During the COVID-19 Pandemic

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Technology has grown exponentially in this past decade, with a plethora of virtual communities for socializing, emotional support, online purchases, but few opportunities for virtual medical education [1]. Prior to the COVID-19 pandemic, dermatology Continuing Medical Education opportunities for both residents and board-certified dermatologists had been predominantly in-person experiences, limited to those with the time and means to attend these events. Conferences for major dermatology organizations had always been held in-person until recently. Many residents were previously unable to attend educational conferences due to limited academic time, clinical coverage, and cost. However, due to COVID-19, many groups, including the Dermatologic Society of Greater New York (DSGNY), have been forced to adapt to the changing landscape.

The COVID-19 pandemic has resulted in far-reaching changes in resident education. In a survey-based study, 60%

of dermatology residents reported that COVID-19 had negatively impacted their education, with cancelled or postponed lectures and reduced patient volume in clinic [2]. In a survey-based study performed during the pandemic, 80% of residents reported high levels of anxiety regarding the American Board of Dermatology (ABD) certification examination and employment opportunities [3]. On the other hand, in a nationwide survey-based study, 99% of dermatology residents reported that virtual didactics were beneficial during the peak of the pandemic in April 2020 [4]. Thus, COVID-19 has brought about a unique opportunity to dramatically transform resident education and the DSGNY was one of the first dermatology societies to embrace that change.

Dermatopathology education may pose the greatest obstacle to remote learning. Prior to the pandemic, residents typically learned at the microscope by observing dermatopathology signouts [5]. However, with many residents having

limited rotations in dermatopathology, there have been significant disruptions due to the pandemic. In 2020, the ABD changed the testing format from utilizing microscopic slides to digital slides for the dermatopathology component on the boards. Since residents had been traditionally taught at the microscope, many residents felt unprepared for digital dermatopathology. In spring 2020, DSGNY was one of the first organizations to create a free recurring dermatopathology resident education series with Dr. Jason Cohen, a dermatopathologist at DermPath Diagnostics in White Plains, New York. During each session, Dr. Cohen reviewed 15 unknown slides with residents in an interactive format and reinforced a methodical and algorithmic approach to approaching dermatopathology slides. The group regularly reviewed high-yield diagnoses including benign adnexal neoplasms, acantholytic disorders, autoimmune blistering disease, and infections. Residents asked for clarification on specific histologic findings or differentiating specific diagnoses either verbally or via chat. The residents who participated found these lectures incredibly helpful for their overall education and dermatopathology board review. Over 90 residents have participated thus far. We do not know the impact of this series on board pass rates or promoting dermatology residents' interests in pursuing dermatopathology, and these topics merit further study.

Our DSGNY dermatopathology series highlights the benefits of virtual education. Residents with limited dermatopathology didactics at their own residency programs or who wanted additional training could participate in these sessions free of cost, which is helpful on a tight resident budget. Furthermore, residents who are less comfortable asking questions in real-time may feel more comfortable doing so via a virtual platform. Our lecture series is scheduled weekly to monthly and thus shorter lectures may help to circumvent mental fatigue sometimes experienced at lengthy in-person conferences. Residents with children who struggle with childcare are able to attend these lectures from home. Our virtual dermatopathology didactics are now expanding to include additional speakers, facilitating new teaching opportunities for dermatologists not directly tied to academic institutions, and giving residents different perspectives.

These lecture series are open to dermatology residents from across the United States, allowing for a unique opportunity for interactions among residents from different programs and opening the door for collaborations. Residents can learn from others' experiences and questions during teaching sessions. Residents may utilize these virtual sessions as a platform for communication and inform one another of additional teaching sessions or grand rounds at

their home institutions. These interactions may pave the way for cross-institutional research collaborations and dissemination of the newest findings in dermatology relevant to clinical care. It is also interesting to note that this may help residents pick up different approaches to dermatologic differential diagnosis, and gain exposure to approaching different patient populations from those which they are already familiar with.

However, virtual learning does raise concerns about the negative implications of limited human contact. The practice of dermatology is highly team-based, and collegiality is an essential aspect of dermatology education and patient care. Virtual learning experiences make it more difficult to have exchanges about shared patient experiences. While social distancing is necessary, we recommend that virtual networking events have small group breakouts. We are also promoting virtual one-on-one mentorship experiences between residents and attending dermatologists which will transition to in-person meetings when the time permits. Thus, residents who have had limited mentoring opportunities may be able to find a mentor through our structured program. Virtual dermatology education does raise privacy concerns as care must be taken to utilize online platforms that prohibit downloading of patient photos.

The DSGNY has played an important role in promoting resident education during this pandemic. We will continue our virtual education series for New York City dermatology residents and encourage residents from across the country to attend. We hope that this model and spirit of service may lead to similar programs nationwide, all in the interest of improving dermatology resident education.

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