OPINION ARTICLE

COVID-19, pseudo-declining skin cancer rates and the rise of teledermatology [version 1; peer review: 1 approved]

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Abstract

In late 2019, the world was introduced to the novel SARS-CoV-2 virus that shook the global medical community. By early 2020, the new coronavirus strain led to the rapid spread of a disease that earned its classification as a pandemic, prompting authorities to enforce new health regulations that significantly limited access to in-person medical evaluations, and resulted in a significant reduction in skin cancer diagnosis volume over the course of the pandemic. Skin cancer is amongst the most common and frequently diagnosed cancers, with incidence rates steadily increasing for the past few decades, until recently when world-wide changes to the health system drastically reduced opportunities for screening, diagnosis and management. In order to optimize patient treatment in the midst of the pandemic, practicing providers relied heavily on remote alternatives, sparking a huge spike in teledermatology practices globally. The successful adoption of widescale teledermatology allowed improved triage of concerning skin lesions requiring urgent face-to-face assessment, which helped mitigate the repercussions of delayed diagnosis and management. The detrimental consequences of the COVID-19 pandemic have permanently changed the way we view and practice medicine, and it is imperative that the medical community continues to improve modern healthcare, through continued technological innovations that will advance this new technologically-reliant age of medicine.

Keywords

Skin cancer screening, teledermoscopy, covid-19, coronavirus, teledermatology, melanoma, mobile dermoscopy

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Any reports and responses or comments on the article can be found at the end of the article.

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Introduction

For the last few decades, the incidence rate of skin cancer, both melanocytic and non-melanocytic, has been consistently rising, likely due to the increase in sun exposure and increased skin cancer screening practices by clinical providers. Despite the rising incidence rates worldwide, improvement in early detection and thus early treatment of skin cancer, specifically melanoma, has led to an overall reduction in mortality from this disease for the past several years.¹ However, the unprecedented onset of the COVID-19 crisis suspended many scheduled medical and surgical activities, which introduced new barriers to prompt cancer screening and early detection of disease. This is a reasonable explanation for the significant reduction in skin cancer diagnosis reported by many countries during this period. Neglecting skin cancer throughout the outbreak may be associated with increased rates of mortality, morbidity and health care expenses. Therefore, in order to minimize these negative consequences while simultaneously abiding to strict health regulations, many international institutions favored the increased practice of teledermatology, to meet the continued need for treatment of acute and chronic skin diseases.² It remains unknown exactly how long the consequences of the COVID-19 crisis will continue to negatively impact health systems, but the increased utility of telemedicine services will likely be around for the foreseeable future.³ The dermatology community should prioritize improving the efficacy, accuracy and availability of these virtual services in order to preserve the quality of patient care in our ever-evolving society.

Skin cancer screening and management during the COVID-19 pandemic

It is well established that the most important prognostic factor that influences the survival of skin cancer patients is the time of correct diagnosis and start of treatment, especially for melanoma, which is highly fatal.⁴ This understanding is what prompted most practicing dermatologists to be proactive in detecting concerning skin lesions early and treating them as soon as possible, which has improved the overall outcomes of skin cancer patients in recent years. Traditionally, the standard of care for diagnosing skin cancer involves face-to-face evaluation, usually utilizing advanced imaging modalities such as a dermatoscope, with a skin specialist deciding the optimal course of treatment. However, due to limited access to in-person care imparted by the COVID-19 pandemic, many countries have reported a drastic decline in skin cancer diagnosis during this period, suggesting that many skin cancer patients are going undiagnosed and untreated.⁴⁻⁸ In a 2020 study conducted in the United Kingdom (UK), Andrew *et al.* reported a shocking 68.61% decrease in skin cancer diagnosis made during the pandemic.⁵ Similar findings were described in a retrospective study done in Italy that reported a striking 60% decline in new melanoma diagnosis, as well as a 30% reduction in relative surgical activity during the lockdown.⁶ Although skin cancer may be identified clinically via dermatoscopic evaluation by a trained expert, clinically equivocal lesions are often biopsied and diagnosis is confirmed after histopathological analysis. The unexpected COVID-19 crisis posed new challenges to pathology services, that expectedly reduced histopathological diagnosis of skin cancer, as highlighted in a study done in Romania, contributing to the overall global decline in skin cancer rates during the outbreak.⁷ All these studies compared these new findings to trends in skin cancer diagnosis seen pre-COVID, suggesting that skin cancer is being underdiagnosed rather than truly declining in prevalence. This is further supported in another article that reports an increased mean Breslow thickness amongst primary melanoma patients diagnosed after COVID-19-related lockdown restrictions were lifted.⁸ The delay in early detection and management will likely result in poorer prognosis and health outcomes for these patients.

Teledermatology during the COVID-19 pandemic

Due to the sudden appearance of this epidemiological emergency, the strict health restrictions enforced to minimize viral transmission, and the necessity to move almost the entirety of the healthcare force toward providing COVID-19-related services, many previously scheduled clinical and surgical procedures were postponed.⁹ This has been limiting access to high-quality, timely interventions, which is pivotal in determining a favorable outcome, thus decreasing patients' satisfaction and negatively influencing the quality of life for skin cancer patients. One way in which health systems evolved to maintain these essential health services in the field of dermatology during this time, was by offering remote healthcare alternatives. Teledermatology, a subdivision of telemedicine, makes it feasible to connect virtually with quality health care providers, and receive care for nonessential ailments and issues, without exposing either the health care provider or the receiver to the undue risk of infection. This is facilitated by data collection, exchange and analysis over a long distance by various methods of communication, including the audio, video and digital imaging storage that constitute a virtual consultation.¹⁰ Over the course of the pandemic, countries have reported a 10- to 15-fold increase in teleconsultations, and studies reporting experiences with teledermatological services during this time, showed that a continuation of the care for chronic dermatological patients is to a large extent possible only by means of teledermatology.¹¹ Moreover, since the availability of surgical procedures during this time is limited only to patients requiring urgent time-sensitive intervention, teledermatology has also proven to be an excellent tool in triaging high-risk cases that need prioritized face-to-face evaluations. As the demand rises and we become more reliant on these virtual health services, it becomes increasingly important to advance telehealth practices in order to optimize patient care. The incorporation of teledermoscopy and teledermatopathology has been shown to significantly improve the diagnostic accuracy and reliability of teledermatology services by approximately 15%, while only adding an average of one to two additional minutes to the consultation.¹² In addition, newer applications to teledermoscopy such as mobile dermoscopy,

in which mobile devices (smartphones) with dermatoscopic attachments are used to capture and store dermoscopic images, can be taken directly by the patient and provide a convenient in-office-like visit from the comfort of one's home. Previous studies have reported adequate patient satisfaction with teledermatology services; however, a recent survey evaluating patients' satisfaction specifically during the pandemic reported increased satisfaction.¹⁰ Dermatologists in hospitals and practices were able to compensate at least partially for the restricted personal dermatological care of skin cancer patients under the COVID-19 pandemic circumstances, through an extension of teledermatological services. The increased practice and clinical utility of teledermatology enabled continuous care for skin cancer patients during this challenging time, that helped mitigate the consequences of delayed management. While not a replacement for traditional practice, teledermatology has proven to be a safe and efficient adjuvant service, that might shape dermatological patient care well beyond the pandemic. Further evaluation of the accuracy of clinical and dermatoscopic imaging submitted by patients during the COVID-19 pandemic should be carried out, to determine the potential limitations or improvement of care depending on the modality chosen.

Data availability

No data are associated with this article.

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I think the authors did a good job summarizing how the pandemic has affected dermatology, specifically with skin cancer screening. Although the article does not deliver any groundbreaking information and similar articles detailing this phenomenon of decreased skin cancer incidences seen during Covid-19, it does a good job of summarizing what is being seen across many countries and highlights how rather than a true decline in skin cancer rates, we are likely seeing a large sum of people being underdiagnosed. It also did a decent job highlighting the potential of teledermatology to fix this issue and they could even have expanded this topic more. For example, they could have focused on the controversial role played by artificial intelligence in teledermatology since it may be extremely useful, but the majority of patients who have skin cancer are elderly patients and often are inexperienced with new technology and may struggle in navigating various teledermatology systems without assistance. In closing, although teledermatology has its place during the pandemic and its use will be implemented in the future for sure, in-person evaluations will still hold their place post-pandemic.

Is the topic of the opinion article discussed accurately in the context of the current literature?

Yes

Are all factual statements correct and adequately supported by citations?

Yes

Are arguments sufficiently supported by evidence from the published literature?

Yes

Are the conclusions drawn balanced and justified on the basis of the presented arguments?

Yes

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Reviewer Expertise: Teledermatology, dermoscopy, and rare genetic dermatology diseases

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