

Hidden in plain sight: the (other) danger of COVID-19

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The Novel Coronavirus disease (COVID-19) first emerged in Wuhan province, China, in late November 2019 and changed public healthcare perception. It has caused a significant decline in attendance to outpatient clinics. However, other diseases have not stopped, including malignant melanoma. Survey of the number of visits to plastic surgery outpatient clinic during the first lockdown in Israel concerning malignant melanoma was compared to the same months in the previous years. We assessed the number of visits to the oncology department during 2020 compared to the number of visits and treatment protocols for malignant melanoma. During the first lockdown, the attendance at the plastic surgery outpatient clinic and ambulatory surgery decreased significantly ($P = 0.002$), both in excisions of suspected malignant melanoma and malignant melanoma follow-ups ($P = 0.019$ and $P = 0.035$, respectively). The last third of 2020 (from September to December) had shown a significant rise in new protocols commenced ($P < 0.001$). This rise

in the final third of the year was not noted in 2018 or 2019. These data clearly show the rise in advanced and metastatic malignant melanoma cases due to refraining from medical follow-ups and treatments during the COVID-19 pandemic. Diseases other than COVID-19 have not vanished, and continue to treat those diseases. Ignoring malignant melanoma treatment because of COVID-19 and vice-versa will not benefit our patients. *Melanoma Res* 31: 389–392 Copyright © 2021 Wolters Kluwer Health, Inc. All rights reserved.

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Introduction

The Novel Coronavirus disease (COVID-19) first emerged in Wuhan province, China, in late November 2019 [1]. Since then, it has spread worldwide, changing the way patients and health providers think and communicate when addressing public health. The WHO declared COVID-19 as a public health emergency of international concern on 30th January 2020 [2]. First case in Israel was admitted to hospital in late February 2020. Infection in Israel has caused the Israeli government to declare a lockdown on 14th March 2020. The government abolished the lockdown on 30th April 2020.

Cutaneous malignant melanoma is a skin tumor that can cause metastatic disease and death. It has been shown that close follow-up can cause a reduction in 5-year mortality [3]. Another research proved that a trained physician's follow-up would probably decrease tumor depth and invasion [4] when a physician trained in recognizing skin tumors examines the patient [5]. Shallower tumors are associated with better prognosis and survival of patients [6].

Patients and methods

Rambam Health Care Campus (RHCC) is a tertiary hospital located in Haifa, Israel. RHCC is the referral center for the entire northern region, Haifa city, and Hadera city

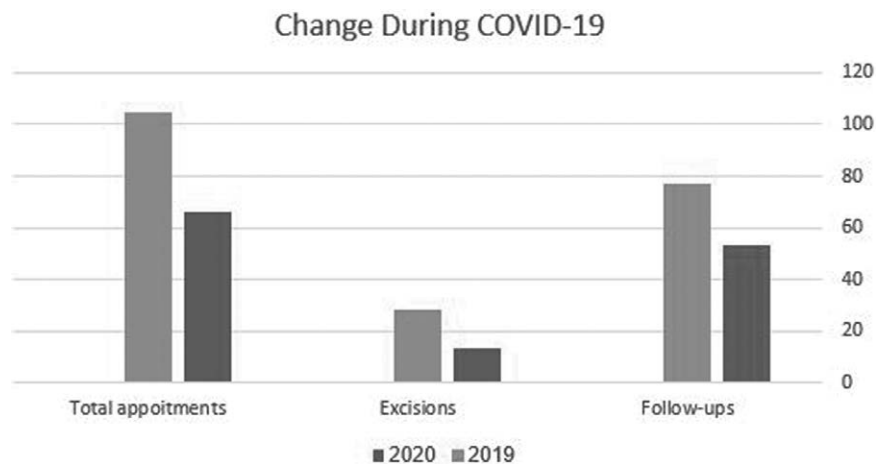
districts, encompassing about 2.7M people [7]. RHCC offers various treatments for malignant melanoma, ranging from wide local excision (WLE) to advanced chemotherapy and end-of-life treatment. Malignant melanoma treatment is coordinated through a designated forum composed of experts in oncology, dermatology, and plastic surgery.

The first part of the study included a search for the population attending the plastic surgery outpatient clinics concerning malignant melanoma. The clinic offers WLEs and surveillance for malignant melanoma patients after the excision of tumors. These data were retrieved about the time frame of the lockdown and the same dates in previous years.

The second part of the study was retrieving the data regarding oncology department daycare for malignant melanoma patients. Patient data with malignant melanoma diagnosis and protocols of treatment were retrieved, encompassing the years 2018–2020.

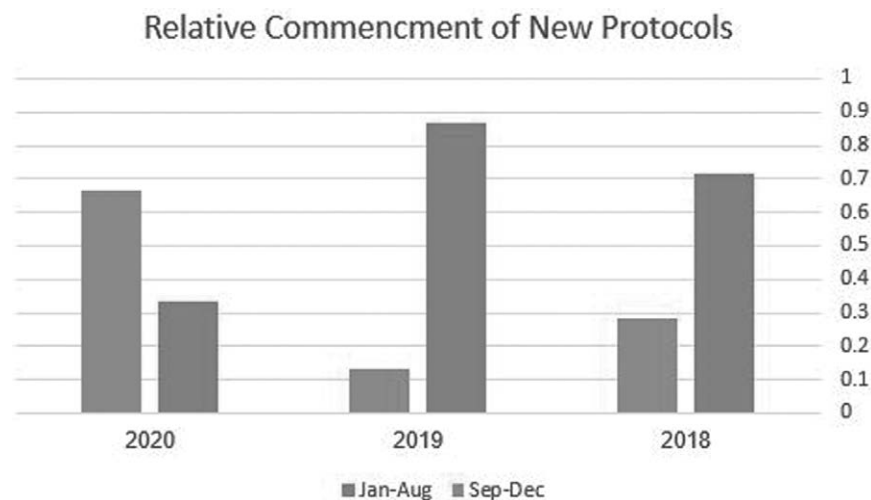
The student's *t*-test was applied for continuous variables. Chi-square test was used for categorical variables analysis. A *P*-value of 5% or less was considered statistically significant. The data were analyzed using the SPSS version 23 (SPSS Inc. Chicago, IL, USA). The RHCC ethical committee approved this study.

Fig. 1



Decrease in malignant melanoma workload during the lockdown.

Fig. 2



Rise in protocols commencement. Jan-Aug: January to August; Sep-Dec: September to December.

Results

During the first lockdown, the attendance at the plastic surgery outpatient clinic and ambulatory surgery decreased significantly. Total appointments concerning malignant melanoma, either for follow-up or excisions, went down from 105 in 2019 to 66, during the lockdown ($P = 0.002$). Excisions of suspected melanoma went from 28 to 13 ($P = 0.019$), and follow-up appointments went down from 77 to 53 ($P = 0.035$). The decrease in workload reflects an overall decline of almost 50% in melanoma-related meetings. Malignant melanoma-related activity is presented in Fig. 1.

Oncology workload due to malignant melanoma decreased significantly during 2020, with a total of 1413

appointments regarding malignant melanoma vs. 1746 during 2019 ($P = 0.005$). Regarding the treatment regime, the last third of 2020 (from September to December) had shown a significant rise in new protocols commenced, with eight new protocols in the final third of 2020 vs. only four in the rest of the year ($P < 0.001$). This rise in the last third of the year was not noted in 2018 or 2019. Relative commencement of new protocols in each year is presented in Fig. 2.

Discussion

COVID-19 has changed the public perception of health access and healthcare. While hospitals' general workload increased [8], the outpatient clinic's attendance had

decreased remarkably [9,10]. The same is true to departments previously thought to have had high demand, such as emergency department [11] or clinic for chronic patients, in need of their regular treatment [12]. This trend is similar to the data seen in our plastic surgery outpatient clinic and was emphasized by the general lockdown of March–April 2020. With people unwilling to leave their homes and fearing to contract COVID-19, the physicians found themselves persuading the patients to attend their appointments. This persuasion was not evenly distributed among all patients. Special care and pressure to keep the appointments were given to patients with malignant diseases, and first and foremost malignant melanoma. We were unable to persuade the patients. About 50% decided not to come to a routine follow-up or have their lesion removed. Some of the patients, while fully aware that they have malignant melanoma, feared the pandemic. Others thought they have a benign lesion or presumed that a delay in diagnosis or excision would not make a difference.

The next link in the chain of malignant melanoma treatment is the oncology department. Once a patient is unresectable, the oncologist is managing the treatment. To find if the delay in diagnosis was clinically significant, we have examined the oncology daycare logs. Oncology daycare had a steep decline in 2019 and 2020 due to management changes and many patients' transfer in early 2019. Even with the decrease in overall attendance to the daycare by over 300 visits, the month-to-month ratio remained similar to previous years.

The real cost of COVID-19, regarding malignant melanoma, was shown in the protocol treatment. Over 2/3 of the new protocols started in 2020 were in the last third of the year. The commencement of new protocols was because melanoma patients attending the daycare in the final third of 2020 were with more extensive disease and requiring a change of treatment regime. A similar trend was noted in the University of Pennsylvania [13]. The physicians there reported a more advanced malignant melanoma presentation in the COVID-19 era.

Our patients do the risk-benefit calculation all the time. During COVID-19, public announcements urged people to stay at home at almost any cost. This behavior of aggressive risk-aversion has been shown to harm people [14]. It is the physician's role to communicate the real risk-benefit ratio to prevent further morbidity and mortality from our patient.

It is still early to judge whether the patients with a possible delayed diagnosis will overcome their disease. It is not early to raise awareness for the impact of delayed diagnosis.

Study limitations

This is a retrospective study. Thus, it relies heavily on the accuracy of the data in the medical chart.

Misrepresentation or omitted diagnosis and inaccurate medical charts might cause a change in the data and its interpretation. The oncology department's malignant melanoma service had changed management, with many patients deciding to continue their treatment in a different hospital. The plastic surgery outpatient clinic is one of the many clinics offering a malignant melanoma follow-up in the Haifa city metropole area.

Conclusion

COVID-19 had changed our society and our healthcare. With that in mind, one must remember that other diseases have not vanished and continue to treat those diseases. Ignoring malignant melanoma treatment because of COVID-19 and vice-versa will not benefit our patients. We must remember that malignant melanoma is a malignant disease, which requires close follow-up, examinations, and prompt treatment. It is our duty as physicians to elucidate this to our patients. While they rightly fear the possibility of contracting COVID-19, our patients should know the cost of refraining from a visit. This cost is imminent and rapidly collected in the form of advanced metastatic disease.

Acknowledgements

Conflicts of interest

There are no conflicts of interest.

References

- Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, *et al.* Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; **395**:497–506.
- WHO. IHR Emergency Committee on Novel Coronavirus (2019-nCoV) [Internet]. [Cited 2021 January 22]. [https://www.who.int/director-general/speeches/detail/who-director-general-s-statement-on-ih-er-emergency-committee-on-novel-coronavirus-\(2019-ncov\)](https://www.who.int/director-general/speeches/detail/who-director-general-s-statement-on-ih-er-emergency-committee-on-novel-coronavirus-(2019-ncov)). [Accessed 20 April 2021]
- Breitbart EW, Waldmann A, Nolte S, Capellaro M, Greinert R, Volkmer B, Katalinic A. Systematic skin cancer screening in Northern Germany. *J Am Acad Dermatol* 2012; **66**:201–211.
- Waldmann A, Nolte S, Geller AC, Katalinic A, Weinstock MA, Volkmer B, *et al.* Frequency of excisions and yields of malignant skin tumors in a population-based screening intervention of 360,288 whole-body examinations. *Arch Dermatol* 2012; **148**:903–910.
- Kantor J, Kantor DE. Routine dermatologist-performed full-body skin examination and early melanoma detection. *Arch Dermatol* 2009; **145**:873–876.
- Gershenwald JE, Scolyer RA, Hess KR, Sondak VK, Long GV, Ross MI, *et al.*; for members of the American Joint Committee on Cancer Melanoma Expert Panel and the International Melanoma Database and Discovery Platform. Melanoma staging: evidence-based changes in the American Joint Committee on Cancer eighth edition cancer staging manual. *CA Cancer J Clin* 2017; **67**:472–492.
- Central Bureau of Statistics. Household Census; 2018. 2018p.
- Miller IF, Becker AD, Grenfell BT, Metcalf CJE. Disease and healthcare burden of COVID-19 in the United States. *Nat Med* 2020; **26**:1212–1217.
- Wosik J, Clowse MEB, Overton R, Adagarla B, Economou-Zavlanos N, Cavalier J, *et al.* Impact of the COVID-19 pandemic on patterns of outpatient cardiovascular care. *Am Heart J* 2021; **231**:1–5.
- Khalil A, von Dadelszen P, Kalafat E, Sebghati M, Ladhani S, Ugwumadu A, *et al.* Change in obstetric attendance and activities during the COVID-19 pandemic. *Lancet Infect Dis* 2020. [Epub ahead of print]
- Vollmer MAC, Radhakrishnan S, Kont MD, Flaxman S, Ferguson N, Hauck K, *et al.* The impact of the COVID-19 epidemic on patterns of attendance at emergency departments in two large London hospitals: an observational study. 2020, PREPRINT (Version 1) available at Research Square. <https://doi.org/10.21203/rs.3.rs-45465/v1>.

- 12 Borrelli E, Grosso D, Vella G, Sacconi R, Querques L, Zucchiatti I, *et al.* Impact of COVID-19 on outpatient visits and intravitreal treatments in a referral retina unit: let's be ready for a plausible "rebound effect". *Graefes Arch Clin Exp Ophthalmol* 2020; **258**:2655–2660.
- 13 Shannon AB, Sharon CE, Straker RJ, Miura JT, Ming ME, Chu EY, *et al.* The impact of the COVID-19 pandemic on the presentation status of newly diagnosed melanoma: a single institution experience. *J Am Acad Dermatol* 2020; **84**:1096–1098
- 14 Långström B, Grahnen A, Honoré PH, Borlak J, Bergstrom M, Nielsen B, *et al.* The risk of exaggerated risk aversion-a life and death struggle for molecular imaging. *Eur J Nucl Med Mol Imaging* 2009; **36**:1693–1694.