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My Thoughts / My Surgical Practice

Improvements in cancer care through changes implemented during the COVID-19 pandemic



The COVID-19 pandemic has posed an unprecedented challenge to healthcare systems by mandating resource re-allocation in the face of rapidly increasing patient care needs.^{1,2} Maximizing healthcare benefits for the most people has necessitated systemic changes in communication with patients and their families, including limiting face-to-face visits for patients with chronic medical conditions, including cancer.³ However, cancer patients are a particularly vulnerable population, as prompt diagnosis and communication can influence the receipt of care and ultimate oncologic outcome. Recent meta-analyses have shown that delays in surgical, systemic, or radiation treatments as short as 4 weeks are associated with decreased overall survival for certain cancers.^{4,5} Furthermore, there has been an undeniable disruption of cancer services through provider reassignment to other duties or decreased practice volume; postponed screenings; delayed surgical, radiation, or chemotherapeutic interventions; suspended clinical trial programs; and prioritization of patients with potentially curable disease.^{2,3,6–8} For these reasons, it is essential to better understand the impact of COVID-19 on the communication and timing of cancer-related care. We hypothesized that the methods of communication to discuss surgical pathology results with patients will have transitioned away from in-person visits at the prototypical postoperative appointment to greater frequencies of telemedicine encounters, prompting earlier communication with patients.

We performed a single-institution, retrospective cohort analysis of patients who underwent cancer-related surgical procedures within 6 months before and 6 months after the declaration of the COVID-19 pandemic in the United States. A pandemic start date of 3/1/2020 was chosen based on the statewide mandate for activity restrictions that were instituted in California in mid-March 2020.⁹ This research protocol was approved by the institutional review board of the University of California, Davis. Chronologic information abstracted from the medical record included the procedure date, date of pathology finalization, date that these results were communicated to the patient, and the date of the next non-surgical oncology appointment. Additional information was abstracted regarding the method of communication with the patient, the division performing the procedure, and the final pathology results. Differences in communication method, time to pathology results, and time to discussion were compared across pre- and post-COVID-19 time periods using χ^2 analysis, Fisher's exact test, or the Mann-Whitney *U* test where appropriate. Statistical analyses were performed with SAS software (version 9.4, SAS Institute, Cary, NC). All tests were two-sided and *p*-values < 0.05 were considered significant.

Eighty-one patients were sampled from the pre-COVID-19 period (9/1/2019–2/29/20) and 97 were sampled from the post-COVID-19 period (3/1/2020–8/31/20). A broad distribution of surgical specialties was obtained to eliminate provider or disease differences; most patients

came from specialties associated with the surgical treatment of common cancers including Surgical Oncology (44 [24%]); Gynecologic Oncology (34 [19%]); Urology (29 [16%]); Otolaryngology (21 [12%]); Colorectal Surgery (17 [10%]), and Thoracic Surgery (16 [9%]). The most common cancers evaluated are typical for national incidence as well as specialty expertise at UC Davis and included breast (*n* = 21 [12%]), colorectal (*n* = 18 [10%]), head and neck (*n* = 18 [10%]), endometrial (*n* = 17 [10%]), kidney (*n* = 16 [9%]), and lung (*n* = 13 [7%]).

Most patients in the pre-COVID-19 period were informed of their pathology results through an in-person clinic visit (58 [72%]) or by telephone (14 [17%]). Few patients were notified of their results by video visit (1 [1%]) or while in the hospital (8 [10%]). In the post-COVID-19 period, the majority of communication was through remote encounters (telephone (35 [36%]) or video (18 [19%])), coupled with a significant decrease of in-person clinic encounters (35 [36%]). A similar prevalence of discussion during the hospitalization was observed (9 [9%]) independent of COVID-19 era, likely attributable to patients with a prolonged postoperative length of stay independent of the COVID-19 pandemic. When comparing the pre- and post-COVID-19 time periods, there was a significant difference in the methods of communication utilized to inform patients of their results (*p* < 0.0001).

The median time elapsed from when the final pathology resulted until the patient and/or proxy was informed of these results was 7 days (range 0–48 days) in the pre-COVID-19 period, compared to a median time of 6 days (range of 0–51 days) in the post-COVID-19 (*p* = 0.069). The overall median time elapsed from surgery until discussion with patient was 13 days (range 2–55 days) in the pre-COVID-19 period, compared to 10 days (range 1–54) in the post-COVID-19 period (*p* = 0.0013). Lastly, the median time elapsed from surgery until the next non-surgical oncology appointment was 34 days (range 4–108) in the pre-COVID-19 period and 21 days (range 3–83) in the post-COVID-19 period, *p* < 0.0001. Therefore, following a surgical procedure for cancer, patients were informed of their pathology 3 days faster and were seen at least 7 days sooner at their next oncology appointment during the COVID-19 pandemic. On additional subgroup analysis, the time from surgery to discussion using telemedicine (telephone or video) was not different when comparing pre- and post-COVID-19 periods (*p* = 1.0), which implies that our original findings are attributable to the increased use of telemedicine rather than efficiency changes across periods.

In this single-institution retrospective study of patients who underwent cancer-related procedures, communication methods to discuss pathology results with patients transitioned away from in-person visits to more frequent use of telemedicine encounters. Additionally, in the post-COVID-19 period, pathology results were communicated to patients earlier and transfer of care to the subsequent member of the

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multidisciplinary cancer team occurred faster. Through widespread adoption of telemedicine in the era of COVID-19, we have learned that this tool has the potential to reduce cross-infection, increase access to specialists, decrease costs, and offer convenience if patients have the ability to access this resource.^{10–12} These results show that some processes of cancer care can be quickly adapted to ensure continuity of care in times of resource allocation or austerity.

Despite these findings, there are several important limitations to consider. First, we did not study additional variables such as travel distance, age, primary language, or readmission rates – all of which may relate to the postoperative encounter type. Furthermore, the quality of cancer care also depends on patient perspectives, and some patients may prefer face-to-face meetings when discussing sensitive information such as oncology results. Improvements in timeliness of cancer care may not be important if patients do not feel supported; therefore, future research should incorporate detailed patient perspectives regarding telemedicine in oncology. In conclusion, our single institution results suggest that small changes can preserve or even improve the timeliness of cancer care during periods of crisis. Uncertainty exists whether these changes will become permanent methods of communication with patients regarding critical information.

Disclosure information

Nothing to disclose.

Author contributions

Study design: RB, DB.
Data collection: DB.
Statistical analysis: LP.
Manuscript preparation: LP, RB.
Editing: LP, RB.
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