

Colorectal Cancer Services During the First Wave of the COVID-19 Pandemic

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Abstract...

Background: During the first wave of the COVID-19 pandemic, UK health services ceased National Bowel Cancer Screening programme and non-emergency diagnostic services were halted. This retrospective study evaluated the Colorectal Cancer (CRC) service at a district general hospital during that period by comparing the CRC services from 31/03/2020 to 28/06/2020 to services offered during the same 3-month period of the previous year.

Materials and methods: 65 patients were included in the study (47 from 2019 and 18 from 2020). Demographics, referral modes, treatment aims and Dukes cancer staging at diagnosis were compared. Chi-squared and Fisher's exact tests were used.

Results: There was a 61.7% decrease in the volume of patients managed and 65.7% reduction in operations relative to the previous year. The mean age (years) of 66.6 (S.D 14.1) during the pandemic was lower than the average during the non-COVID year (75.5(S.D 13)) but gender distribution was similar. COVID-year referrals originated from rapid access pathway (61%), emergency (28%), routine referrals (11%), screening (0%) compared to 56%, 21%, 21%, and 2% respectively during the non-COVID period. Dukes staging varied with Dukes D doubling (39% vs 17%) and no Dukes A (6% in 2019) during the pandemic. The treatment goal during the pandemic was palliative in 44% vs 32% in the other group.

Conclusion: Cessation of non-emergency diagnostic pathways that support identification of early disease contributed to diagnostic delays with increased proportion of palliative/Dukes D disease. Normal CRC services should be sustained during future pandemics to avoid missing curable disease.

Key words: COVID-19 pandemic; Colorectal cancer; Bowel cancer screening; Diagnostic delay.

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Background

The first wave of the COVID pandemic occurred during Spring, 2020. UK health services ceased the National Bowel Cancer Screening programme, local non-emergency diagnostic services were halted and adherence of healthcare providers to existing cancer time targets were relaxed [1-3]. Also, the overriding national message was for individuals to “stay home” to stay safe. These two factors; Changes to health care services and changes to health seeking behaviours have resulted in an atmosphere that is ultimately unfavourable to patient outcomes and survival. This retrospective study evaluated the Colorectal Cancer (CRC) service at a district general hospital during that period by comparing the CRC services from 31st March 2020 to 28th June 2020 to services offered during the same 3-month period of the previous year. This study evaluated the effect of this approach to colorectal cancer care by comparing the patients managed by the MDT during a corresponding period of the year in 2019. We evaluated colorectal cancer service during the first wave of the COVID-19 pandemic in Spring 2020. Compare the characteristics of the colorectal cancer services during the first wave of the COVID-19 pandemic (31st March 2020-28th June 2020) to that offered during the same period of the year in 2019 and Identified changes to the service that impact patient care.

Materials and methods

65 patients were included in the study, 47 from the three months period of Non-COVID year (2019) and 18 from the three months period of the COVID pandemic year (2020). The colorectal service offered during the first wave of the pandemic (31st March and 28th June 2020) was compared to a corresponding period in 2019. We evaluated the total number of patients, their demographics, referral modes, treatment aims and Dukes cancer staging at diagnosis. We utilized the colorectal service provided during a non-COVID year as a standard to evaluate the COVID-year service. The data was non-normal in distribution, Pearson Chi-squared test and Fisher’s exact tests were used to evaluate the similarity between categorical variables.

Results

The mean age (years) was 75.5 (S.D 13) during the non-COVID year compared to 66.6 (S.D 14.1) and gender distributions in both groups were similar (55.3% and 55.5% females in 2019 and 2020 respectively). Referrals to the MDT during the non-COVID year originated from rapid access pathway (56%), emergency (21%), routine referrals (21%), screening (2%) compared to 61%, 28%, 11% and 0% respectively during the first wave (Figure 1). The treatment goal during the pandemic was palliative in 44% of cases compared to 32% in the other group Figure 2. There was a marked reduction in the gross number of operations performed 35 vs 12 during each three-month segment of the year in 2019 and 2020 respectively, however, the relative proportions of patients operated compared to the total referrals for each quarter of the year was similar (66.7% in 2020 vs 68.1% in 2019). While 75% of the patients were operated via a laparoscopic approach during the non-COVID year, only 58.3% were offered laparoscopic treatment during the pandemic. Furthermore, while only 21.9% during the non-COVID year required emergency intervention, 41.7% of the patients operated during the pandemic were performed on an emergency basis (Figure

4). During the pandemic there was a reduction in the proportion of early disease. Stage D accounted for a larger proportion of the COVID year patients (39%) compared to the non-COVID year (17%). There were no statistically significant differences in the pattern of referral, ($p=0.742$), treatment goal ($P=0.344$) or Dukes staging ($P=0.276$) between both groups although these differences are clinically relevant.

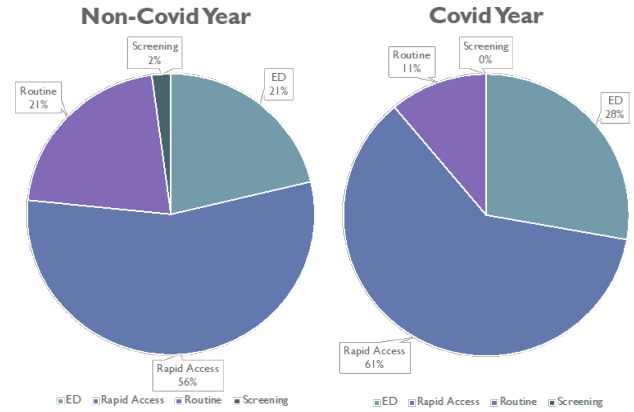


Figure 1: Modes of Referral

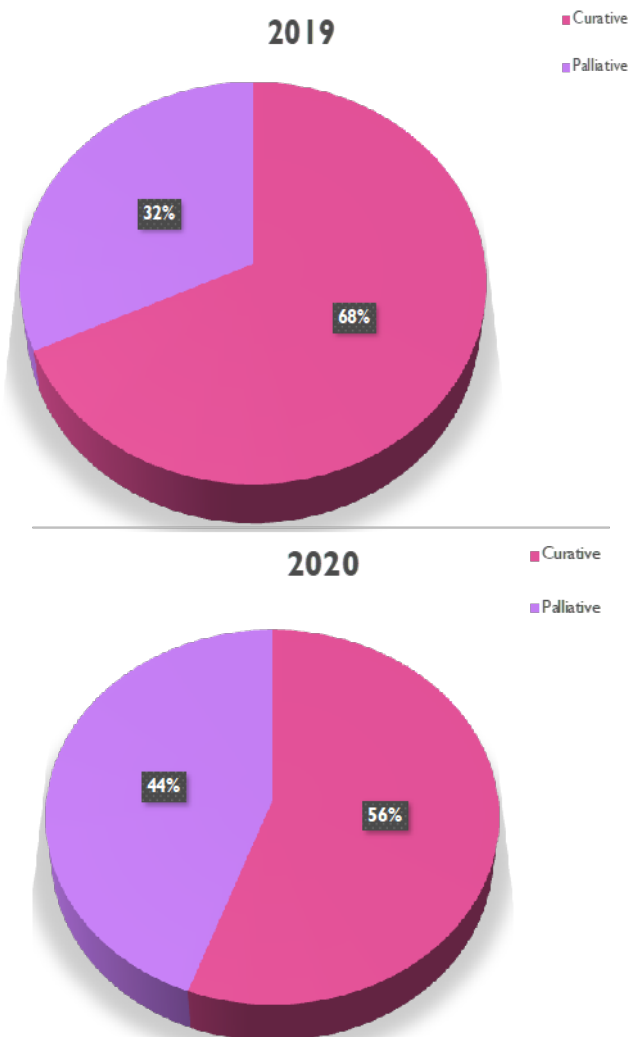


Figure 2: Treatment aims.

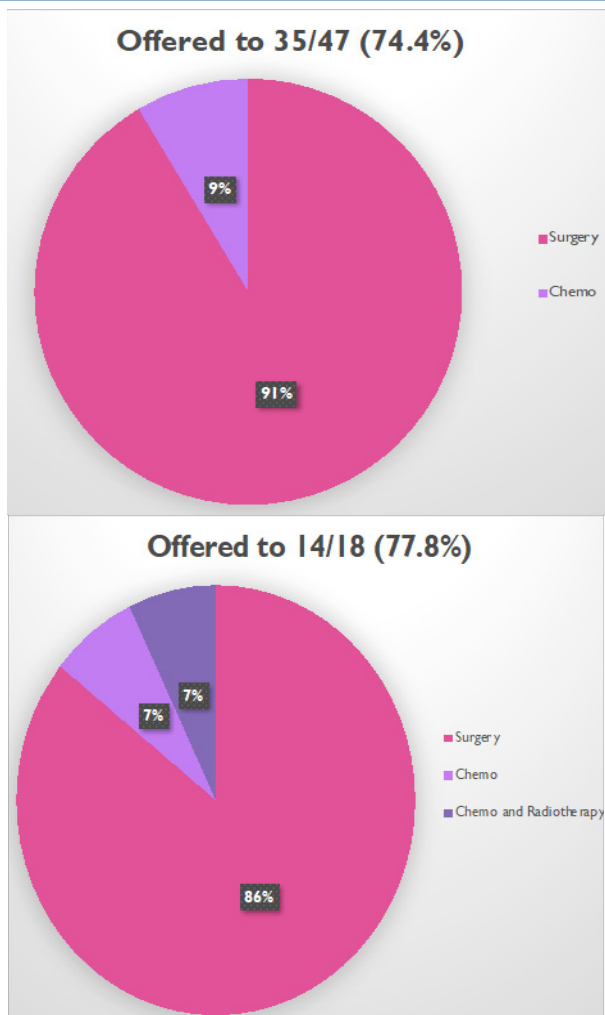


Figure 3: Primary treatment offered.

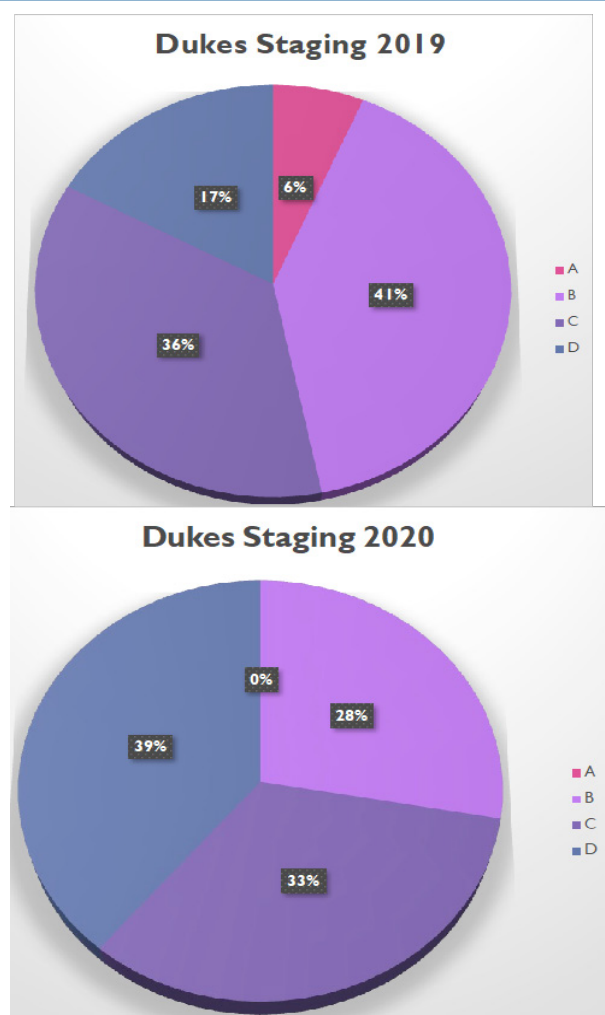


Figure 5: Dukes staging at diagnosis.

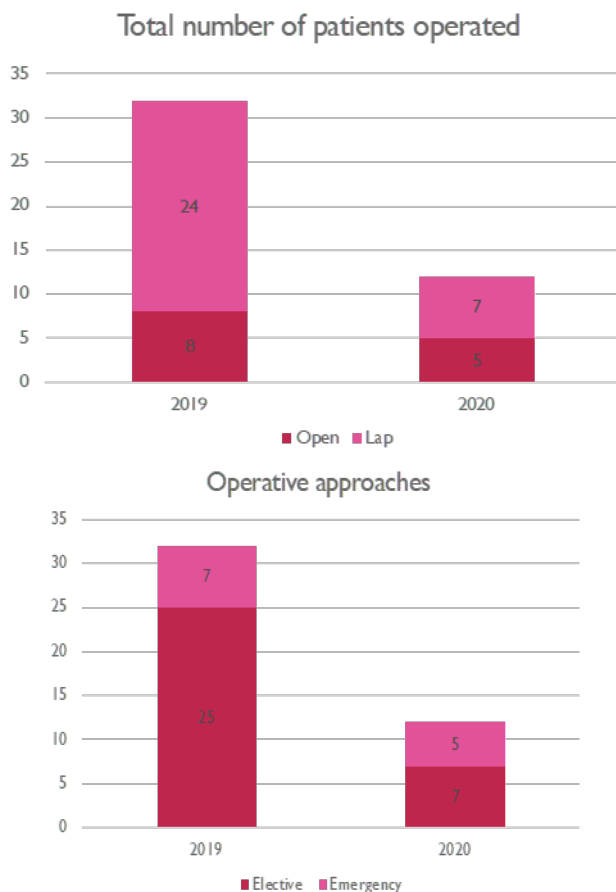


Figure 4: Operative approaches.

Discussion

The younger mean age in the COVID year may be due to the tendency to shielding in the older population during the pandemic with older patients avoiding health services in the absence of overt symptoms. The most prominent message from the UK government during the first wave of the pandemic was for all individuals, especially patients considered as high-risk patients for COVID-19 infection, including elderly patients, to shelter in place during the pandemic and stay home. This resulted in individuals who are older avoiding healthcare services. Maringe et al [4] also opined that these changes to the health seeking behaviours of individuals affect presentation to healthcare services. Overall, there was a significant reduction (61.7% decrease) in the volume of patients managed by the colorectal MDT during the COVID pandemic with cessation of National Bowel Cancer screening as well as local non-emergency diagnostic services contributing to this.

Furthermore, during the pandemic, no patients were referred via the screening route and routine cancer referrals also reduced in number. Majority of the referrals came in via rapid access pathways or emergency presentations. About 20-33% [5,6] of colorectal cancers will present as emergencies and necessitate acute intervention. Our study demonstrated an increase in the proportion of patients presenting as an emergency during the pandemic with a larger proportion of open rather than laparoscopic procedures offered to those requiring surgical intervention. Emergency presentation is recognised as an independent predictor of poor locoregional recurrence and disease free survival [5]. Relatively, surgical needs remained un-

changed and the COVID year will result in cases remaining in the community untreated and at risk of progression. A higher proportion of Dukes D disease (more than twice the proportion seen in 2019) and an absence of Dukes A disease was observed during the COVID year. Cessation of non-emergency diagnostic pathways that support identification of early disease such as screening, routine diagnostic colonoscopy and other routine studies that yield incidental lesions as well as the tendency for asymptomatic patients or those with minimal symptoms not to seek healthcare during the pandemic could have contributed to this finding. This also adds to the increased palliative treatment goal proportion within that group. It is already anticipated that the existing service changes will lead to increased avoidable cancer deaths over the next 5 years estimated at 15.3-16.6% in colorectal cancer deaths [4]. The overall approach to COVID-19 has been as a pandemic. However, the disease will likely be endemic within the population for a while. It is necessary to institute measures that allow healthcare providers to continue to deliver cancer services at expected level with additional capacity to cope with existing backlogs. Furthermore, it is key to address the resulting changes to health seeking behaviours of individuals that promote delays in seeking health services and reassure the public of safety during their hospital attendances [7]. There were no statistically significant differences in the mode of referral or the overall treatment goals during both periods examined however the differences observed are clinically significant and the small size of the population can account for these statistical characteristics.

Conclusion

COVID-19 is likely to be an endemic problem for a while and there is an urgent need for the UK health services to adapt to it. There is a need to sustain colorectal cancer services during the pandemic. Cessation of non-emergency diagnostic pathways that support identification of early disease contributed to diagnostic delays with increased proportion of palliative and Dukes D disease. Normal CRC services should be sustained during future pandemics to avoid missing curable disease.

Limitations

This is a small study carried out on service provision in one centre in the UK. We limited the study to the three-month period of the first wave of the pandemic when service provision was homogeneous. After the period of the study few services began to open with a more heterogeneous pattern of colorectal cancer service delivery and this period was not included in the study. Our small population could account for the lack of statistical significance demonstrated in our data.

Declarations

Conflicts of interest: All authors have declared no conflicts of interest.

Funding sources: All authors have no funding source to declare

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