

## COVID-19 and endoscopic services: the impact of delays in therapeutic colonoscopies on patients

We are writing in relation to the study by Rutter *et al* with interest.<sup>1</sup> The COVID-19 pandemic has resulted in major changes to healthcare delivery in many clinical areas including endoscopic services.<sup>1-3</sup> The British Society of Gastroenterology (BSG) and Joint Advisory Group for Gastrointestinal Endoscopy (JAG) issued guidance for endoscopic services on 23 March 2020 recommending activities prioritising emergencies or essential procedures and postponement of non-emergency cases, bowel cancer screening and surveillance.<sup>4</sup>

The study by Rutter *et al* reported a substantial reduction to as low as 5% of normal endoscopic activity in the UK earlier on in the pandemic with only a 20% increase of pre-COVID-19 levels 10 weeks later. Endoscopic cancer detection rate reduced by 58% overall, with a worrying 72% reduction for colorectal cancer during the study period.<sup>1</sup> A national survey of UK endoscopy leads in May 2020 showed a substantial number of endoscopy services stopped performing endoscopy with an anticipated slow recovery and trebling of current workload.<sup>5</sup>

We have significant concerns regarding these findings and would like to express that major efforts should be taken to restore endoscopic capacity.

Although strategies for resuming diagnostic endoscopy services has been proposed, there has been very little guidance and published data on prioritisation of elective therapeutic endoscopy work such as resection of complex colonic lesions.<sup>6,7</sup>

Locally, endoscopic activities continued earlier on in the pandemic but with prioritisation of emergencies and reduction of elective work as outlined by the BSG-JAG guidance. A 'case-by-case consultant-led discussion' strategy was adopted but despite this, delays were expected. To scale the impact of this further, we conducted a retrospective review of 111 patients with complex colonic lesions defined as size, morphology, site, access (SMSA)  $\geq 10$  in two large National Health Service hospitals within our trust. We evaluated timing of lower gastrointestinal (LGI) endoscopies (assessing time interval between index (diagnostic) and follow-up (therapeutic) procedures), polyp size, characteristics and patient outcomes following the revised service arrangement. All lesions

**Table 1** Changes in polyp size and abandoned procedure rates

Classification	Index procedure	Follow-up procedure	P value
Polyp size, median (IQR) mm			
Group A	20 (15–35)	40 (20–46)	0.031*
Group B	25 (20–30)	30 (20–40)	0.061
Proportion of patients with an increase in polyp size of $\geq 1$ cm, n (%)			
Group A		11 (31.4%)	0.822
Group B		21 (27.6%)	
Abandoned procedures, n (%)			
Group A		5 (5%)	0.012†
Group B		1 (1%)	

\*Mann-Whitney U test.

†Fisher's Exact test.

IQR, interquartile range.

had the index and follow-up procedures in their respective resecting centres. Therapeutic endoscopic resections (ER) performed 6 months from 23 March 2020 were defined as cases affected by the COVID-19 outbreak (group A (n=35)) and ER performed within 1 year prior to this were chosen as control for comparison (group B (n=76)). All patients had LGI endoscopies as their index procedure except one in group A who had an MRI describing a non-invasive rectosigmoid polyp. All follow-up procedures were performed with therapeutic intent.

The median time interval between procedures were prolonged in group A compared with group B (16 weeks (IQR 12–20) vs 8 weeks (IQR 5–13) respectively;

$p=0.001$ ). There was a larger increase in median polyp size between interval procedures and higher ER abandoned rates in group A compared with group B. There was also higher percentage of patients with an increase in polyp size ( $\geq 1$  cm growth) in group A but statistical analysis showed no significant difference between the two groups (table 1). Subgroup analysis was performed to assess for reasons for abandoning ER in group A and summarised in table 2. Overall, 80% (n=4) of abandoned procedure in group A required surgery with histology confirming high-grade dysplasia or malignant changes.

Our data support the negative impact on patients due to delays in ER of complex colonic lesions. Although mobilising a

**Table 2** Reasons for abandoning procedures in group A

Case	Findings at index procedure	Findings at follow-up procedure	Comments on reasons for abandoning
1	Location: sigmoid colon Size: 35 mm Type: LST-NG SMSA: 11 Paris: IIa +c Kudo: V Biopsy: HGD Outcome: for ER	Location: sigmoid Size: 50 mm Type: LST-NG SMSA: 13 Paris: IIa +c Kudo: V Biopsies and CT findings in keeping with invasive carcinoma	Time interval between index and follow-up procedure: 25 weeks 15 mm interval growth and predicted submucosal invasion on repeat endoscopic inspection. Surgery was felt to be the best therapeutic option
2	Location: rectosigmoid (MRI described the lesion as non-invasive) Size: 40 mm Outcome: for colonoscopy	Location: rectosigmoid Size: not described, malignant looking Type: LST-NG Paris: Is Kudo: not described Biopsies and CT findings in keeping with invasive carcinoma	Time interval between index and follow-up procedure: 16 weeks Significant progression from polypoid lesion to invasive carcinoma in that time. Surgery was felt to be the best option
3	Location: transverse colon size: 35 mm Type: LST-NG Paris: Is Kudo: IIIs Outcome: for ER	Location: transverse colon Size: 45 mm Type: LST-NG Paris: IIa +c Kudo: VI tethered lesion Biopsies and CT show findings in keeping with invasive carcinoma	Time interval between index and follow-up procedure: 20 weeks 10 mm lesion growth but significant change in lesion characteristics (pit pattern and tethering). Therefore, surgery was deemed best option
4	Location: rectosigmoid junction Size: 35 mm Type: semi pedunculated Paris: Isp Kudo: Vn Outcome: for ER Biopsy: LGD	Location: rectosigmoid Size: 40 mm Type: semipedunculated with nodule Paris: Isp Kudo: Vn Thought to be malignant endoscopically. Biopsies showed HGD. MRI showed T2 lesion	Time interval between index and follow-up procedure: 14 weeks Interval growth of 5 mm but lesion characteristics changed and ER abandoned. Surgery was deemed best option. Surgical specimen confirmed poorly differentiated adenocarcinoma
5	Location: Sigmoid Colon Size: 12 mm Type: LST-NG Paris: Is Kudo: IIIIL Outcome: Incompletely resected at index colonoscopy. Referred for complex polypectomy.	Location: Sigmoid Size: not described as scarred and tethered Type: LST-NG Paris: Is Kudo: Vn	Time interval between index and follow-up procedure: 20 weeks Time interval between second colonoscopy and FTRD: 19 weeks. FTRD was definitive treatment and lesion was completely excised

CT, computerised tomography of abdomen; ER, endoscopic resection; FTRD, full thickness resection with an over-the-scope clip device; HGD, high-grade dysplasia; Kudo, kudo pit pattern; LGD, low-grade dysplasia; LST-NG, lateral spreading lesion non-granular; MRI, magnetic resonance imaging; Paris, Paris classification; SMSA, size, morphology, site, access.

safe model for rationing GI endoscopy should be taken, it is crucial that efforts are also made to protect elective therapeutic endoscopy work such as resection of complex colonic lesions. This is vital in conjunction, to prevent a future cancer healthcare crisis.

Syazeddy Samani <sup>1</sup>, Nasir Mir,<sup>2</sup> David N Naumann <sup>3</sup>, Michael Ding,<sup>1</sup> Sharad Karandikar,<sup>4</sup> Jason Goh,<sup>1</sup> Marietta Iacucci,<sup>1</sup> Marcus Mottershead,<sup>2</sup> Vanja Giljaca<sup>2</sup>

<sup>1</sup>Gastroenterology Department, Queen Elizabeth Hospital, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

<sup>2</sup>Gastroenterology Department, Heartlands Hospital, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

<sup>3</sup>General Surgery, Queen Elizabeth Hospital, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

<sup>4</sup>General Surgery, Heartlands Hospital, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

**Correspondence to** Dr Syazeddy Samani, Gastroenterology Department, Queen Elizabeth Hospital, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK; syazeddyahir@gmail.com

**Contributors** SS contributed to planning, data collection, analysis, reporting of work and wrote the letter (responsible for overall content). NM contributed

to planning, data collection, analysis and made adjustments to letter. MD contributed to data collection. DNN contributed to statistical analysis. SK contributed to data, planning, data analysis and made adjustments to letter. JG contributed to data, planning, data analysis and made adjustments to letter. MI contributed to data, data analysis and made adjustments to letter. MM contributed to data and data analysis. VG (overall supervisor) supervised and contributed to data, project planning, data analysis, made adjustments and help finalise the letter.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.

**Patient consent for publication** Not required.

**Provenance and peer review** Not commissioned; externally peer reviewed.

This article is made freely available for use in accordance with BMJ's website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

© Author(s) (or their employer(s)) 2021. No commercial re-use. See rights and permissions. Published by BMJ.



**To cite** Samani S, Mir N, Naumann DN, *et al.* *Gut* Epub ahead of print: [please include Day Month Year]. doi:10.1136/gutjnl-2021-324112

Received 13 January 2021  
Revised 25 January 2021  
Accepted 27 January 2021

*Gut* 2021;0:1–2. doi:10.1136/gutjnl-2021-324112

#### ORCID iDs

Syazeddy Samani <http://orcid.org/0000-0001-6396-6310>  
David N Naumann <http://orcid.org/0000-0003-2243-2325>

#### REFERENCES

- 1 Rutter MD, Brookes M, Lee TJ, *et al.* Impact of the COVID-19 pandemic on UK endoscopic activity and cancer detection: a national endoscopy database analysis. *Gut* 2020;35:1–7.
- 2 Who coronavirus disease (COVID-19) Dashboard. Available: <https://covid19.who.int>
- 3 Bang JY, Hawes R, Varadarajulu S. Clinical, financial and academic implications of COVID-19 on a tertiary care interventional endoscopy programme. *Gut* 2020:1–4.
- 4 The British Society of Gastroenterology. Endoscopy activity and COVID-19: Bsg and JAG guidance. Available: <http://www.bsg.org.uk/covid-19-advice/endoscopy-activity-and-covid-19-bsg-and-jag-guidance>
- 5 Catlow J, Beaton D, Beintaris I. JAG/BSG national survey of UK endoscopy services: impact of the COVID-19 pandemic and early restoration of endoscopy services. *Frontline Gastroenterol* 2020;7:1–7.
- 6 Hayee Bu'Hussain, Thoufeeq M, Rees CJ, *et al.* Safely restarting GI endoscopy in the era of COVID-19. *Gut* 2020;69:2063–70.
- 7 He T, MacIsaac MB, Hume SJ, *et al.* COVID-19 and its impact on endoscopy services: what is the threshold for missed malignant diagnosis? *Gut* 2020;0:1–2.