

International snapshot study exploring the impact of COVID-19 on elective inguinal hernia repair

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Dear Editor,

Approximately 20 million elective inguinal hernia repair (IHR) operations are performed worldwide each year¹. Postoperative urinary retention is a recognized complication of IHR, but rates are inconsistently defined and reported². In 2020, the Irish Surgical Research Collaborative (ISRC) planned to launch an international two-phase prospective study entitled RETAINER (REtention of urine After INguinal hernia Elective Repair)³. Launch of this study was interrupted because of the COVID-19 pandemic. In the interim, the RETAINER Collaborative group sought to explore the overall impact of COVID-19 on international elective IHR practice.

Through national and hospital lead representatives for the RETAINER study, the impact of COVID-19 on international elective IHR was explored using a digital questionnaire disseminated in February and March 2021, to reflect change in practice in the preceding year (during the COVID-19 pandemic). In particular, the impact of COVID-19 on volume of surgical unit practice, training procedure volume, criteria for patient selection for IHR, and changes to IHR surgical technique and type of anaesthesia used during the pandemic, was examined. Furthermore the volume of IHR practice transferred to the private sector, and whether such arrangements provided training opportunities, was examined.

A total of 166 responses from 16 countries across five continents (full list in [Appendix S1](#)) were reported, comprising 65 consultants and attendings (39.2 per cent), and 101 trainees and residents (60.8 per cent). Findings are summarized in [Fig. 1](#). Some 164 surgical units (98.8 per cent) observed a reduction in elective IHR during the pandemic, with 116 (69.9 per cent) reporting at least a 75 per cent reduction in procedures. Furthermore, 98.2 per cent of surgical trainees reported a reduction in training procedures; 76 (75.2 per cent) reported at least a 75 per cent reduction in procedures and 60 units (36.1 per cent) transferred elective IHR procedures to a different site. Of these transferred lists, 57 (95.0 per cent) were performed in the private sector of which 28 (46.7 per cent) provided training opportunities.

The threshold for performing elective IHR changed during the pandemic for 128 respondents (77.1 per cent), and patient

selection criteria were influenced for 114 (68.7 per cent). Most notably, the proportion of older patients with co-morbidities and asymptomatic inguinal hernia undergoing elective IHR reduced from 33 to 7 per cent ($P < 0.001$). A change of operative technique was reported in 15 (9.0 per cent), which in all instances involved reverting to an open rather than laparoscopic approach, resulting in an overall 10 per cent increase in performance of open IHR ($P = 0.180$). Twenty respondents reported a change in preferred anaesthetic technique, resulting in a 9 per cent reduction in general anaesthesia rates from 71 to 62 per cent ($P = 0.221$).

Currently, one year since the beginning of the pandemic, 157 units (94.6 per cent) are undertaking SARS-CoV-2 screening routinely before elective IHR (149 (94.9 per cent) nasopharyngeal swab for PCR, 8 (5.1 per cent) rapid antigen testing). Only 62 (37.3 per cent) reported performing more emergency IHR repairs during the pandemic, and 52 (31.3 per cent) more bowel resection for strangulated hernia. Further comments included reluctance by patients to attend for elective IHR when operating theatre opportunities were available owing to concern regarding nosocomial SARS-CoV-2 infection, and significant change in clinical assessment of patients was also reported. Outpatient appointments were often postponed or delayed; when undertaken they were performed using telemedicine, and with careful counselling regarding signs of strangulation and instructions to seek emergency care.

This snapshot study is limited as it was surgeon-reported and data were not recorded prospectively. However, these findings are concordant with data from the Herniated registry⁴, which reported a significant reduction in registration of all forms of elective hernia repair during the COVID-19 pandemic compared with corresponding months in the previous calendar year. The authors conclude that COVID-19 has had a significant impact on the delivery of elective IHR, including volume of surgery, criteria for patient selection in the elective setting, and, to a lesser degree, operative technique and anaesthetic decisions. In addition, the global pandemic has significantly influenced training opportunities in elective IHR. Future work should aim to address this potential training

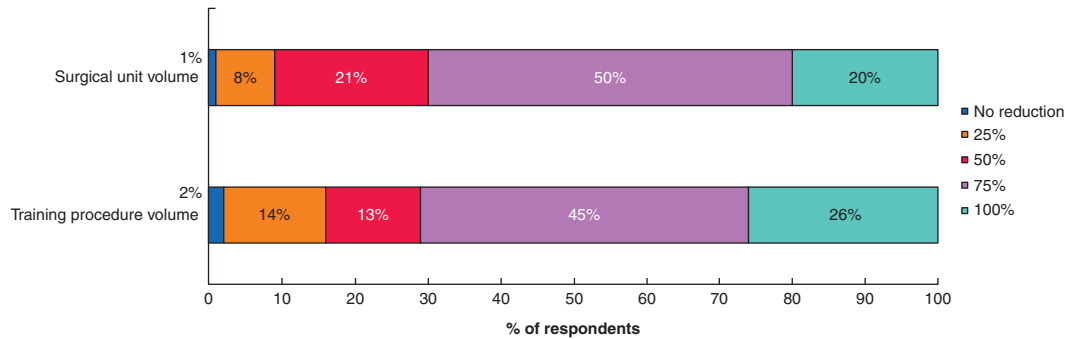
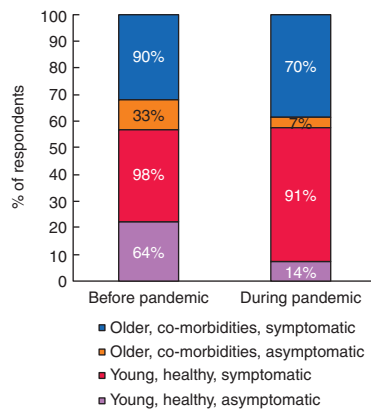
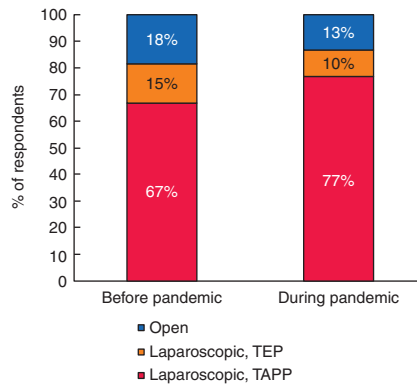
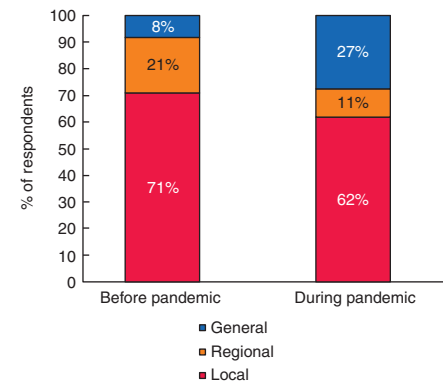
a Reduction in elective inguinal hernia repair during COVID-19 pandemic**a** Criteria for patient selection**b** Operative technique**c** Anaesthesia technique

Fig. 1 Summary of surgical unit and training procedure reduction in elective inguinal hernia repair during the COVID-19 pandemic, and pandemic-driven changes to criteria for patient selection and operative and anaesthesia techniques used

a Surgical unit and training procedure reduction (reduced by 98.8 and 98.2 per cent respectively), and changes in **b** criteria for patient selection (68.7 per cent change; $P < 0.001$), **c** operative technique (9 per cent change; $P = 0.180$), and **d** anaesthesia technique (12 per cent change; $P = 0.221$). TEP, totally extraperitoneal; TAPP, transabdominal preperitoneal. ANOVA test was used for statistical analysis

shortfall to ensure that key clinical competencies in IHR can be met by trainees.

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Disclosure. The authors declare no financial or other conflict of interest.

Supplementary material

Supplementary material is available at BJS online.

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