Does the risk of SARS-COVID-19 at laparoscopy justify the precautions?

Editor

Coronavirus disease (COVID-19) is an infection of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), transmissible by airborne aerosol droplets, causing bilateral pneumonitis. COVID-19 was characterised as a pandemic on 11th March 2020. Public Health England introduced limitations to Aerosol Generating Procedures (AGPs) for the protection of healthcare professionals (HCPs) and to limit the spread of infection in hospitals. To accommodate the surge of patients with severe COVID-19, elective surgery was suspended. Guidance to halt laparoscopic surgery in preference to open approaches was published by Royal College of Surgery and Association of Coloproctology, Great Britain and Ireland on 25th March 2020, Laparoscopy was deemed to be an AGP in the following situations: removal of trochars from the abdomen, deflation of pneumoperitoneum without use of a filtration system, specimen extraction, and leakage of CO2 from inaccurately sized incision ports[1].

A laparoscopic approach is preferred in many operations due to lower morbidity and reduced hospital stay – which is beneficial in a pandemic[1,2]. Laparoscopy allows for self-containment of bodily fluids and tissue, which reduces the risk to HCPs[2]. Recent studies have shown that SARS-CoV-2 remains viable in the air for up to three hours[3]. In contrast, Ong et al performed a limited study, obtaining sequential air samples from positive SARS-COV-2 patients' isolation rooms and tested them for SARS-CoV-2 – all were negative[4]. This study together with updated guidance from the World Health Organization who found no evidence of airborne transmission in 75,465 COVID-19 cases, suggests a negligible risk of SARS-CoV-2 transmission during laparoscopic surgery. It has also been theorised that diathermy could cause SARS-COV-2 transmission. S.Angioni discussed the theoretical risk of breathable aerosols of viruses such as Hepatitis B (HepB) and human papillomavirus (HPV), which have been detected in smoke produced by diathermy during open procedures[5]. Despite no documented cases of HCPs contracting HepB or HPV in this manner, they concluded that there is a theoretical risk to HCPs from SARS-CoV-2 during laparoscopic procedures and recommended limiting use during the pandemic[5].

Francis et al discussed practical measures to be put into place for laparoscopy recommending MDT discussions to identify individual patient risk, whilst ensuring staff are protected with adequate personal protective equipment (PPE), thorough cleaning of the operating room (OR), and having sufficient ventilation in the OR[1]. Vigneswaran et al published a literature review of SARS-CoV-2 transmission in laparoscopic and open procedures, and a review of global surgical society guidance. They concluded there is limited evidence to suggest viral transmission in laparoscopic or open procedures and made several recommendations to modify surgical practice during the pandemic. These included lowering pneumoperitoneum pressures to 12 mmHg to reduce the risk of aerosolisation, and the use of smoke extractors alongside CO2 filters applied to laparoscopic ports (such as ConMed AirSeal®)[2]. A systematic review of the limited literature shows no robust evidence that laparoscopy places HCPs at a higher risk of contracting SARS-CoV-2. HCP and patient safety remain paramount and appropriate precautions need to be taken.[6]

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