Standard Operating Procedures

Microvascular Surgery During Covid 19 Pandemic

May 2020

Contents

1.0 Document Control Information

Summary	The performance of microvascular surgery during the COVID-19 outbreak requires careful planning and co-ordination between theatre teams to ensure that appropriate infection control measures are undertaken to reduce risk of exposure to staff and patients
Purpose	To provide the trust with a framework of operative practice which complies with current infection control guidelines
Publish date	May 2020
Review date	To be reviewed regularly during the COVID-19 crisis to allow updates to the guidance as required
Version Number	1.0
Responsible officer	
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Department(s)	Surgery/Theatres
Contact details	

2.0 Amendments

Any amendments made will be authorised by the authors and submitted for approval to the relevant executive team

Amendment Record

Date of Amendment	Amendment No	Amendment Details	Amended by	Version amended	Version Number

3.0 Introduction

The COVID-19 outbreak has generated a need to adopt stringent infection control practices for patients requiring operative procedures. This is particularly necessary during aerosol generating procedures (AGP's). Unfortunately the bulky and uncomfortable equipment has limited or prevented the ability to undertake procedures such as microvascular surgery which require a high degree of dexterity.

There is an urgent need to re-introduce microvascular surgery for patients which remains the gold standard method of reconstruction for patients from a number of specialities but particularly for patients undergoing major head and neck ablative surgery.

4.0 Aims and Objectives

Aim

To enable the re-introduction of microvascular reconstructive surgery during the COVID pandemic and beyond

Objectives

To ensure that University Hospitals Coventry and Warwickshire NHS trust complies with existing safety protocols including Public Health England, Speciality Association and Royal College of Surgeons Guidance relating to infection control measures.

To ensure that staff and patients remain protected from transmission of COVID-19

To disseminate appropriate practice to teams involved in the provision of microvascular reconstructive surgery.

To comply with existing admission, theatre and ward management protocols for patients requiring elective surgery.

To regularly review practice in line with emerging guidance in order to provide optimal care for patients

5.0 Scope

This plan applies to all those involved with admission and management of patients requiring microvascular surgery and identifies aspects of care relating the pre-operative, peri-operative and post-operative phases of management.

6.0 Outline of Problem

Microvascular reconstructive procedures remain the gold standard approach to reconstruction for a subset of patients from a variety of specialities but particularly for those having surgery to the head and neck following cancer surgery, these patients are also relatively unique in that it necessary to undertake the reconstructive procedure at the same time as the ablative procedure to prevent life threatening complications.

The COVID-19 outbreak has generated a need to adopt stringent infection control practices for patients requiring operative procedures. This is particularly necessary during aerosol generating procedures (AGP's). The bulky and uncomfortable equipment has limited or prevented the ability to undertake procedures such as microvascular surgery which require a high degree of dexterity.

Whilst it remains unclear as to exactly which procedures constitute an AGP, surgery within the airway and oral cavity procedures, particularly where high speed drilling or cutting occurs are generally accepted as AGP's. It is less clear whether a procedure within the oral cavity or around the head and neck area on an adequately anaesthetised patient constitutes an AGP and different institutions have recommended different approaches to protection in this instance.

Microvascular procedures more remote from the head and neck area such as lower limb reconstruction, are more likely to be considered non AGP procedures and it should be possible to provide microvascular surgery for these patients using the non AGP protocols described below.

Full AGP protection requires at least 2 pairs of gloves, an FFP3 respirator and full visor or goggles (if the respirator is water resistant) and this practically prevents the performance of high dexterity surgery and the use of the microscope. Complex reconstructive surgery of lasts in the order of 10-12 hours and wearing full AGP protection for this length of time is unlikely to be tolerated. It would either require frequent breaks from the procedure increasing the surgical time to unacceptable levels or frequent changes of personnel which are not available in Coventry.

Therefore in order for such surgery to be provided going forward, it requires some modification of the existing techniques and protocols to allow surgeons to regain the appropriate levels of dexterity and visual access to perform the technique and maintain acceptable operating times.

Head and neck microvascular surgery forms part of a complex major surgical procedure to reconstruct the hard and/or soft tissues for patients following ablative surgery for cancer, infection or more rarely trauma. The technique involves joining blood vessels supplying a piece of tissue taken from an area away from the head neck neck to blood vessels in the neck using loupes or more commonly a microscope to provide vascularised tissue to reconstruct the defect. The technique remains the gold standard for reconstruction for such defects in all major reconstructive centres around the world.

Whilst the surgical site for head and neck microvascular anastomosis is outside the oral cavity, It is usually necessary to inset the tissue into the oral defect prior to undertaking the microvascular anastomosis. In addition, it can be necessary to segmentalise bone to allow the tissues to fit together during the flap inset and this latter procedure would, by definition, constitute an AGP.

Until the COVID-19 outbreak, most centres would have undertaken head and neck microvascular surgery utilising two teams working largely in tandem to reduce the operating time and operator fatigue (Islam S, Walton GM, Raj S Br J Oral and Maxfac Surg 2020). Whilst the approach to a particular case could vary generally the procedure would take place in the following order:

Intubation and insertion of lines
Tracheostomy
Neck dissection and resection Team 1 in tandem with Team 2 who would undertake free flap harvest
Flap inset (If using bone this may require a bone cutting procedure)
Microvascular anastomosis
Closure of wounds
Extubation

From this it can be seen that there are a number of steps that would constitute an AGP and therefore full AGP protection would be required throughout the case. Practically for the technical reasons outlined above, it would not be possible to undertake surgery of this nature if the conventional operating pattern continued and a modification of technique for patients who will undergo an AGP as part of the surgical plan is suggested as the basis of this standard operating procedure.

Locally it will be necessary to agree that surgery within the oral cavity that **does not** require the use of high speed drilling or cutting equipment and which occurs in an anaesthetised patient such that there is little risk of coughing and creating air propelled droplets **does not** constitute the risk of AGP. Currently whilst there remains a large variation in practice, there are several units in the UK and others in Europe who already seem to have adopted this approach and have downscaled the level of protection required for staff accordingly allowing the operating team to regain the necessary manual dexterity to perform this technique.

If the above is agreed, it is proposed that modification to the usual procedural order would allow surgeons to undertake the high dexterity parts of the procedure without the need for full protection whilst remaining adequately protected during the procedure.

7.0 Pre-Operative Evaluation of Patients and Staff

In addition to the usual preoperative evaluation of patients, the following should apply to patients undergoing major reconstructive surgery:

All patients should undergo COVID testing before surgery as per current trust policy. Following testing patients should be instructed to self isolate until the day of admission.

Positive results in asymptomatic patients whilst uncommon will result in a significant wastage of theatre resource unless patients are tested with sufficient notice to enable an alternative patient to be scheduled for a list in such circumstances. This will build in a delay to compliance with treatment time targets.

Patients undergoing major surgery who subsequently contract COVID-19 in the postoperative period are known to have a very poor outcome presumably due to the immunosuppression as a result of surgery. Patients should be informed of these risks as part of the consent process

Depending on National and Local guidelines to ensure maximum protection for patients consideration could be given to a adopting a similar strategy used in South Korea summarised below:

Patients:
Test at 7 days preoperatively
self isolate
test at 1 days preoperatively
test at discharge

Staff
Those undertaking major surgery tested twice per week

Patients should be admitted to COVID ‘clean’ area

8.0 Peri-Operative Management of Patients

The flow diagrams below relate to head and neck procedures since these are usually AGP generating. Other cases requiring microvascular reconstruction are not classed as AGP procedures and could therefore be managed using the the non AGP protocol described below

CONVENTIONAL ORDER OF PROCEDURE WITHOUT PPE

Induction in Anaesthetic room and lines

Tracheostomy (if required)

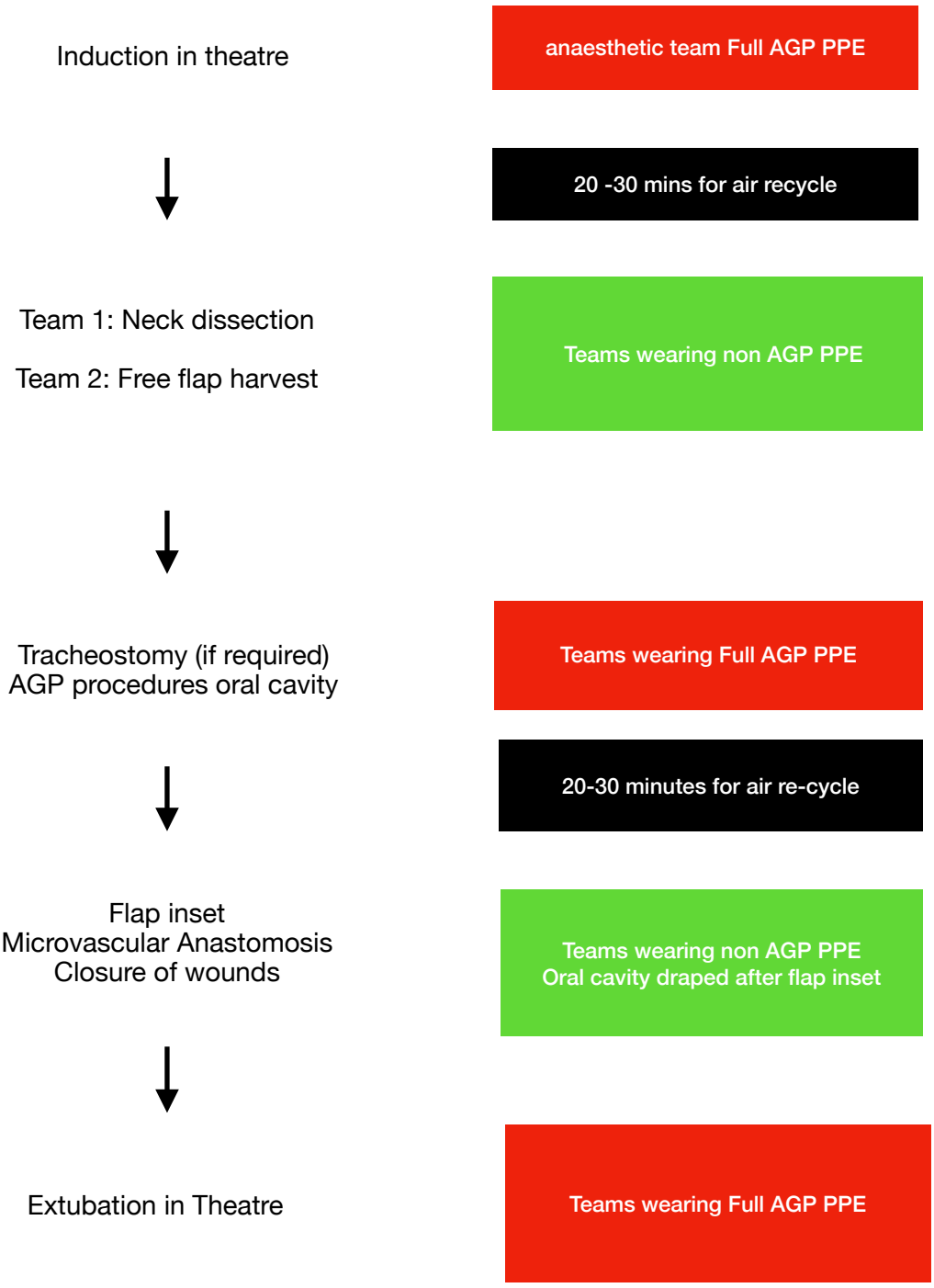
Team 1: Neck dissection & AGP procedures

Team 2: Free flap harvest

Flap inset (may involve further AGP procedure)
Microvascular Anatomosis
Closure of wounds

Extubation in Theatre

PROPOSED ORDER OF PROCEDURE AND LEVEL OF PPE



8.1 Level of PPE required for staff during microvascular procedure

It will be necessary to use the binocular view finders of the microscope to satisfactorily undertake microvascular anastomosis for most patients.

This should be undertaken in a non AGP setting as outlined above and therefore could be performed with a water resistant mask and with or without normal spectacles depending on operator preference.

Some units have suggested FFP3 mask and spectacles as COVID is most essentially a respiratory borne disease and this would afford a higher level of protection as the operator remains close to the open oro-pharyngeal mucous membranes.

If there is a risk of splashes from the oral tissues during flap inset then appropriate full face protection should be worn.

Oral cavity should be draped after flap inset to leave only the neck exposed.

Double gloving is the ideal protection required but for some operators this may reduce levels of dexterity below an appropriate ability and consideration should be given for a single glove technique whereby the gloves are attached to the gown as per current protocol in order that the gown and gloves are removed as a single item. The hands should then be washed with gel and disposable gloves put on to allow removal of any eyewear, mask and cap before using the 7 step hand washing technique

8.2 Microscope Preparation

To prevent cross contamination the microscope will require full cover sterile drapes rather than the sterile handle drapes currently used.

8.3 Additional Considerations

Prior to the COVID pandemic the operative time for complex surgery of this nature was 6-10 hours depending on complexity. This will lengthen considerably due to the time taken to prepare the patient, don and doff PPE, waiting time for theatre air flushes and also the difficulties of operating in PPE. Theatre, anaesthetic and surgical teams need to be aware of this and cover for the theatre team needs to be available prior to embarking on a case. In some instances provision may be required for change over of teams during the case i.e anaesthesia and nursing/ODP.

9.0 Post-Operative Management of Patients

Patients for whom temporary tracheostomy is required, should be admitted to a side room until the temporary tracheostomy is removed to reduce the risk to staff and other patients.

Full AGP protection will be required for staff managing patients with tracheostomy or oro-pharyngeal reconstruction in the post operative recovery phase in line with current National and Speciality guidance.

Head and neck patients will need to be admitted to a dedicated head and neck ward with airway, tracheostomy and post operative free flap monitoring expertise. Plastic surgery patients will require admission to similar facilities where staff are familiar with flap monitoring techniques and the management of patients with free flap reconstruction.

Free flap failure rates vary from 90- 98% depending on the type of flap and patient morbidity. Previously audited rates for the UHCW head and neck team show >92% survival. Internal audit of outcomes for plastic surgical reconstructions are similar. Flaps are usually monitored hourly by staff for 3 days following surgery. This would mean a high number of short interventions requiring the use of disposable PPE when only a very small number of patients may benefit. In addition, normal theatre access is currently restricted even for emergency work and there is also the increased risk of cross infection during the pandemic with multiple returns to theatre. Whilst this position persists, in the event of free flap failure, consideration should be given to waive normal salvage protocols and proceed directly to an alternative reconstructive technique on elective operating session. This may also provide some flexibility in the nursing requirements during the postoperative period whilst this resource remains compromised within the trust.

If the above is agreed, this change in protocol should be reflected in the patient consent.

Appendix

1.0 Copies of transcripts from British Association of Oral and Maxillofacial Surgery website relating to microvascular surgery and PPE

Update:

I've met with ID/micro locally to try and establish some guidance on how to increase the amount of surgery being carried out in a safe way. They are very reluctant to commit citing a lack of evidence, and knowledge that things are going to change before they are formally documented and new guidelines are put in place.

In Oxford, we are swabbing all patients 48 hours before surgery as of this week and are doing a CT thorax on the day of surgery for cancer patients. They are also talking about regular staff testing (and having had a COVID test today as part of the asymptomatic staff testing, I can confirm that it is a heinous experience and although I may have to support this at a regional level as the Lead, I do not relish the thought of having this done on a regular basis).

There is also conversations about how to remain as COVID-lite as possible which circulate around different sites or different entrances, staff and wards/ critical care. The staff issue is a bit challenging. We are still providing on-call services, so mixing between both sites. Anaesthetists are mixing between both sites, but as our CEO pointed out, how can you allocate an anaesthetist to the COVID ICU for the next year - it's just not fair.

One comment our ID Consultant made is that once all the testing is in place, that we will be using too much PPE to carry out cancer surgery in non-COVID patients, but she also followed on with the statement that we are not in this place yet, so watch this space. Our plan for free flaps is force 10 respirator masks for as much as possible and FFP3 mask plus microscope for micro.

Posted: Thu 30 Apr 2020 4:45PM

Flag Reply

Mr Mohammed A Al-Muharraqi

Good day to all...

I hope all is keeping safe.

From an international perspective, in Bahrain we've continued carrying out head & neck cases but we have enforced a strict COVID-19 testing/screening policy for patients and staff [both for viral load and antibody].

We have carried out one oncology case per-week since the shut-down [Bahrain was not hit as hard as the UK, but we like most countries, went into suppression/mitigation before isolation].

I managed to get our recommendation in the BJOMS: https://-www.ncbi.nlm.nih.gov/pmc/articles/PMC7152878/

We also tried to use loco-regional pedicled flaps as much as possible without compromising the patient, and tried to get our patients home within 10 days of admission (less with stage 1/2 disease). We utilized our dentists to carry out regular post-surgery home visits to check on the patients once discharged and teleconference the visit with myself. Actually all our MDT meeting and tumor board meetings are virtual nowadays.

We stopped doing chest CT, and it is not recommended at all...I believe the findings of its 'pivotal role' were rushed - this paper makes the point well: https://annals.org/aim/fullarticle/2764546/chest-computed-tomography-detection-coronavirus-disease-2019-covid-19-don

Our best option in my humble opinion to continue the service now is to Test/ Screen, Protect (PPE) and Reduce Contact.

All the best,

Mo

Posted: Thu 30 Apr 2020 7:09AM

Flag Reply

Mr Rabin P Singh KC

Further to Jen and Richard's posts, just want to share our experience from Southampton.

We have done 4 free flap cases since the first COVID admission to our hospital, last case Mon this week (Full PPE- fit-tested mask/visor).

There may be slight variation in some aspects of practice in preparation for surgery:

- We are asking for 7 days of self- isolation (instead of 14 days). This is in line with the NHS guidelines published by the Academy of Medical Royal Colleges on the 7th April. This is also in line with other surgical specialties in our hospital.

- Patient and household member must be (COVID) symptoms free for 7 days, and the patient test negative for COVID-19 within 48 hours from surgery.

- We had CT chest done (within 48 hrs from surgery) for our last 2 free flap patients. However, we are facing fierce resistance from our radiology colleagues on this doing CT chest on asymptomatic patients.
The RCSEd guidelines suggested carrying out a CT chest if planned for ITU admission post-operatively, which was the basis for our request. We think the radiologists do have a point here, so we are unlikely to push for this anymore. If patients have suspicion of symptoms, no need for any tests. Postpone surgery for at least 2-3 weeks.

Flag Reply

Mr Mahesh Kumar

London has been a different story.
With NW London being the epicentre of CV-19 . No elective work being carried out with theatres being an extension of ITU. The COVID free surgical sites have been supporting us at the cancer hubs. We are looking to restart flap surgery.
We are looking at strategies after this first peak for all our activities.

Posted: Wed 29 Apr 2020 3:24PM

Flag Reply

Prof Richard J Shaw

We have used the microscope as the visor, sort of.
All AGPs out of the way, pharynx / airway all covered - only neck vessels exposed - and looking into an eye piece wearing glasses and FFP3
Im not advocating this - its juts what we do - we have done over a dozen flaps in the last 4 weeks -
speaking personally, just a view, leaving someone sat on the ward with a fistula and needing extra dressings etc would be a higher risk than getting on with the rational operation.
we did a RFFF ;last week and got home on day 4 - we have expedited discharges and being doing aftercare on the ward in single rooms.

Richard

Posted: Tue 28 Apr 2020 9:14AM

Reply

Mr Phillip Ameerally

Also , what are people doing for microvascular surgery. I won't be able to use eye protection. Does the FFP3 mask work around the microscope?

Posted: Mon 27 Apr 2020 8:15PM

Flag Reply

Mr Sajid Sainuddin

Thanks - All very helpful points!

Jen - Are you using full PPE for free flap procedures? Or is there consideration for relaxed PPE for some parts of the procedure - e.g., operating on the neck or raising soft tissue flaps could be non-AGP?

Richard - at Liverpool you seem to be using only surgical masks and eye protection?

Regards
Sajid.

Posted: Mon 27 Apr 2020 6:59PM

Mr Timothy K Blackburn

Thank you Jen and Richard
This is all very helpful to ensure we are staying in step across UK and Europe
T

Posted: Mon 27 Apr 2020 3:14PM

Flag Reply

Prof Richard J Shaw

As an addition to all this (much of which is incredibly rational)

I had a long chat with a colleague in Lausanne last week. Lausanne were worse affected than most of us and about a month ahead due to their proximity and communications with N Italy.
They have put these measures in place ... if you like a 'super green' zone / facility... and have not been using PPE as a result - just surgical mask and eye protection as would be relatively routine anyway,
Initially I thought this surprising but I think it rests on a package that has to be rigidly enforced:

1. Physical exam and history for covid symptoms
2. 2 week strict quarantine supported by CNS contact
3. Test at 48 hours prior to surgery
4. Extra CT chest 48 hours

5. This all supported by written and verbal patient communication - patient info sheet

We will be operating like this for a year or two, and need to find the best way forward with important elective surgery.
One way of making the point to patients about quarantine is the new data (from CovidSURG cohort) on post-operative mortality if operating on patients who have Covid ... very high.

Posted: Mon 27 Apr 2020 9:38AM

Flag Reply

Mrs Jennifer M Graystone

Hi Tim

I can update on this as the week goes on as I'm meeting with one of our ID Consultants this week to look at how to ramp up surgical services in their entirety, but I think the basics are:
- Identify a COVID 'light' centre (the initial idea was cold site or COVID free as per your Manchester 'hub' but there is a recognition that it is impossible to keep places COVID free with the way staff move around etc). The ideal is separate entrances, critical care, staffing, staff rest rooms etc
- Ask patients to self isolate for 2 weeks in advance
- Test patients 48 hours in advance of surgery and postpone if positive (jury still out on what testing - we have been doing CT thorax, but are moving to a position of swabbing all surgical patients and CT thorax only for those having major surgery - ie this group)
- We're starting to think about testing staff - our ID team are running a study to test a large proportion of our staff as they believe the rate of asymptomatic COVID in staff members is 10-15% and that alot of the transfer is among staff who are maybe not 'socially isolating' as they should on break/in corridors/

canteens etc as they feel somehow protected by the fact they are in a 'cold' site. There is talk of testing staff weekly
- Think about the amount of time your procedure will take. I'm doing a hemiglossectomy with single neck and RFF next week - fine, but my ENT/ Plastics colleagues have done some bigger procedures and did one with 2 teams of 2 and did the other one over 2 days to decrease the amount of time the teams spent operating in full PPE
- There's also something about thinking about staff, but I haven't managed to get our Trusts to think about this. We all know that some staff are more vulnerable to COVID for whatever reason, and it would make sense to deploy these staff to areas where they are less likely to be exposed to it eg cancer hubs and maintain a core cancer workforce.
- We've also been using a decision making group as well as our MDT which has ethics support to ensure our initial treatment decisions are appropriate and that other options have been considered before finalising treatment plans.

Jen

Posted: Mon 27 Apr 2020 8:15AM

nature

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Accelerated Article Preview

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Roman Wölfel, Victor M. Corman, Wolfgang Guggemos, Michael Seilmaier, Sabine Zange, Marcel A. Müller, Daniela Niemeyer, Terry C. Jones, Patrick Vollmar, Camilla Rothe, Michael Hoelscher, Tobias Bleicker, Sebastian Brünink, Julia Schneider, Rosina Ehmann, Katrin Zwirglmaier, Christian Drosten & Clemens Wendtner

Rapid communication

Estimating the asymptomatic proportion of coronavirus disease 2019 (COVID-19) cases on board the Diamond Princess cruise ship, Yokohama, Japan, 2020

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On 5 February 2020, in Yokohama, Japan, a cruise ship hosting 3,711 people underwent a 2-week quarantine after a former passenger was found with COVID-19 post-disembarking. As at 20 February, 634 persons on board tested positive for the causative virus. We conducted statistical modelling to derive the delay-adjusted asymptomatic proportion of infections, along with the infections' timeline. The estimated asymptomatic proportion was 17.9% (95% credible interval (CrI): 15.5–20.2%). Most infections occurred before the quarantine start.

An outbreak of coronavirus disease 2019 (COVID-19) unfolded on board a Princess Cruises' ship called the Diamond Princess. Shortly after arriving in Yokohama, Japan, this ship had been placed under quarantine orders from 5 February 2020, after a former passenger had tested positive for the virus responsible for the disease (i.e. severe acute respiratory syndrome coronavirus 2; SARS-CoV-2), subsequent to disembarking in Hong Kong. In this study, we conducted a statistical modelling analysis to estimate the proportion of asymptomatic individuals among those who tested positive for SARS-CoV-2 on board the ship until 20 February 2020 included, along with their times of infections. The model accounted for the delay in symptom onset and also for right censoring, which can occur due to the time lag between a patient's examination and sample collection and the development of illness.

Epidemiological description and data

By 21 February 2020, 2 days after the scheduled 2-week quarantine came to an end, a total of 634 people including one quarantine officer, one nurse and one administrative officer tested positive for SARS-CoV-2. These individuals were among a total of 3,711 passengers and crew members on board the vessel.

Laboratory testing by PCR had been conducted, prioritising symptomatic or high-risk groups.

Daily time series of laboratory test results for SARS-CoV-2 (both positive and negative), including information on presence or absence of symptoms from 5 February 2020 to 20 February 2020 were extracted from secondary sources [1]. The reporting date, number of tests, number of persons testing positive by PCR (i.e. cases) and number of symptomatic and asymptomatic cases at the time of sample collection are provided, while the time of infection and true asymptomatic proportion are not available.

A total of 634 people tested positive among 3,063 tests as at 20 February 2020. Of 634 cases, a total of 313 cases were female and six were aged 0–19 years, 152 were aged 20–59 years and 476 were 60 years and older (Figure). Cases were from a total of 28 countries, with most being nationals of six countries, namely Japan (n = 270 cases), the United States (n = 88 cases), China (n = 58 cases; including 30 from Hong Kong), the Philippines (n = 54 cases), Canada (n = 51 cases) and Australia (n = 49 cases).

Of the 634 confirmed cases, a total of 306 and 328 were reported to be symptomatic and asymptomatic, respectively. The proportion of asymptomatic individuals appears to be 16.1% (35/218) before 13 February, 25.6% (73/285) on 15 February, 31.2% (111/355) on 16 February, 39.9% (181/454) on 17 February, 45.4% (246/542) on 18 February, 50.6% (314/621) on 19

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Research Paper

Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection

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ABSTRACT

Background: The outbreak of 2019 novel coronavirus disease (COVID-19) in Wuhan, China, has spread rapidly worldwide. In the early stage, we encountered a small but meaningful number of patients who were unintentionally scheduled for elective surgeries during the incubation period of COVID-19. We intended to describe their clinical characteristics and outcomes.
Methods: We retrospectively analyzed the clinical data of 34 patients underwent elective surgeries during the incubation period of COVID-19 at Renmin Hospital, Zhongnan Hospital, Tongji Hospital and Central Hospital in Wuhan, from January 1 to February 5, 2020.
Findings: Of the 34 operative patients, the median age was 55 years (IQR, 43–63), and 20 (58·8%) patients were women. All patients developed COVID-19 pneumonia shortly after surgery with abnormal findings on chest computed tomographic scans. Common symptoms included fever (31 [91·2%]), fatigue (25 [73·5%]) and dry cough (18 [52·9%]). 15 (44·1%) patients required admission to intensive care unit (ICU) during disease progression, and 7 patients (20·5%) died after admission to ICU. Compared with non-ICU patients, ICU patients were older, were more likely to have underlying comorbidities, underwent more difficult surgeries, as well as more severe laboratory abnormalities (eg, hyperleukocytemia, lymphopenia). The most common complications in non-survivors included ARDS, shock, arrhythmia and acute cardiac injury.
Interpretation: In this retrospective cohort study of 34 operative patients with confirmed COVID-19, 15 (44·1%) patients needed ICU care, and the mortality rate was 20·5%.
Funding: National Natural Science Foundation of China.

1. Introduction

In December 2019, an outbreak of the 2019 novel coronavirus disease (COVID-19) caused by the SARS coronavirus 2 (SARS-CoV-2) occurred in Wuhan, China [1,2]. It has spread rapidly to other areas in China and worldwide. [3,4] The most common manifestations of COVID-19 included fever, dry cough, dyspnea, myalgia, fatigue, hypolymphaemia, and radiographic evidence of pneumonia. Complications (eg, acute respiratory distress syndrome [ARDS], arrhythmia, shock, acute cardiac injury, secondary infection, and acute kidney injury) and death may occur in severe cases. [2,5–7] The course of the COVID-19 is long, and COVID-19 is highly contagious even during the incubation period. [8] Furthermore, asymptomatic carrier of SARS-CoV-2, accounting for 1% of the laboratory confirmed cases of SARS-CoV-infection, [9] may potentially transmit the virus during incubation time, [10] which makes the identification and prevention of COVID-19 infection highly challenging. During the early phase of the COVID-19 outbreak, we encountered a small number of asymptomatic patients who underwent elective surgeries during the incubation period of COVID-19 infection, but the clinical manifestations and prognosis of these patients were beyond our expectation. It is our belief that these represent a specific surgical patient population that deserves our attention.

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