

## Pleural services during the COVID-19 Pandemic - Revised

The current COVID-19 pandemic has put an enormous strain on NHS resources. It has caused disruption to established clinical pathways. This document is a revision of the initial guidance on the provision of a pleural service during this crisis (V1 - 3/4/2020). Given the absence of evidence in this area, this represents a consensus statement from pleural experts in the UK. The priorities remain to continue to provide diagnostic pathways for suspected cancer patients, to minimise hospital visits and admissions for symptomatic patients with both benign and malignant conditions, and to ensure patient and staff safety. In addition, planning for future outpatient work needs to be considered.

### Diagnostic pathways:

- For patients with suspected pleural malignancy, in whom systemic anti-cancer therapy (SACT) would likely be undertaken despite the pandemic, diagnostic pleural procedures should continue:
  - If the pre-test probability of successful cytological diagnosis and predictive marker testing from pleural fluid cytology is judged to be sufficiently high, or if other factors & resources dictate, proceed with diagnostic pleural aspiration.
  - If the pre-test probability of successful cytological diagnosis and predictive marker testing from pleural fluid cytology is judged to be low, and where expertise and resources allow, consider directly moving to histological sampling via US-guided cutting needle biopsy or day case local anaesthetic thoracoscopy (+/- IPC insertion during thoracoscopy).
- Diagnostic pleural procedures should continue for patients with suspected pleural infection.

### Therapeutic pathways: Pleural Effusion

- For patients with a malignant pleural effusion and significant symptoms of breathlessness, or those in whom recurrent effusion of any underlying cause requires definitive management, a discussion should be had regarding the merits of therapeutic pleural aspiration, admission for talc pleurodesis or outpatient Indwelling Pleural Catheter (IPC) insertion.
- Admission for talc pleurodesis could be considered following a careful discussion of the risks of hospital admission and alternative strategies, COVID-19 screening is negative and the procedure / admission can be completed in a non-COVID area with appropriate safety precautions in place. (*New recommendation*)
- The risk of further pleural interventions during the COVID-19 crisis should be assessed if planning a therapeutic pleural aspiration.
- Consider, where possible, a strong recommendation that family members are trained in the drainage of IPCs for those requiring IPC insertion to support social isolation, rather than district nurse visits.
- Consider, where possible, training family members in drainage technique on the same day as IPC insertion.
- Talc slurry via an IPC as an outpatient could be considered if COVID-19 screening is negative. (*New recommendation*)
- Where possible, multiple procedures should be planned for a single visit e.g. image-guided pleural biopsy and IPC insertion at the same visit.
- Once diagnosed, pleural infection should still be treated with intercostal drainage and admission as per previous BTS guidelines (2010).

### Therapeutic pathways: Pneumothorax

- Pneumothorax in the context of COVID-19 infection is rare (case reports only).
- Primary Spontaneous Pneumothorax (PSP) should be managed in an ambulatory pathway where local expertise and resources allow:
  - Consider conservative management of minimally symptomatic patients with an appropriate risk assessment for ambulatory outpatient care.
  - Consider management of symptomatic patients with an integrated device (e.g. Rocket Pleural Vent or equivalent) or 12Fr chest tube with Heimlich valve attached, and outpatient review.
  - Patients discharged with a pleural device or chest drain in situ for a pneumothorax should be advised to self-isolate given the risk, albeit small, of aerosol generation.
  - Those patients with large air leak or who have failed management with 12Fr chest drain with Heimlich valve may still require admission to hospital for further management.

### Consider deferral of or alternative management in the following groups:

- Patients in whom comorbidities or performance status are likely to preclude SACT in malignant pleural disease (see BTS Guidance on Lung Cancer and Mesothelioma [1]), unless symptomatic from recurrent effusion.
- Patients with mild/tolerable symptoms.

### Patient and staff safety:

- Patients planned for a pleural procedure with new symptoms consistent with COVID-19 infection should be delayed, if possible, and managed as confirmed COVID-19 infection.
- Elective patients should be screened for possible COVID-19 infection by nasal / oropharyngeal swab for COVID-19 infection within 48 hours of the procedure (per BTS Guidance on Bronchoscopy [2]). (*New recommendation*)
- Clinicians may, in addition, consider a low-dose Computed Tomography (CT) scanning on the day of the procedure for radiological evidence of COVID-19 disease. (*New recommendation*)
- Emergency/urgent cases should be managed as appropriate and may not allow time for screening.

### Pleural procedures:

- Pleural effusion is uncommon in the context of COVID-19 infection (1.5-6% [3-5] and there is very limited data on infectivity of pleural fluid.
- Therefore, “closed” pleural procedures such as pleural aspirations and chest drain insertion can be undertaken in Level 1 PPE (surgical mask and visor, as well as gown and gloves). (*New recommendation*)
- Although not explicitly listed as Aerosol Generating Procedures (AGP) in PHE guidance [6], we suggest that “open” procedures such as thoracoscopy and IPC insertion, where pleural fluid may splash, should still be considered AGP. Therefore, Level 2 PPE should be worn (FFP3 mask, long sleeved gown, gloves, eye protection - see latest PPE guidance [6]).

### Chest drain management:

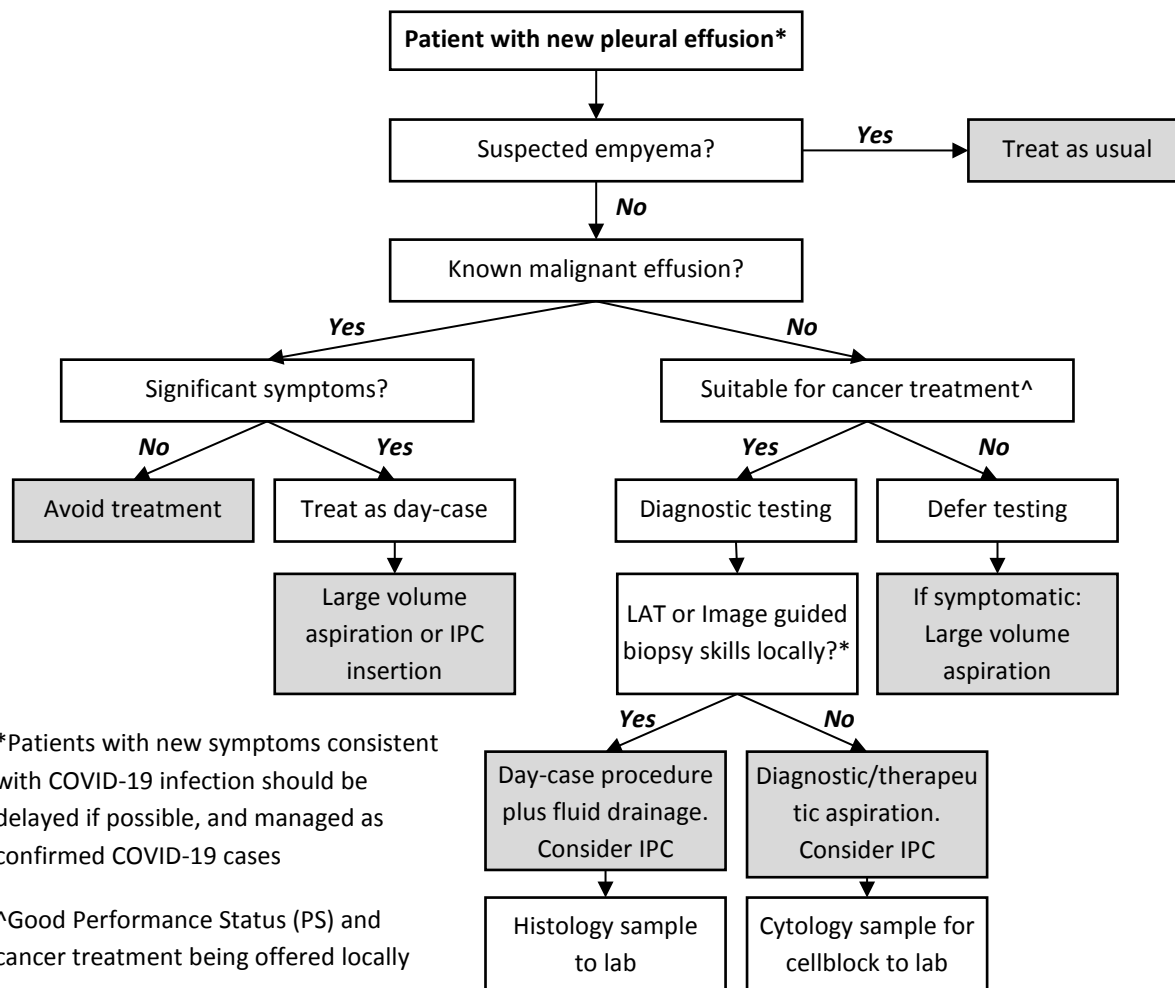
- Patients with confirmed or suspected COVID-19 with a chest drain and air leak (i.e. a bubbling drain) should be considered for strategies to minimise droplet exposure via the chest drain circuit. Options include:
  - Connect any chest drain to wall suction (even in cases where suction is not normally indicated but set at a very low level such as 5cmH<sub>2</sub>O) thereby creating a closed system (whilst complying with MHRA guidance[7])
  - Install a viral filter onto the suction port of a Rocket chest drain bottle[8]. *New recommendation*
  - Digital drain circuits (for example, Thopaz) are an alternative method of reducing risk of droplet spread, but they do not contain a viral filter.
- In patients with a chest drain no COVID-19 symptoms and negative swab/screening CT, should be managed as standard care. *(New recommendation)*

### Ongoing patient contact:

- In order to maximise the outpatient management of pleural patients, close liaison with patients will be required.
- In planning for pleural clinics, provision should be made for some patients to attend face-to-face appointments (where absolutely necessary), for example: follow-up post-empyema, where thoracic ultrasound is required or discussing test results (which cannot be undertaken remotely). *(New recommendation)*
- Face-to-face consultations should be managed with appropriate social distancing measures in waiting areas and clinic rooms. *(New recommendation)*:
  - Consultation rooms should be designated as 'non-COVID'
  - Patients should be phoned to pre-book appointments and screened for symptoms. Any patients reporting symptoms consistent with COVID-19 should be instructed to self-isolate for at least 7 days and until free symptoms.
  - A designated staff member should welcome the patient, encourage them to wash to their hands, provide a mask, temperature screen them and direct them to the 'non-COVID' room.
  - Optimise distancing measures e.g. cordoning off reception and waiting areas, spaced seating, posters/ banners and floor stickers.
  - Surgical masks, visor, gloves and apron should be worn by staff with close contact (within 1 metre).
  - Equipment should be cleaned regularly between patients.
- Telephone or video clinic follow-up should be considered for *(New recommendation)*:
  - Remote assessment of symptoms for patients having recently undergone therapeutic drainage.
  - Device troubleshooting for patients with IPCs.
  - Managing patient/carers expectations and concerns.
  - Routine follow-up of benign asbestos pleural disease or benign pleuritis, by arranging outpatient CXR or CT scans, as local radiology capacity allows.
- The role of the pleural nurse specialist (where this exists) remains critical in ensuring appropriate patient support and contact. Their time should be protected, rather than re-deployed.

Clearly the situation will vary according to hospital capacity and capability, and may need to be reviewed as the COVID-19 pandemic continues.

### Flowchart for management of pleural effusion in COVID-19 pandemic



\*Patients with new symptoms consistent with COVID-19 infection should be delayed if possible, and managed as confirmed COVID-19 cases

^Good Performance Status (PS) and cancer treatment being offered locally

LAT: Local Anaesthetic Thoracoscopy

\*Clinical judgement on a case by case basis as well as an assessment of the pre-test probability of successful cytological diagnosis (including local resources e.g. p16 FISH testing) should always dictate choice of diagnostic test

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