

Indwelling pleural catheter for the management of empyema in a patient with learning disability: A case of medical complexity

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Abstract

Routine use of IPC in the management of infection of the pleural space is contraindicated although there are challenging situations in which chest drains cannot be used due to number of reasons.

A 63-year-old patient with a background of paranoid schizophrenia and severe learning disability with challenging behaviour presented with deterioration of mental health status for 2 days and chest discomfort and was managed as aspiration pneumonia. Her clinical condition deteriorated despite treatment and repeat CXR showed right sided effusion. Effusion was suspected to be pleural empyema and it was treated with chest drains. The patient pulled out three chest drains and it was challenging to retain the drain in situ to manage the empyema. There was concern of a trapped lung and pus was building up as the chest drains could not be maintained. A multi-disciplinary meeting was held, and it was decided to proceed with an Indwelling Pleural Catheter (IPC) with intermittent drainage, as keeping the IPC connected to water seal was not possible.

IPC can be used in specific situations to treat empyema when chest drain insertion is challenging. Best interest meeting attended by multi-disciplinary teams is of immense help in challenging situations where patients lack capacity.

Keywords: Indwelling pleural catheter; Empyema; Schizophrenia; Learning disability; Challenging behaviour.

Introduction

There are ample studies to highlight the place of Indwelling Pleural Catheters (IPC) in the management of malignant pleural effusions. Empyema of the lung is managed with draining of the pus combined with antibiotics. Routine use of IPC in the management of infection of the pleural space is contraindicated

although there are challenging situations in which chest drains cannot be used due to number of reasons. Here we describe a case of an empyema managed with IPC due to poor tolerance of chest drains.

Case Report

A 63-year-old patient with a background of paranoid schizophrenia, oesophagitis, hiatus hernia, severe learning disability with challenging behaviour presented with deterioration of mental health status for 2 days. This was associated with decrease in oral intake, vomiting for 24 hours and chest discomfort. She was clutching her chest on admission. There was no fever or breathlessness noted on arrival. On examination she was slightly aggressive and afebrile. Examination was limited due to uncooperative behaviour. However, there was reduced breath sounds on right side of the thorax.

Initial chest X ray showed right sided haziness and with the given history it was decided to manage her as aspiration pneumonia. She was started on intravenous antibiotics and fluids. Her clinical condition deteriorated despite treatment and repeat CXR showed right sided effusion and she was transferred to ICU due to the development of hypoxia. Initially effusion was suspected to be empyema and it was treated with chest drains. The patient pulled out three chest drains and it was challenging to retain the drain in situ to manage the empyema. There was concern of a trapped lung and empyema was building up as the chest drains could not be maintained. A multi-disciplinary meeting was held, and it was decided to proceed with an Indwelling Pleural Catheter (IPC) with intermittent drainage, as keeping the IPC connected to water seal was not possible. The IPC was inserted under sedation and was used to drain the empyema and there was successful clinical recovery and it was removed after 2 months.

She had a very prolonged hospital stay of 4 months complicated with seizures, feeding issues and the complexity of placement issues due to multiple social problems.

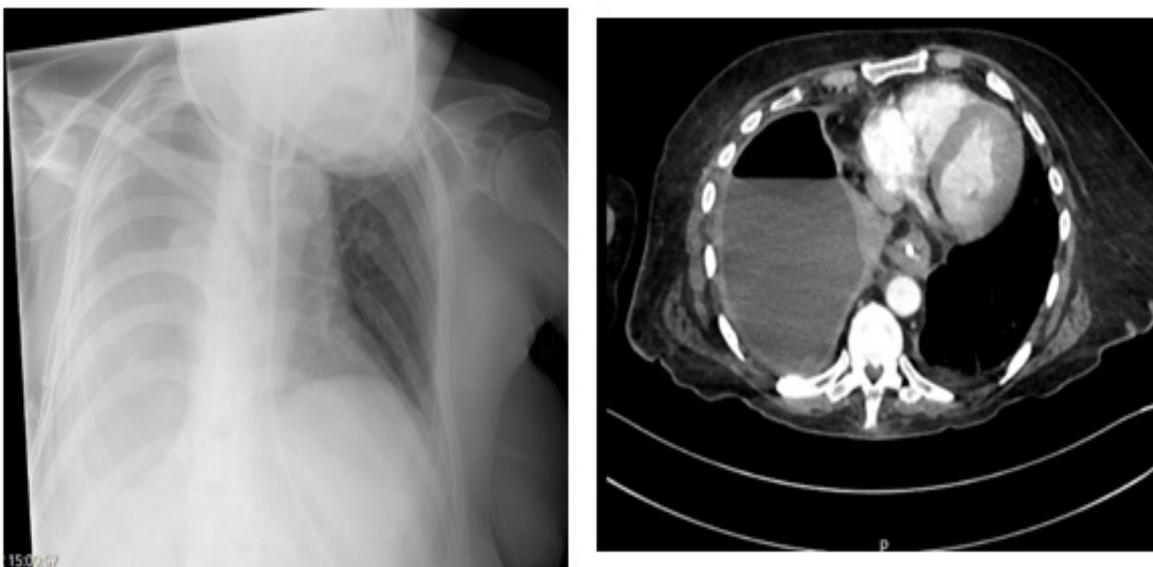


Figure 1: CXR and CT images showing right sided empyema with pleural enhancement.

Discussion

Empyema is characterised by the presence of pus in the pleural space and the cornerstone of treatment is prompt removal of the collection of infection from the pleural space and antibiotic therapy. Antibiotics should ideally be pathogen specific and guided by the sensitivity pattern. We would like to highlight the fact that bacteriology involved in pleural infection is distinct from that of pneumonia and has different transmitting mechanisms predominantly originating from haematogenous and oropharyngeal sources [1-3].

With the advent of small-bore pleural tube, drainage of the empyema became the treatment of choice at the initial stage combined with appropriate antibiotics. Our patient was initially managed with intercostal tube drainage for the management of empyema and the chest drain had to be inserted several times as she was pulling out the tubes. It was noted that maintenance of chest drains was not possible in her case due to the poor cooperation and expected improvement could not be achieved due to lack of continuous drainage.

Severe inflammatory reaction secondary to empyema results in residual pleural thickening. Previous studies have demonstrated use of antibiotic treatment with pleural drainage in early stages to relieve dyspnoea and reduce residual pleural thickening. There were a few obstacles that we faced in our case. As she was diagnosed with learning disability and paranoid schizophrenia, she lacked the capacity to make decisions. In addition, empyema was building up as she could not keep the chest drains in-situ which could make her more symptomatic and septic. Her case was further complicated as there was limited family involvement initially and discussions were between the health staff.

A best interest meeting was arranged and after a detailed discussion with other specialties including critical care it was decided to treat her with indwelling pleural catheter to drain her empyema intermittently. There were no previous case reports to highlight the use of IPC in the management of bacterial empyema. There was one case report from India in which the authors used an IPC in the management of a tuberculous empyema as an outpatient [4]. Use of IPC in pleural infection is usually considered as a contraindication. However, our case was exceptional as we did not have a choice to drain her infected pleural collection due to the number of reasons outlined above. She was not a candidate for surgery based on her co-existing conditions and showed fluctuating emotional changes throughout the disease course.

Our patient with empyema was successfully managed with IPC with intermittent drainage for 2 months as an in-patient. Interval between drainages was increased or reduced based on fluid drained. IPC is typically used for the outpatient management of preferably malignant effusion; however, the purpose of its use is totally different in our case as she had ongoing pleural infection and complex placement issues. She was an inpatient for a further 4-month period after removal of the IPC as it was very difficult to find a placement for her, highlighting the complexity of the management of this patient.

Conclusion

IPC can be used in specific situations to treat empyema when chest drain insertion is challenging. Best interest meeting attended by multi-disciplinary teams is of immense help in challenging situations where patients lack capacity.

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Manuscript Information: Received: February 20, 2024; Accepted: March 21, 2024; Published: March 29, 2024

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Citation: Wickramasinghe S, Haley A, Gudur S, Munavvar M. Indwelling pleural catheter for the management of empyema in a patient with learning disability: A case of medical complexity. *Open J Clin Med Case Rep.* 2024; 2217.

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