A review of pleural infection in Northumbria Healthcare NHS Foundation Trust

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Introduction

Understanding epidemiology of and deficiencies in care is crucial to inform practice. We serve 600,000 patients in a well-established pleural service.[1]

Method

A retrospective analysis of all patients with pleural infection between December 2016 and December 2017 was conducted.

Results

36 patients were identified, all being admitted from the community. The average age was 64.5 years and 19 were over 65 years of age.

Consolidation was present on chest X-ray in 24.

Comorbidities were malignancy (seven), alcohol excess (five), mental health (five), current smokers (nine) and ex-smokers (16). Drug use was recorded in one; eight had an HIV test.

Thoracic ultrasound findings were documented in 15 notes (commonest comment was 'multiloculated fluid' (11), others: 'small or moderate size' and 'echogenic').

28 samples of pleural fluid were available for analysis. Fluid was pus or turbid in 13, blood-stained in five, serous in six and four had no comments. pH result was available in 17 (and was <7.2 in 8); lactate dehydrogenase (LDH) was reported in 14.

In 11 (39%) samples cultures were positive: two *Streptococcus pneumoniae*, one *Strep intermedius*, one *Actinomycosis turnicensis* and *Haemophilus parainfluenzae* (in intravenous drug user), two *Staphylococcus aureus* (patients with indwelling pleural catheters). Other organisms included *Strep dysgylactiae*, *Strep anginosus* and mixed anaerobes.

Twenty-six had chest drains inserted with 10 receiving intrapleural lysis; nine received antibiotics only.

Thirty-five patients received piperacillin – tazobactam or co-amoxiclav initially. Clindamycin was given in 60% of cases, even for fully penicillin-sensitive organisms. Antibiotic duration was between 2 and 8 weeks.

The mean length of stay was 9 weeks (ICQ 1 – 56). All survived to discharge in first admission; three (9%) had died within 30 days, and three more within 6 months. Eight were readmitted within 38 days – 75% due to infection – with 50% staying for 4 weeks.

Pleural ultrasound or procedure
Northumbria Healthcare NHS Foundation Trust

AFFIX PATIENT STICKER

FIRST NAME .....
SURNAME .....
DATE OF BIRTH / /
MRN .....

CONSENT: Written ☐ Verbal ☐
If verbal, risks and benefits explained:

Pleural ultrasound findings Side: Left ☐ Right ☐
Include size, depth, appearance, loculations etc

Procedure report *tick if done*
Procedure performed: Diagnostic tap ☐ Aspiration ☐ Chest drain ☐
Drain size (if appropriate) .....
Aseptic technique ☐
Local anaesthetic infused subcut ☐ Drug..... Dose.....
Document any difficulties or complications:

Pleural Fluid report *volume, appearance etc*

Drainage plan (if applicable)

Performed by: .....
Signed: .....GMC.....Grade.....
Supervisor/Assistant: .....
Date:...../...../..... **Time:**.....

Sent for:
pH ☐
Glucose ☐
Protein ☐
Albumin ☐
LDH ☐
Cytology ☐
C&S ☐
AFB/TB ☐
Lipids ☐
Amylase ☐

CXR required?
Yes ☐
No ☐

Fig 1. Pleural infection and procedure pro forma.

Conclusions

Our data are in line with known epidemiology, microbiology, comorbidities and expected length of stay.[2]

We need to improve checking of HIV status, ultrasound reporting, sending for biochemical and microbiological analysis in accordance with British Thoracic Society guidance and in blood culture bottles, and to stop reliance on clindamycin.[3–6]

We have hence introduced a pleural infection and procedure pro forma (see Fig 1). ■

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Conflicts of interest

None declared.

References

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