‘C S’ Perspectives About Thoracic Empyema—the ‘Comprehensive Suggestions’

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Thoracic empyemas are common in surgical practice. They need proper diagnosis and correct management. These aspects, along with benefits of a systematic approach, have been described using the letters 'C and S' [1] to give a novel way of remembering the essentials of thoracic empyema.

1. **Complete Story** to be elicited. All details of the History of the illness, especially duration of the chest symptoms.
2. **Clinical State** to be assessed by a complete general examination and a full assessment of the chest following the set pattern of clinical examination.
3. **Chest Skiagram** or the radiography of the chest (both, PA and Lateral Views) is the first imaging modality to be asked for and read carefully.
4. **Confirm Status**, by the diagnostic aspiration, better under image control localization, with fluid analysis to give stage of disease [2].
5. **Culture & Sensitivity** of aspirated fluid including a smear for AFB.
6. **Check Sputum** for infection and also for AFB by the ZN Stain.
7. **Computerised Scan** for cross-sectional and sagittal/coronal reconstructions to assess the disease process in the chest on both, the 'lung' and the 'mediastinal' windows.
8. **Confirmatory Scopy** (fibre-optic bronchoscopy) is needed to rule out endo-bronchial lesion and obstruction. Lab analysis and stains of broncho-alveolar lavage give a better yield for Koch's.
9. **Choose Strategy**. It is the planning of the intervention in discussion with the medical, radiological, anaesthetic, physiotherapy and nursing teams. *Within the first 2 weeks, minimal access by VATS is now the standard of care.* When the clinical duration is over 2 weeks and scans suggest development of a thick cortex, then a formal thoracotomy is indicated to achieve complete drainage/decortication [3].
10. **Closed Solution** of either just an ICD or the VATS procedure is chosen when the disease is in early presentation and there is no cortex seen on imaging.
11. **Cut (with) Scalpel** or the open procedures is offered to those with complex collections/loculations. A rib resection over the collection, a mini thoracotomy and clean up or the formal thoracotomy with decortication can be done.
12. **Clean & Scavenge**. The opportunity to enter the chest must ensure complete removal of all toxic material, pus, flakes and cortex from ALL aspects of the lung. Closure is ALWAYS with a wide-bore intercostal Chest drain (the ICD) with the underwater seal.
13. **Combined Support** of the anaesthetists for pain relief, physiotherapist for breathing exercises, and nursing to ensure proper care of the ICD, the other vitals and the nutrition.
14. **Conduit Supervision**. It is mandatory the surgeon has a personal review of the ICD during the entire length of its stay in situ. The look for the air leak, the quality and quantity of drainage and the ensuring of patency are vital to the outcome.

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15. **Continued Surveillance.** ICD removal is often delayed, and patients are sent home to allow time for recovery.

By the use of the above **15 ‘C S’, the benefits are - more ‘C S’...!**

1. **Control (of) Sepsis**
2. **Clean Shadows** meaning radiological improvement
3. **Clear Sounds** of equal and clear air entry in both lung fields
4. **Customer Satisfaction** with the patient being able to return to full activity soon
5. **Comforting Sleep** for all..!

Compliance with Ethical Standards

Conflict of Interest I declare that “I have No Potential Conflict of Interest” in the writing of this article.

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