A Victorian Government initiative

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EDITORIAL

Welcome to the first issue of 2009. This year began in the same manner as the past year closed, that is, a hectic and busy time for the Clinical Liaison Service. The whole Coronial Services Centre has been especially focussed on managing the tragedies arising from the extreme hot weather.

This edition focuses on deaths caused by pneumonia. These are usually considered to be a natural cause death. This is a contrast to the other clinical issues raised in past editions that typically examined external cause deaths.

The cases highlight the need to be proactive. Prevention of natural cause deaths requires us to closely examine the clinical situation because it is not always obvious what could be done better. The tendency is to accept the death is due to a disease such as a bacterial or viral pneumonia.

In contrast, the external cause deaths often have clinical situations where something has obviously not gone according to plan such as a medical error.

ONLY A LITTLE BIT TIRED, I'LL BE ALRIGHT TOMORROW

CASE NUMBER 3641/03

Case Precise Author: Prof Joseph E Ibrahim, (CLS)

SUMMARY

Ms M was an 85 years old female found dead in her bed at home. She had been feeling tired the day before her death. The autopsy showed lobar pneumonia and the results of microbiology culture where positive for Streptococcus pneumoniae and Haemophylus influenza. The forensic pathologist did not find any evidence of injuries that could have contributed to the death.

AUTHOR COMMENTS

This case shows the insidious nature and rapid progression to death from bacterial pneumonia. Older persons are especially vulnerable to rapid deterioration and may not present with significant symptoms.

In terms of the investigation the forensic pathologist needed to consider all other possible causes of death, before concluding it was natural causes from lobar pneumonia. This is the reason the pathologist reported on the absence of injuries.

Consider your answers to the following questions: (1) Is there a vaccine for Streptococcus pneumoniae? (2) Let's assume there is, should Ms M have been vaccinated? (3) Let's assume she was not vaccinated, would you still consider this death to be due to natural causes?

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Our other publication the Coronial Communiqué can be found on our website at: **http://www.vifm.org/n961.html**

FEEDBACK

The CLS team is keen to receive feedback about this communication especially in relation to changes in clinical practice.

Please email your comments, questions and suggestions to: **racc@vifm.org**

SILENT ASPIRATION

CASE NUMBER 0588/07

Case Precise Author: Prof Joseph E Ibrahim, (CLS)

CLINICAL SUMMARY

Ms H was a 76-year-old female resident requiring high-level care at a metropolitan Residential Aged Care Service (RACS) since 2005. Her past medical history included dementia, wandering, falls and fracture to both hips following falls in 2006. Ms H required a soft diet and thin fluids.

In early 2007, there was an occasion when she was found to be drowsy and needed full assistance to eat breakfast. Later that month she was complaining of pain and the analgesia regimen was changed on several occasions. Some weeks later staff found Ms H deceased in her bed. Ms H's general practitioner attended the RACS but was not able to establish the cause of death and the death was reported to the coroner.

PATHOLOGY

The cause of death following an autopsy was 1a. Bronchopneumonia, and 1b. Acute on chronic aspiration.

INVESTIGATION

The coroner directed that further investigation was required because the autopsy found evidence that aspiration had occurred on more than one occasion. The forensic pathologist also considered and tested for recent ingestion of sedating medication such as benzodiazepines and analgesia that may cause respiration depression. Statements received from the RACS staff indicated no evidence of any previous choking incident nor any observed signs or symptoms of a swallowing deficit, aspiration or pneumonia.

CORONER'S COMMENTS AND FINDINGS

The coroner concluded that whilst the autopsy revealed evidence of acute on chronic aspiration, there was not evidence that the RACS staff had observed any chronic aspiration or swallowing or choking difficulties prior to the day of Ms H's death. The case was closed with a Chambers Finding.

AUTHOR COMMENTS

The possibility that medications may contribute to aspiration is important to consider and worthwhile discussing with the pharmacist and general practitioner. The use of medications that are sedating, such as benzodiazepines, must always be used cautiously. Residents need regular re-assessment if prescribed these agents. This case also demonstrates the comprehensive nature of the death investigation. The coroner is able to draw on information from the autopsy, toxicology, forensic pathology and clinical practitioners to determine the circumstances of death.

IT'S NOT A COLD IT'S THE 'FLU'

CASE NUMBER 1337/03

Case Precise Author: Prof Joseph E Ibrahim, (CLS)

SUMMARY

Ms P was a 78 years old female with chronic obstructive airways disease who died from an atypical pneumonia consistent with having been caused by a virus such as influenza.

AUTHOR COMMENTS

This case is an example of primary viral pneumonia. What is the other type of pneumonia that can occur after the viral infection? How can you tell one from the other?

We often forget how serious the 'flu" can be, especially for older persons and those with multiple health conditions. Each year the questions to ask include whether immunization with the influenza vaccine has been offered? Accepted? Administered?

BRONCHO-PNEUMONIA THE OLD MAN'S FRIEND

CASE NUMBER 3909/02

Case Precise Author: Prof Joseph E Ibrahim, (CLS)

CLINICAL SUMMARY

Mr D was a frail 90-year-old male who entered a metropolitan Residential Aged Care Service (RACS) as a resident requiring low-level care in January 2002. Past medical history included dementia, heart disease, transient ischaemic attacks, osteoarthritis, chronic obstructive pulmonary disease and chronic renal impairment. In March 2002 he was placed on a Community Treatment Order that involved administering 2.5mg of olanzepine (zyprexia) daily. Once Mr D's mental health improved he took the medication willingly.

In October 2002, Mr D's condition deteriorated, he became more frail and the renal function worsened. The Aged Care Assessment Service re-assessed Mr D's level of care to 'high care' and a transfer to a suitable RACS occurred shortly after. Over the next two weeks Mr D's condition continued to deteriorate requiring opiate analgesia to manage his general discomfort before dying.

PATHOLOGY

The cause of death was 1a. Bronchopneumonia, Renal Failure.

INVESTIGATION

The circumstances surrounding the death were clarified from statements provided by the RACS staff and the medical practitioner.

CORONER'S COMMENTS AND FINDINGS

The coroner concluded the cause of death as Bronchopneumonia, Renal Failure. This case was closed without any additional comments.

AUTHOR COMMENTS

In some situations natural cause deaths are more closely examined to ensure that care was appropriate. At times clinicians may become frustrated because the cause of death appears obvious and they wonder why an investigation is necessary.

In this case, the investigation assists in clarifying and ensuring a detailed understanding of the need and appropriateness for a Community Treatment Order that mandates treatment. Other important aspects of care in this case include: the use of olanzepine, which may have contributed to the bronchopneumonia; the decision-making, timeliness and processes involved in reassessing a resident's level of care; and transferring to the setting where these needs are met.

Pneumonia was once known as "the old man's friend" because left untreated it was considered a gentle and natural way of dying.

COUNTING THE RISK FACTORS, ONE, TWO, THREE

CASE NUMBER 0946/07

Case Precise Author: Prof Joseph E Ibrahim, (CLS)

SUMMARY

Ms C was an 81 years old female who resided in her own home. Her past medical history included arthritis, Parkinson's disease and osteoporosis. When her son came to visit she was lying prone on the lounge room floor with shallow breathing. The son went to the medical clinic to arrange a house call. When he returned Ms C appeared worse. The ambulance service was called and when paramedics arrived Ms C was unable to be resuscitated. The forensic pathologist who conducted the autopsy reported the cause of death as an infective exacerbation of chronic obstructive airways disease with contributing factors of coronary artery atherosclerosis and mitral valve disease.

AUTHOR COMMENTS

This case demonstrates the rapid progression of the infection and the range of risk factors. How many risk factors are present? Five! Age; Parkinson's disease; chronic obstructive airways disease; mitral valve disease; and coronary artery atherosclerosis. It is important to recall that the chest infection causes hypoxia and this additional stress, potentially worsens the underlying heart disease.

HYPOSTATIC PNEUMONIA: A REASON NOT TO SIT STILL

CASE NUMBER 3629/03

Case Precise Author: Prof Joseph E Ibrahim, (CLS)

CLINICAL SUMMARY

Ms M was a frail 95-year-old female resident of a metropolitan Residential Aged Care Service (RACS) requiring high-level care. Her past medical history included dementia and pernicious anaemia. In 2003, Ms M had a fall suffering a fractured neck of femur and underwent a Moore's hemiarthroplasty at a metropolitan acute care hospital and was discharged back to the RACS within 4 days. At the RACS Ms M remained in bed most of the time. Three weeks later she had another fall and died in bed within two days.

PATHOLOGY

The cause of death following an inspection and report was: 1a. Hypostatic bronchopneumonia, 1b. immobility following repair of an osteoporotic fractured right neck of femur, 2. dementia, old age, debility.

CORONER'S COMMENTS AND FINDINGS

The coroner concluded the cause of death as hypostatic bronchopneumonia arising from immobility following repair of an osteoporotic fractured right neck of femur. The case was closed without any additional comments.

AUTHOR COMMENTS

This case is a classic presentation of pneumonia developing because of immobility. Although the final outcome was predictable given Ms M's frailty, age, nature of injury, it is an important reminder that we should keep residents as active as possible especially after surgery. A question worth asking is "How would you have prevented the falls?"

EXPERT COMMENTARY

Older persons who are residents of RACS have a higher mortality when they develop pneumonia compared to older individuals in the community. Some of the key factors that increase the risk of pneumonia include chronic obstructive pulmonary disease, heart failure, conditions causing aspiration (e.g., stroke or Parkinson's disease) and use of sedating medications (e.g., benzodiazepines and opiates.

Older persons are generally at greater risk of infection because of their greater frailty, the immune system to fight infection becomes impaired with age, multiple chronic illnesses (e.g., diabetes mellitus) and medications that may impair the immune system (e.g., corticosteroids).

Preventive strategies are important and include the well-known infection control measures such as hand hygiene, following the precautions to reduce risk of aspiration, reducing use of sedating medication and vaccination.

Diagnosis of chest infections and pneumonia may be difficult because symptoms are often non-specific with an older person, sometimes the early features are confusion or delirium. Also obtaining chest X-rays is rarely a simple task in a frail resident with dementia.

Although Strep. pneumoniae is the most common cause of community-acquired pneumonia it is uncommon to obtain a positive microbiological diagnosis. Factors that increase the risk include alcohol abuse, cigarette smoking, asthma, immuno-compromised persons and those who have had a splenectomy. Treatment for this bacterial pneumonia is readily available with penicillin, however the mortality rate is significant. Recommendations are for pneumococcal vaccine to be given at age 65 years.

Influenza remains an important issue especially in RACS because of communal living. People still die from this infection and vaccination is recommended annually for all residents, staff and care-givers. The importance of staff vaccination cannot be under-estimated. There is evidence demonstrating the lower mortality rates for residents in the institutions where staff is vaccinated.

Pneumonia is one of the major complications of influenza, and is more likely to occur in older persons, those with underlying heart or lung conditions, diabetes mellitus and renal disease. The pneumonia may be primary, i.e., the virus itself may cause it, or secondary i.e., a bacteria infection follows. In this situation the person appears to be getting better from the flu and then develops a new fever and symptoms return.

Infection control programs are amongst the first to use a systems approach to care and date back to Florence Nightingale's time. Reflect on the following questions: Is there a clear and well documented infection control program? Is there a designated trained person who is responsible for monitoring? Does the relevant staff understand the 'reportable' infections? Are we prepared for prevention activities and how to manage an outbreak?

The information in this section is based on the work of:

Richards C and Richards MJ., Important sites and pathogens causing infections in long term care facilities, & Principles of infection control in long term care facilities and Marrie JT and Tuomanen EI, Pneumococcal pneumonia in adults. Version 16.3: October 1, 2008. UpToDate.

RESOURCES

1. The Australian Immunisation Handbook 9th Edition 2008, provides clinical guidelines on the safest and most effective use of vaccines. http://immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook-home

2. HealthInsite has the answers to all your questions about influenza vaccination and links to a range of other relevant sites and documents

http://www.healthinsite.gov.au/topics/Influenza_Vaccine

3. The NHMRC has a quick guide that answers frequently asked questions http://www.fightflu.gov.au/questions.

4. Guidelines for the Prevention and Control of Influenza Outbreaks in Residential Care Facilities for Public Health Units in Australia is available at

http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-flu-guidelines.htm.

5. Also remember to check the following RAC-Coronial Communiqué available at: http://www.vifm.org/n963.html

a. RAC-Coronial Communiqué Volume 2 Issue 2 May 2007 theme was choking and has comprehensive information about swallowing assessments and is important in considering aspiration pneumonia.

b. RAC-Coronial Communiqué Volume 3 Issue 4 September 2008 theme was Diabetes mellitus. This is an important condition to manage well so as to reduce the risk of infection as diabetes mellitus lowers a person's immunity.

c. RAC-Coronial Communiqué Volume 2 Issue 1 March 2007 theme was falls. This is an important condition to manage to reduce the risk of infection from immobility or fractured ribs.

All cases that are discussed in the Residential Aged Care Coronial Communiqué are public documents. A document becomes public once the coronial investigation process has been completed and the case is closed. We have made every attempt to ensure that individual clinicians and hospitals are de-identified. However, if you would like to examine the case in greater detail, we have also provided the coronial case number.