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CONTENTS

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Next Edition: May 2009

EDITORIAL

Welcome to the first issue of the Coronial Communiqué for 2009. We are looking to the year ahead with great anticipation as the focus on preventable deaths achieves greater importance following the recent legislative changes in Victoria to the Coroners Bill 2008.

The purposes of the Act are to require the reporting of particular deaths; to have coroners investigate deaths and fires in specified circumstances, and to contribute to the reduction of the number of preventable deaths and fires through the findings and recommendations of the investigation.
Under the changes, the Coroner's Court will continue its role as an inquisitorial court and the Coroner will be able to make recommendations to any person or organisation on how to prevent deaths occurring rather than being restricted to Ministers and public statutory authorities. These recommendations will be available on the Court's website, and the work of the Coroner will be underpinned by a prevention unit assisting in the development and evaluation of recommendations. This Act comes into operation on the 1st November 2009.

The two cases featured in this issue represent one of the common areas of hospital-related adverse events, that of procedural errors. In both cases, it was not the individual's skills or technical details themselves that warranted scrutiny by the coroners, but the factors that had contributed to the failure to recognise the errors and their subsequent complications. The cases highlight the need for staff to adhere to protocols aimed at preventing and addressing potential system errors. The coroners acknowledged that the hospitals had changed practice by introducing or improving policies for safer healthcare as a result of the deaths, and that policies are only as efficacious as the level of compliance they achieve.

> *"A policy is a temporary creed liable to be changed, but while it holds good it has got to be pursued with apostolic zeal."* Mahatma Gandhi

READERS' FEEDBACK

As we planned our first issue for the New Year, we were very appreciative of all the feedback and encouragement that our readers have taken the time to send to us. It is heartening to see that healthcare workers from many different fields can find interest and relevance in the lessons arising from the cases. Once again, we thank our readers for their subscriptions and we continue to value any comments or insights into any of the information contained in our communiqué.

"From a Paramedic viewpoint it highlights the importance of being ultra-vigilant in our patient assessments and interventions to avoid the tragedy of 'avoidable' deaths."

"In the November issue I learnt that amiodarone potentiates warfarin. As I work in cardiac care this is not only useful but also immensely important."

"It was forwarded to me by our nurse educator, and I was very impressed by the publication, and its potential for use in our (emergency medicine) education program."

"The issues I have read have been very informative and give my staff a lot to think about in their role as a District Nurse in the community."

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: **cls@vifm.org**

REPRODUCTION

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Other publications including the Residential Aged Care Coronial Communiqué and WORKWISE can be found on our website at **http://www.vifm.org/n961.html**

POSITION ON A PROTOCOL

CASE NUMBER: 0745/05
Case Precis Author: Dr Nicola Cunningham FACEM, CLS

CLINICAL SUMMARY

Mr S was a 36 year old male with advanced Huntington's Disease who had a Percutaneous Endoscopic Gastrostomy (PEG) tube inserted to assist with his nutrition. He lived in a residential care facility where staff noted one morning that his PEG tube had become dislodged overnight. He was taken to hospital where the PEG tube was reinserted in the Emergency Department (ED), after which he was discharged home. Later that day however, staff at the facility became concerned that he appeared listless and increasingly quiet. He was transferred to the hospital the following morning for investigation of his symptoms. He was diagnosed with sepsis and commenced on antibiotics, but he continued to deteriorate and despite intubation and resuscitation, had a cardiac arrest and died.

PATHOLOGY

A full autopsy was conducted and cause of death was listed as 1(a) Acute peritonitis complicating insertion of PEG feeding tube for treatment of Huntington's Disease. The pathologist noted that there was 1000 ml of creamy ascites, with the PEG tube passing from the skin along a tract into the peritoneal cavity. In a supplementary report requested by the coroner regarding the likely timing of the tract, the pathologist described a fibrous tract that diverged, with a path leading to the gastric lumen (reflecting the initial correct placement), and a second into the peritoneal cavity (likely created at the time of reinsertion).

INVESTIGATION

The case proceeded to inquest and the issues surrounding the reinsertion of the PEG tube were explored.

An independent expert radiologist's opinion was sought regarding a PEGogram that had been performed on the day of re-presentation. He reported that the tip of the tube was not in the gastric lumen and probably sitting between the anterior abdominal wall and the stomach wall.

The emergency doctor stated that there had been initial difficulty inserting a 16 gauge PEG tube, therefore he had passed a smaller 8 gauge tube in first, then used it as a guide to pass the larger tube over it. The tube's balloon had then been inflated with normal saline after gastric juices were seen to flow outwards from the tube and a test dose of sterile water appeared to flow easily inward. The deceased had remained unperturbed throughout the procedure. The ED had a protocol in place for PEG tube placement checks that included: atraumatic passage of tube, free aspiration of acid contents (litmus red), positive painless insufflation, with any uncertainty to be checked by a consultant and verified by a contrast x-ray. In this instance, the doctor had been reassured by his findings and had therefore not proceeded to pH and X-ray tests to check the tube's position.

CORONER'S COMMENTS AND FINDINGS

The coroner found that Mr S's PEG tube was not correctly sited on his initial presentation to the emergency department, and that the subsequent use of the tube commenced the infective process that culminated in his death.

It was not the incorrect placement of the tube, but the failure to comply with the protocol and to conduct simple placement checks, which warranted adverse comment. The coroner stated, *"Problems may flow from too much prescriptive practice, from over-reliance on adherence to checklists and the like, at the cost of the development of good clinical practice. However, if clinicians are too ready to resolve any uncertainties in their mind as to correct placement of a PEG tube, for example, if they are prepared to back their clinical skills and judgement, without undertaking relatively easy placement checks, then any protocol is to no avail."*

The coroner commended the hospital network for introducing an Integrated PEG Outreach Service following the case, which aimed to provide oversight of PEG tube management, from the initial decision to have one inserted, to ongoing management including re-insertion as required.

KEYWORDS

PEG, peritonitis, protocol, ED, procedure, PEGogram

COMMENTARY ON PEG TUBES

Dr Adam O'Brien FACEM, CLS

The occurrence of percutaneous endoscopic gastrostomies (PEGs)[1] is increasing. When they are unintentionally dislodged, their replacement has a number of risks that mandate clinicians to develop a process for replacing and checking PEGs[1] that maximises patient safety.

A recent review[2] found that most EDs undertook the procedure at the bedside, but only a minority had written guidelines or credentialing procedures. The major risks include haemorrhage, intestinal obstruction and disruption of the tract with insertion of the PEG into the peritoneum, especially if the tract is immature (less than three months since insertion).

A number of confirmatory tests are currently used once the PEG is replaced, including aspiration of gastric contents, pH testing of the aspirate, air insufflation while listening for borborygmi, free flushing of the tube with water, imaging with contrast, and endoscopy.

There is no universally accepted approach to confirm tube position following replacement and there is little evidence in the literature on the diagnostic accuracy or clinical utility of the confirmatory tests. Until there is further evidence however, a cautious approach to ensuring correct position is advocated[3], which should involve use of X-ray with contrast when there is any doubt as to correct position.

1 Sanders DS et al. Percutaneous Endoscopic Gastrostomy: A Prospective Audit of the Impact of Guidelines in Two District General Hospitals in the United Kingdom. The American Journal of Gastroenterology; Vol 97: No 9, 2008

2 http://www.nwmdgp.org.au/pages/after_hours/GPRAC-CIS-07.html

3 Johnston J. PEG tube replacement in the Emergency Department - a survey of current Australian practice and opinion, and review of the literature. Paper for the Australasian College for Emergency Medicine Regulation 4.10. Please contact author for copy of paper at jjkb@iinet.net.au

RECENTLY CLOSED CASES

269/05 A 32 year old male found deceased at home had a history of treatment-resistant schizophrenia and asthma. His condition had been described as being complicated by a propensity to self-medicate with chlorpromazine and benzodiazepines. Post-mortem toxicological analyses showed the presence of morphine, diazepam and chlorpromazine. The coroner on advice from the pathologist found that his death was consistent with an acute asthma attack associated with acute pulmonary oedema, following inhalation of gastric contents in the likely setting of an impaired conscious state.

372/07 A 39 year old female with a history of illicit drug use presented to hospital with abdominal pain. During the course of the investigations she had a generalised seizure and became unconscious, necessitating endotracheal intubation and ventilation. A CT scan of her head revealed a subarachnoid haemorrhage and she died two days later. Cause of death was subarachnoid haemorrhage secondary to a ruptured vertebral artery aneurysm, probably related to chronic methamphetamine use.

792/07 A 26 year old female underwent an elective ankle arthroscopy and reconstruction. She was administered clexane for venous thromboembolism prophylaxis and was discharged home the next day with crutches. Nineteen days following the surgery she collapsed at home and died. Cause of death at autopsy was pulmonary embolus.

3403/07 A 28 year old male had a past medical history of brain injury following a self-inflicted gunshot wound to the head. He presented to a rural hospital stating that he had suffered a knock to the head earlier that day and had developed a headache and aversion to light. He was afebrile and had no neck stiffness, but had tenderness in the frontal region with an overlying scabbed wound where he had struck his head. He was transferred to the nearest tertiary hospital to facilitate CT scanning to exclude an intracerebral haemorrhage. En-route he had a seizure and died shortly after arrival. Cause of death following autopsy was purulent meningitis, purulent frontal sinusitis and defect to the floor of the anterior cranial fossa following previous gunshot wound.

3685/07 A 62 year old female developed chest pain following a meal. She presented to hospital where she became short of breath and vomited blood. An urgent CT scan demonstrated a ruptured oesophagus. She was taken to theatre where two gastric ulcers were identified, one of which ran between the stomach and oesophagus where the perforation had occurred. Post-operatively she developed mediastinitis and septic shock and died.

4534/07 A 30 year old male was involved in a single vehicle collision. At the time, he left the scene, returned home and told his mother he had been in a "go-carting incident". In the week that followed, he complained of a cough and vomiting. A locum doctor prescribed amoxicillin for a diagnosis of infective exacerbation of bronchitis. The locum was called again to attend the house five days later and diagnosed traumatic chest pain when the deceased stated he had "suffered a fall". The following day he called an ambulance for "rib pain". On arrival at hospital he was hypotensive and tachycardic. CT scans showed pneumonia with possible pulmonary contusions, and a splenic laceration. He rapidly deteriorated and died several hours later.

WHICH END IS WHICH?

CASE NUMBER: 2043/04
Case Precis Author: Carmel Young RN, CLS

CLINICAL SUMMARY

Mr W was a 65 year old male with a past medical history of significant cardiac disease and transitional cell carcinoma to the bladder which had been treated with the formation of an ileal conduit. There was recurrence of the carcinoma in the pelvis for which he received a palliative course of chemoradiation, but he continued to suffer from ongoing faecal incontinence and symptoms of a recto-urethral fistula.

He was admitted to a regional hospital and underwent a laparoscopic end-colostomy to alleviate his symptoms.

Post-operatively he had episodes of hypotension that were managed with fluid boluses and blood transfusions. He developed vomiting, abdominal pain and increasing abdominal distension. There was no output from the colostomy and it was thought that he had a paralytic ileus.

When he became short of breath eight days post-operatively he was treated for acute pulmonary oedema. An abdominal X-ray performed on day nine revealed colonic distension but no free intra-peritoneal gas. An abdominal CT confirmed these findings two days later.

His stoma remained non-functioning. He deteriorated further with "severe abdominal pain and vomiting," and a colonoscopy was planned for the following day to exclude the possibility of an obstructing kink. That evening however, he had an X-ray that indicated free gas under the diaphragm. He was diagnosed with generalised peritonitis and taken to theatre for emergency surgery. At the operation, it was discovered that the incorrect end of his bowel was sewn over in the original surgery. That is, the colostomy drained the distal colon and rectum and the right side of the transverse colon had been closed effectively sealing the distal outlet of the gastrointestinal tract, and this caused the faecal peritonitis. He was admitted to ICU but died later that day.

PATHOLOGY

An autopsy found that the cause of death was peritonitis and colonic perforation.

INVESTIGATION

The focus of the coroner's investigation was to determine if the surgery was appropriate, if the staff were experienced, and whether any issues surrounding the post-operative management may have led to Mr W's death.

The coroner held an inquest where it was accepted that the death was caused and/or contributed to by a technical error in the formation of the stoma.

The deceased's wife provided a submission that she had watched him get worse and that she had not been listened to by the treating team.

An expert opinion was sought from the college of surgeons. The expert opined that the surgery was necessary and that the laparoscopic approach was appropriate. He did not consider that the problem would have been caused by a lack of vision but rather that adhesions elsewhere in the abdominal cavity had twisted the colon 180 degrees. Regarding the post-operative management, the expert noted that at some point it is appropriate to prove an ileus is present rather than an obstruction, and by day ten post-operatively, "*warning lights would be flashing.*" A relatively non-invasive test that did not require an anaesthetic, which could have been performed, was a radiological study involving contrast down his colostomy. It would have probably appeared at his anus and revealed an obstruction.

CORONER'S COMMENTS AND FINDINGS

The coroner found that the decision to operate was reasonable. Nevertheless, there were shortcomings in his post-operative management. The doctors were slow to take action and should have commenced investigating the non-functioning stoma well within seven days post-operatively.

"Had the treating doctors communicated with Mrs W earlier they may have obtained a better picture of Mr W's clinical deterioration."

The doctors missed the diagnosis and should not have continued with their theory of a paralytic ileus for why the stoma was not working. Even though they may have been aware of some situations where a paralytic ileus can persist for 10 days and resolve without intervention, further investigations should have been performed earlier.

The coroner concluded, "*although the surgery performed upon Mr W was palliative in nature, it is apparent that the failure of the doctors to institute appropriate investigations more swiftly in the post-operative period has certainly hastened his demise.*"

The hospital had since developed policies and procedures that included:

- A colonoscopy would be performed where there was no output over 5-7 days; and
- The stomal therapist circulated a document "which authorised the therapist to challenge or query where there was an unsatisfactory output."

KEYWORDS

Stoma, operation, peritonitis, investigation, communication, expert

All cases that are discussed in the 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.