



Potentially preventable clinical events - lessons from an audit of surgical mortality

Annual Conference of the NZ Perioperative Mortality Review Committee





Collaborating Hospitals Audit of Surgical Mortality ...CHASM

- **Confidential peer review** of deaths which occur under the care of a surgeon
- Facilitate **reflective learning** for surgeons
- Identify **potentially preventable deficiencies** of care
- Provide data to inform **quality and safety** initiatives



Collaborating Hospitals Audit of Surgical Mortality ...CHASM

Peer review of 8,872 deaths

(total of 17,223)

January 2008 - May 2016

Potential deficiency of care

1914 - 21.7 %





EMERGING THEMES

Aspiration

Anticoagulants

Communication , handover , ASU & clinical supervision

Decision to operate ..either delay or futile

Deteriorating patient


“Swiss cheese”

Major surgery ..pancreas , oesophagus , bladder

Urosepsis / tracheostomy / “talk & die” / necrotising fasciitis



CLINICAL SIGNIFICANCE OF ASPIRATION

- Cardiac arrest
 - Acute pneumonitis may progress to adult respiratory distress syndrome (ARDS) with death in 24 – 48 hours
 - Acute bacterial pneumonia
 - A recurring , low grade event becoming the “tipping point”
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ASPIRATION

849 audited patients where aspiration was mentioned as a factor in their death

2/3 main factor

1/3 contributing

80 % emergency

20% elective





ASPIRATION

... in 3 main clinical scenarios

- Elective surgery - 20 %
- General surgery
 - emergency admissions with acute abdomen
 - during postoperative recovery
- Orthopaedics - fracture neck of femur



Scenario's

- Resection carcinoma of rectum – aspirates on day 10
“a surgeon’s nightmare preventable by use of NG tube”
- Total thyroidectomy - aspirates in the recovery room
- Total gastrectomy for cancer - aspirates on day 10
- Closure of ileostomy .. vomits on day 4
- During PEG / NG tube feeding



Management of acute abdomen

In radiology department undergoing CT scan

Conservative management ...no NG tube
small bowel obstruction , acute cholecystitis

Aspiration with NG tube in place

Misplaced NG tube

Small bowel obstruction - vomited on way to the OT





POSTOPERATIVE ASPIRATION

Age 28 following surgery for an assault

Post laparotomy , NG feeding , reduced GCS,
communication age 81

Hartmann's...acute diverticulitis age 49

Total colectomy and IRA





LESSONS'S LEARNT

- Frequently preventable but can be unpredictable
- But there may be warning
symptoms ...hiccups , nausea , small episodes of vomiting
physical signs ...abdominal distension
- Patients at risk
- Not thinking of possibility of aspiration
- Failure to use a nasogastric tube



COMMUNICATION

84 deaths

Emergency admission 62

Elective 20

Variety of scenarios

between surgeons

other treating clinicians e.g ICU

during transfer

failure to notify consultant

during holidays ...handover



COMMUNICATION

Unwell following closure of ileostomy - message on mobile

Lacerated leg - dyspnoea - not conveyed

Colonoscopy perforation - indication - clinicians

Consultant handover - “acute pancreatitis”

Pericolic abscess - in presence of acute myeloid leukaemia





LESSONS'S LEARNT

Clear discussion regarding use of IT

Encouraging multidisciplinary rounds

Empowering & supporting junior staff

Triggers that mandate escalation

Effective handover

Relationships ... ICU/physicians & surgeons





THE DETERIORATING PATIENT

The patient not following the normal trajectory

Anastomotic dehiscence

Following laparoscopy

Development of confusion / delirium

Is it cellulitis ?





THE DETERIORATING PATIENT

Laparoscopic colectomy

Laparoscopic ventral hernia repair

Both unwell from Day 1 postoperatively
febrile , confusion , ileus

Dx ? respiratory , ? injury to ureter

CT scan “large fluid collections”

Day 5 & 8 : aspiration of fluid ..bile stained

Laparotomy : SI perforation /anastamotic leak



THE DETERIORATING PATIENT

Did not consider the possibilities

Ignored/misinterpreted abnormal vital signs

Communication

Supervision





ANTICOAGULATION

41 patients

22 postoperative bleeding

19 under / lack of anticoagulants
- CVA or pulmonary embolus



SCENARIO

- Age 64 elective hip replacement
- Recent onset AF
- Cardiology consult ...no anticoag. Monitor in HDU
- Routine surgery
- 6 hours post-op ..major CVA
- Death 3 days later



SCENARIO

Age 73 Cellulitis leg

Multiple comorbidities. Aspirin & clopidogrel

Leg required debridement & VAC dressing

Day 9 ischaemic finger..radial artery thrombosis

IV heparin commenced (on Sunday)

Initial PTTK subtherapeutic..dose increased

No follow up PTTK

Cerebral haemorrhage on Day 11





CLINICAL ISSUES

Whose responsibility ?

What is the context of the case ?

Assess the risk CHADS2 score / recent VTE

Clinical supervision

Documentation

Monitoring





CLINICAL ISSUES

Postoperative when do you recommence ?

Surgery in patients with cardiac stents

Bridging anticoagulation

Correct dose & pharmacology

Tailoring dose for the individual patient





FUTILE SURGERY

Consider the option of not operating

Fracture neck of femur

Locally advanced carcinoma colon & carotid artery stenosis

Small bowel obstruction due to disseminated carcinoma

Carcinoma of the lung with pleural effusion

Carcinoma breast with cerebral metastases





FUTILE SURGERY

These cases need to be seen in a broader context

Communication

Multidisciplinary and coordinated

Encourage community / personal discussions


End of life plan

Respect patient wishes





FUTURE DIRECTIONS

- The “outlier”
 - What to do with the data ?
 - Does this process make a difference ?
 - Death audits and M & M reviews.
 - Community expectations
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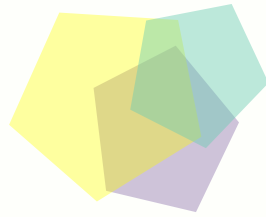
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Thank you

