Door to Knife Time

The Timeline of Patients Presenting with Acute Type A Aortic Dissection

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Acute Type A Dissection
This study aims to:

1. Establish the time-course between presentation and surgery

2. Identify any *modifiable* delays
Unmodifiable delays!

Availability of out of hours CT/ echo is also variable
Methods

• Single centre

• Retrospective case note review [multi-institution]

• Cases of type A dissection 2006-2011 identified by electronic records
EVENTS RECORDED

- Presentation to medical services
- Review by doctor
- CT scan
- Transfer to Papworth requested
- Ambulance arrives at DGH
- Ambulance leaves DGH
- Ambulance arrives at Papworth
- Anaesthetic start time
- Knife to skin
Study cohort

50 patients
- Mean age 62 years
- M:F 31:19
- Mean EuroSCORE 10.5
- Mean Logistic EuroSCORE 28.15
Average intervals in the timeline

Prominent reversible delays are in diagnosis and commencing the operation

Papworth Hospital NHS Foundation Trust
LONGEST DELAY REMAINS IN DIAGNOSIS – WHY?

Presenting symptom

- chest pain: 62%
- malperfusion: 6%
- atypical symptoms: 24%
- not available: 8%

11/50 (22%) patients were diagnosed and treated for ACS
14% of our patients had a dissection flap seen on echo prior to CT scan – should we change the protocol?

**Guidelines encourage ACS to be the default diagnosis, with CT only recommended if ECG/12 hr cardiac enzymes negative for MI**

- Consider following 'Unstable angina and NSTEMI’ if these are very likely. Continue to monitor (see box 2)
  - If diagnosis of ACS is in doubt:
    - Continue monitoring
    - Consider taking serial resting 12-lead ECGs, reviewing previous resting 12-lead ECGs and recording additional ECG leads. Use clinical judgement to decide how often this should be done. Note results may not be conclusive.
    - Repeat troponin measurement 10-12 hours after onset of chest pain
  - Consider other acute conditions, firstly life-threatening conditions
  - If diagnostic criteria met, follow 'Unstable angina and NSTEMI’ or local protocols for STEMI
Recommendations for facilitating early surgery

• Education of junior A&E staff

• Streamlining theatre pathways in receiving centre
ACC Aortic Dissection Evaluation Pathway 2011

High risk conditions

High risk pain

Expedited imaging

High risk exam
Assess risk factors for dissection during initial assessment.
In the presence of risks factors/ malperfusion/ new AR consider early CT or TTE PRIOR TO ACS treatment.
Streamlining the pathway to theatre

- 6h delay between patient arrival and theatre start time

- Suggestions
  - Stop an elective list once the patient is referred
  - Admit to ITU for anaesthetic preparation while awaiting theatre space
Conclusions

- This study is limited by its retrospective design and missing data points

**BUT**

- **Service may still be improved to expedite surgery for Type A dissection thereby improving outcome**
  
  - Dissection should be considered early in the ‘chest pain pathway’
  - Expeditious surgery should be facilitated by instituting locally appropriate policies