



JAG ISREE: Improving Safety and Reducing Error in Endoscopy Learning from patient safety incidents: case of the month

August 2019: a mugful of coffee ground vomit

About this case study

Each month JAG publishes a case of the month highlighting a real life clinical scenario which has impacted patient safety. Case studies are contributed by JAG leads and endoscopy services across the UK and are designed to provide a opportunity for discussion and to share learning. This month's case highlights the importance of non-technical skills in the context of emergency endoscopy, and took place in a large NHS service.

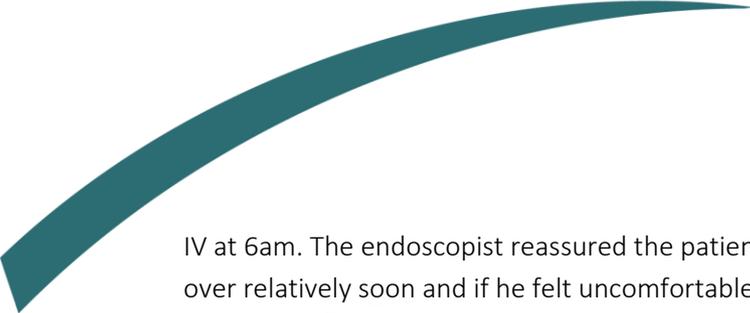
Case synopsis

Mr X, a 79-year-old man, was admitted to A&E at 10pm with a 6-hour history of coffee ground vomiting. During this time, he had vomited 3 times, with the largest vomitus described as a 'mugful'. He had a background of ischaemic heart disease, type 2 diabetes mellitus, chronic kidney disease, osteoarthritis of the knees and asthma. He was taking aspirin, bisoprolol, isosorbide mononitrate, ramipril, metformin and salbutamol. He was a smoker and BMI was 35. He was independent, mobile with a stick and living with his wife in a bungalow.

The A&E team promptly performed an ABCDE assessment and identified the patient was haemodynamically stable and alert. Blood tests revealed Hb 92 (last Hb 110), acute kidney injury and normal clotting.

Mr X's case was discussed with the on-call GI bleed SpR (non-resident) who advised for ongoing medical management and admission to hospital. An inpatient OGD would be arranged early in the next morning in the endoscopy department if the patient remained haemodynamically stable. The team were advised to contact again overnight if there was any change in his observations or status. He was kept nil by mouth.

The patient was brought down to endoscopy at 8am the next morning. He had 1 further episode of vomiting overnight but was stable (HR 85 BP 120/70 RR 20 Sats 97% OA). The GI bleed SpR (endoscopist) reviewed the patient and took their consent. The patient was nervous and commented that he had felt sick all evening. He had received 4mg ondansetron



IV at 6am. The endoscopist reassured the patient and advised that the procedure would be over relatively soon and if he felt uncomfortable during the procedure, they would stop at any time.

In the endoscopy room, the patient received 2L oxygen via nasal cannulae, Xylocaine spray, 50mcg fentanyl and 2mg midazolam. Intubation was unremarkable. As the scope was passed into the stomach, the endoscopist noted a large pool of dark gastric content but no signs of fresh blood. The patient promptly retched and vomited a large volume of content.

The patient was suctioned throughout and oxygen saturations were 95%. The patient appeared to be agitated but the endoscopist was happy to proceed. They immediately identified an antral gastric ulcer (Forrest IIa) and began preparing for adrenaline injection, asking the assisting nurse to prepare an injection catheter. The nurse noted oxygen saturations dropped to 93% during this period, increased oxygen to 3L/min and verbally informed the endoscopist before gathering the necessary equipment.

As the endoscopist began to pass the injection catheter down, the patient again retched and the nurse noted oxygen saturations dropping to 92% and again informed endoscopist. The endoscopist acknowledged this but was now concentrating on injecting the ulcer and advised oxygen to be increased to 4L/min whilst they attempted to inject.

Unfortunately, the patient continued to retch with another vomitus and oxygen saturations dropped to 90%. It was at this point the endoscopist had noticed the monitor beeping and removed the scope promptly. The patient was placed on his side with ongoing suctioning.

Despite these manoeuvres, the patient continued to deteriorate with increasing respiratory rate, tachycardia and hypoxia. A medical emergency call was placed and the medical team promptly arrived to assess and treat the patient.

History and examination were compatible with aspiration. The patient continued to deteriorate and was subsequently transferred to the high dependency unit (HDU), requiring a short period of non-invasive ventilation. He improved over the next few days and was stepped down to the ward 2 days after his initial OGD. He was placed on an IV PPI infusion during this time and no further bleeding was noted in HDU.



This case was discussed at the local governance meeting with a wide group of endoscopy users present. Minutes were taken and specific learning outcomes were documented. Recurrent aspiration during the procedure was noted with a few causative factors identified (see below). Several action points were made as a result of the case review:

- a review of the appropriateness of emergency cases performed in endoscopy
- a review of local training initiatives to educate endoscopy staff in emergency scenarios, specifically focussing on non-technical skills

JAG analysis

What are the learning points you took away from this case?

How could things have been improved?

The following patient safety incidents were identified by JAG. They have been categorised for severity (mild, moderate and severe) based on the actual or potential impact to the patient and adherence to clinical guidance, as well as by theme:

1. Oxygen monitoring
2. Distractors and time management
3. Non-technical skills and training
4. Documentation and reporting errors
5. Technical skills and equipment
6. Sedation intravenous access and monitoring
7. Drug errors
8. Consent
9. Histology and sampling errors
10. Administrative error

| Patient safety incident | Theme | Severity |
|--|---------|----------|
| Team preparation and planning not apparent | 3 | Moderate |
| Endoscopist task focussed by technical aspects of case, distracted when receiving information verbally | 2, 3, 6 | Moderate |
| Communication between team members not always clear eg information may not have been received by endoscopist | 3 | Moderate |
| Not every team member was fully aware of deteriorating observations | 1, 6 | Moderate |
| Clinical misjudgement of deteriorating patient | 3 | Moderate |

Did you identify any other patient safety incidents?



Learning



Patient selection & planning

Always consider whether patients are appropriate to have procedures undertaken in the endoscopy unit. This is often a multidisciplinary team discussion^[2] and in this case, discussion with a senior may have been advised.

There are several factors that may mean patients are unsuitable for an OGD in endoscopy rather than in theatre including poor ASA physical status & multiple medical co-morbidities; potential airway compromise eg foreign body, food bolus, haematemesis; duration of procedure (prolonged procedures may require deeper levels of sedation with more monitoring equipment); and technical aspects of procedure (how interventions are tolerated by the patient and whether they should be fully sedated to facilitate this).

Procedures deemed high-risk should be undertaken in a controlled environment with airway protection eg theatres with anaesthetic cover.

Loss of situational awareness



In this case, the endoscopist was task-focussed and appeared to lose situational awareness; so called 'tunnel vision'. This is not uncommon in stressful emergency situations such as this. One consequence was the loss of a shared understanding, particularly around the deteriorating observations. This meant a delay in the recognition of deterioration before the correct clinical actions were undertaken. Remembering to re-evaluate all aspects of care including patient status and monitoring should remain at the forefront of all team members, including the endoscopist. Training strategies including simulation may be useful in addressing this^[3,4].



Communication in emergency situations

Communication between team members is an important skill in all clinical encounters but becomes ever more paramount in an emergency. In this scenario, the nursing team were aware of the deteriorating observations and vocalised this to the endoscopist; however, it is unclear if the endoscopist received this information. Cues such as direct and repetitive prompts may have helped the endoscopist focus on the 'bigger picture' rather than just the technical task (injecting ulcer). Another useful method is that of 'closed loop communication'. Here the message sender (nurse) ensures the receiver (endoscopist) acknowledges the message through asking for confirmation and repetition if necessary^[5].



Review of outcomes

Discussion of patient safety incidents in a governance meeting enables shared learning amongst colleagues. This provides a safe and constructive space for feedback and reflection on how things can be improved, specific to each endoscopy service^[6]. In this case, this review was beneficial to the endoscopy service as a whole in improving the quality and safety of their service.



Do you have a case study from your service which could be featured in JAG's case of the month?

Please contact askjag@rcplondon.ac.uk for more information.

References

1. Matharoo, M., et al., A prospective study of patient safety incidents in gastrointestinal endoscopy. *Endoscopy international open*, 2017. 5(1): p. E83-E89.
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This case is based on several documented adverse events and the narrative has been adapted to enhance educational benefit. No identifiable information has been provided.

| Document control | |
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