Scoping our practice

The 2004 Report of the National Confidential Enquiry into Patient Outcome and Death

NCEPOD

FOREWORD 'Scoping our practice'

NCEPOD operates under the umbrella of the National Institute of Clinical Excellence (NICE) as an independent confidential enquiry, whose main aim is to improve the quality and safety of patient care. Evidence is drawn from all sections of hospital activity in England, Wales, Northern Ireland, Guernsey, the Isle of Man and the Defence Sector, both NHS and private, and we are very grateful to all those who take part, as advisors, local reporters or recipients of individual case reporting questionnaires. I would also like to express my sincere thanks to our clinical co-ordinators and all the permanent staff of NCEPOD for the enormous amount of work and enthusiasm which they have put into the production of this report and without whom we could not hope to create such detailed analysis of, and comment upon, clinically related hospital activity.

'Scoping our practice' represents a significant new direction for the work of NCEPOD in that it is the first report under our expanded remit to include medical cases. Based on the work of all gastrointestinal (GI) endoscopists, both medical and surgical, it emphasises our new title of the National Confidential Enquiry into Patient Outcome and Death. We have been keen to expand the work of the enquiry for some years and the physicians on our steering committee have provided an exciting new and critical angle on the design and recommendations of our reports. It is also the first NCEPOD report to be distributed on CD Rom instead of paper, which has allowed major advances in the presentation of our data. We are pleased that 93% of hospitals participated, although the questionnaire return rate of 66% is similar to that of anaesthetists and surgeons 10 years ago, when participation rates were 70%. This represents a serious challenge for NCEPOD in the future, if we are to produce credible results and evidence-based recommendations.

Interventional gastrointestinal endoscopy is an important area of work in all hospitals. The cases covered by this report (1,818) inpatient deaths within 30 days of the procedure) represent only a small proportion of the total endoscopies performed in a year in England, Wales and Northern Ireland (136,000) and it is important to stress that most GI therapeutic endoscopies are uneventful. Because it is frequently a multidisciplinary service, the facilities available have often grown up in a piecemeal fashion and while there is a wide range of established practices, training and protocols, there are also some areas of very individual practice which take little account of the major advances in monitoring and sedation techniques which are widely available. Some endoscopy units did not have the necessary monitoring equipment available in all rooms and where it was available, appropriate monitoring was not used in many situations when our advisors judged it was required on account of the patient's condition. In 42% of cases no contemporaneous monitoring record was available in the notes and 14% of patients were judged by our advisors to have received an overdose of sedation. GI endoscopy services are provided by a wide range of specialties, including general medicine, general surgery, radiology, specialist medicine and specialist GI, ENT and thoracic surgery. In addition nurse practitioners are becoming increasingly involved in diagnostic endoscopy and, as is shown in this report, in interventional treatment too. As a result it is vitally important that hospitals have clearly defined protocols for optimising the

treatment of these patients and for ensuring satisfactory monitoring and safe sedation techniques.

Many endoscopy patients are severely ill, elderly and often poorly prepared for an interventional procedure. It was worrying that our advisors considered that 19% of the percutaneous endoscopic gastrostomy (PEG) procedures were futile or not indicated at all. Very few endoscopy patients have the benefit of pre-procedure optimisation or indeed time on a high dependency unit, their care taking place on a general ward as one of a number of seriously ill patients. Many have received large volume blood transfusions, with all the attendant problems. Anaesthetists are rarely involved in the care of these patients unless it is in an intensive care or high dependency unit setting in which the patient's condition can often be considerably improved prior to intervention. In most hospitals there is a clear working pattern for routine endoscopy lists but very poor provision for out of hours care. This report demonstrates that less than a third of hospitals have a dedicated out of hours emergency endoscopy service and that a third of patients are actually treated at a less than optimal time for a variety of reasons.

Although GI endoscopy as a specialty has produced good guidelines on training, the report highlights the need for national guidelines to assure continuing competence in endoscopy, particularly for those practitioners who only perform a small number of procedures each year. While the ability to perform endoscopy is an integral part of the training of many medical and surgical specialists, there is much more to the procedure than simply an ability to pass an endoscope and to make a diagnosis or instigate treatment. If we are to significantly improve the outcome of patients undergoing therapeutic endoscopy this report gives us many clear indications and recommendations about how this might be achieved. There is a major opportunity for multi disciplinary working and the setting up of clear guidelines for the management, optimisation, treatment and sedation of what are often seriously ill, elderly patients. Above all we should aim to provide timely and optimal care in the best interests of what is a significant proportion of sick patients in every hospital.

Dr. Peter Simpson
Chairman

INTRODUCTION

The original gastrointestinal endoscopes were hollow reeds or bamboo canes that were illuminated by candles. These developments have been attributed to both the ancient Greeks and the Egyptians. However, the precise origin of endoscopy remains in doubt although Hippocrates was responsible for the first proctoscopy recorded in 370 BC.

The subsequent development was slow. The next major advancement was the rigid sigmoidoscope in 1795 by Bozzini, followed by the rigid oesophagoscope in 1868 by Kussaiaul. These instruments were very primitive in comparison with those in use today, and only allowed a limited examination. One of the major limitations was a suitable light source but this was overcome, in part, by Edison in 1890 who was able to make bulbs small enough to use inside the endoscope. This was followed by the discovery that glass fibres could transmit light by Baird in 1928.

The other limitation was scope rigidity. A 'semi-flexible' gastroscope was developed in 1932, followed in 1950 by the 'gastrocamera'. This was superseded in 1957 by the flexible gastroscope developed by Hirchowitz, and in 1963 the flexible sigmoidoscope developed by Overholt, both using optical fibres to connect the distal image lens to the proximal viewing lens that magnified the image for the endoscopist.

Diagnostic endoscopy was now a viable, valuable, clinical procedure. The only omission was full colonoscopy, which finally occurred in 1971 and was performed by Deyhle. Crucial, rapid, developments included channels through the length of the scope that would allow air injection to distend the lumen, suction (to remove secretions), a water jet to clean the image lens, and mucosal biopsies. The potential of the biopsy channel was exploited rapidly, and numerous therapeutic procedures followed – including the first snare polpectomy by Niwa in 1970, and the first sphincterotomy for common bile duct stones in 1974.

The construction of the endoscope ensured that only the endoscopist saw mucosal images, and trainees could only view the image by adding a teaching aid to the endoscope. However, this resulted in a poor view of the mucosa for both teacher and trainee, and significantly increased the weight of the endoscope.

The development of video endoscopy by Welch-Allyn in 1983 produced high resolution images that ensured the territory previously the domain of the endoscopist could be seen by trainees, assistants, and observers.

The aim of this study is to improve the quality of therapeutic gastrointestinal endoscopy services in the future by critically appraising information from the notes of patients who have died during or following endoscopy. It is hoped that the intended benefits will include:

- fewer inappropriate procedures
- lower morbidity and mortality
- improved training
- recognition of poor performance
- reduced litigation
- better data collection

Therapeutic gastrointestinal (GI) endoscopy is a common procedure. From Hospital Episode Statistics (HES) it has been established that in NHS hospitals in England, Wales and Northern Ireland in 2002/03 approximately 136,000 such procedures were performed. Deaths reported following these procedures represented 3% of cases and it is therefore important that data in this report are taken in context. As a guide the mortality data for the four different GI therapeutic endoscopies covered in this report is summarised in Table A (below). These figures have been calculated using data obtained from Hospital Episode Statistics (HES), which includes NHS data from Trusts in England only. However, this is representative of the majority (94%) of the data obtained from England, Wales and Northern Ireland.

Anecdotally, it is believed that there is a significant amount of under-reporting of procedures, as many take place in an outpatient setting and these data are not recorded as part of the HES dataset; hence mortality may be overestimated. In addition, deaths following discharge from hospital are not captured by HES and this would tend to lead to an underestimate of mortality. These factors are both likely to affect the quoted mortality rates.

Table A. Mortality data for therapeutic endoscopies – 2002/03

Procedure type	Number of deaths	Total number of procedures	Mortality %
PEG	986	16,648	*6*
ERCP	381	23,606	*2*
Upper GI	2,200	47,931	*5*
Lower GI	102	40,378	*<1*
Total	**3,669**	**128,563**	**3**

Legend

***PEG** = Percutaneous endoscopic gastrostomy*

***ERCP** = Endoscopic retrograde cholangiopancreatography*

METHODS

The data presented in this report relate to three datasets:

1. All deaths occurring in hospital within 30 days of a gastrointestinal (GI) therapeutic endoscopy between 1 April 2002 and 31 March 2003
2. Upper GI dilations and tubal prosthesis insertions performed in adults (16 years of age) between 1 January and 31 March 2003, regardless of outcome
3. Data collected from hospitals on organisational aspects of endoscopy services

DATA COLLECTION

1. GI therapeutic endoscopies

- All deaths occurring in hospital between 1 April 2002 and 31 March 2003 were reported to NCEPOD by designated local reporters for hospitals in England, Wales, Northern Ireland, Guernsey, the Isle of Man, the Defence Secondary Care Agency and hospitals in the independent sector
- Sample cases were identified from these data by Office of Population Censuses and Surveys (OPCS) codes, which were submitted for the last six procedures before death. Cases were included if death occurred within 30 days of a therapeutic endoscopy
- General practitioners who were identified as performing therapeutic endoscopies, were requested to notify NCEPOD in the event of death within 30 days of a procedure
- Data were collected retrospectively via a questionnaire, which requested information on pre-procedural investigations, the procedure, sedation and monitoring, the clinicians involved in the procedure, and training and audit
- Copies of extracts of the casenotes were also requested

2. Upper GI dilation and tubal prosthesis insertion

- A second dataset was collected prospectively on all patients, 16 years of age, undergoing an upper GI dilation or tubal prosthesis insertion between 1 January and 31 March 2003, regardless of outcome
- NCEPOD local reporters were asked to provide a list of patients who had had one of the eight procedures (identified by OPCS codes) of interest
- Questionnaires, which consisted of two sides of an A4 sheet, were sent prospectively to NCEPOD local reporters for dissemination to the consultant responsible for the procedure. No casenote extracts were requested
- General practitioners who performed upper GI dilations and tubal prosthesis insertions were identified and asked to notify NCEPOD when they performed a procedure included in the study

3. Organisational questionnaire

- An organisational questionnaire requesting information about the endoscopy suite and organisational aspects of the endoscopy service was sent to the NCEPOD local reporter of each hospital for completion
- The questions were based on the guidelines from the Working Party of the BSG Endoscopy Committee 2001

ADVISORY GROUPS AND DATA ANALYSIS

- The data were aggregated and anonymised prior to analysis
- A multidisciplinary group of experts were invited to review the anonymised casenotes and highlight areas of concern
- A separate group of pathology advisors reviewed the autopsy reports and histopathology findings

DATA OVERVIEW

HOSPITAL PARTICIPATION

- A total of 252 hospitals and 11 non-NHS hospitals (hospitals in the independent sector and hospitals in Guernsey and the Isle of Man) submitted data on GI therapeutic endoscopies within 30 days of death
- 20 hospitals, which were expected to participate as at least one sample case had been identified from the death data, failed to return any questionnaires
- 259 hospitals submitted questionnaires on upper GI dilations and tubal prosthesis insertions performed, regardless of outcome
- Although invited to take part in the study, no primary care centres participated in the study as no therapeutic endoscopy-related deaths in primary care were reported during this period

GI therapeutic endoscopies

- 1,818 GI therapeutic endoscopies within 30 days of death are included in this report (Figure A)
- 73% of the cases were over the age of 70 years and the median age of patients undergoing GI therapeutic endoscopies was 78 years
- No reason for non-return was given for 65% of unreturned questionnaires. Where provided, reasons for non-return included:
  - Problems in locating or retrieving patient's notes (8%)
  - Clinician who performed the procedure could not be identified (8%)
  - Clinician refused to complete questionnaire (1%)

Upper GI dilations and tubal prosthesis insertions

- 2,945 upper GI dilations and tubal prosthesis insertions are included in the report

Organisational data

- 194 organisational questionnaires were returned
- This comprised of 174 participating hospitals and a further 20 hospitals, from which no endoscopy related deaths were reported, also submitted an organisational questionnaire

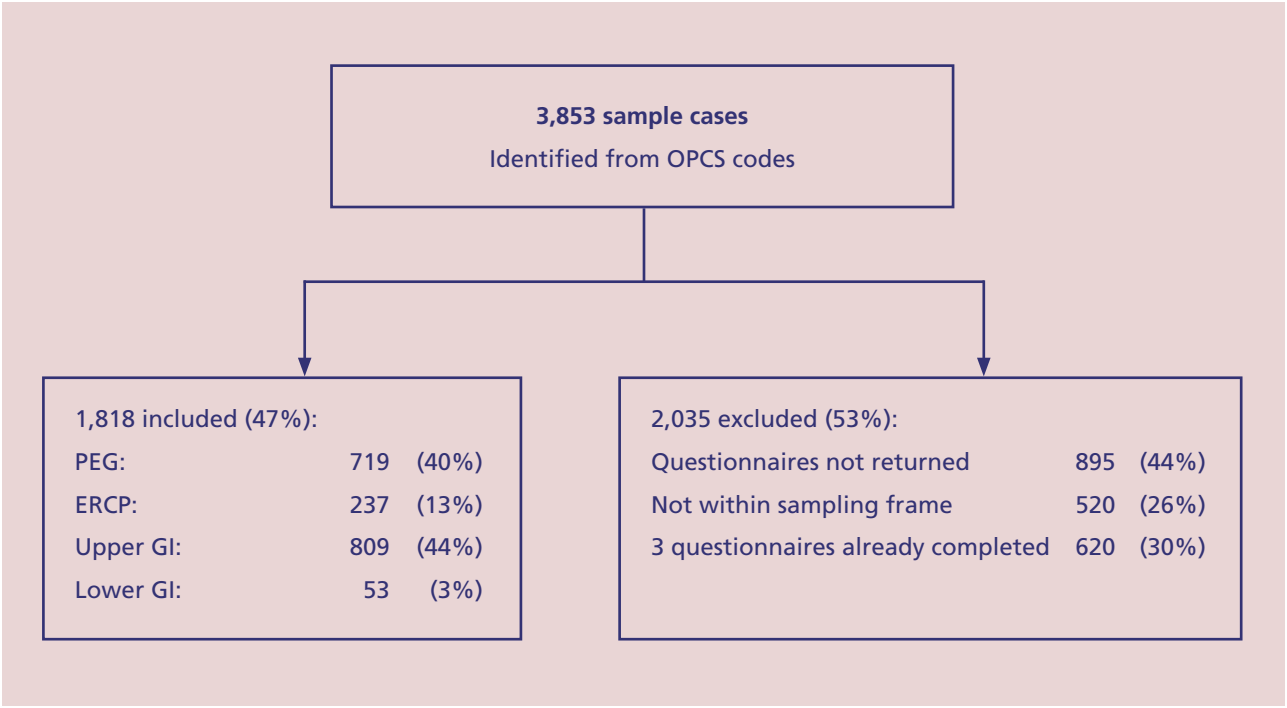

Figure A. *An overview of the data collected on GI therapeutic endoscopies*

ORGANISATIONAL ISSUES

QUESTIONNAIRE RETURN

- 74% of hospitals returned the questionnaire relating to the facilities available for endoscopies

SIZE OF ENDOSCOPY UNIT

- 7% of hospitals (undertaking >2,500 procedures per annum) had only one endoscopy room

OUT OF HOURS ENDOSCOPY

- 62% of hospitals do not operate an out of hours on-call rota for emergency cases
- Where the question was answered 35% of hospitals perform emergency cases within the endoscopy unit which meets the recommendation by the BSG Working Party on the provision of endoscopy services. However, NCEPOD recognises that in some circumstances, for example upper GI bleeds, it might be more appropriate to treat the patient in a fully-equipped operating theatre

NURSE ENDOSCOPISTS

- 76% of hospitals use a nurse endoscopist for at least one session per week
- However, in 17% of hospitals nurses do only one session a week which may mean that they do not maintain their competence

EQUIPMENT

- 5% of hospitals had no oxygen in any endoscopy rooms
- 99% of hospitals had pulse oximetry in every room
- 53% had ECG monitoring in every room
- 37% of units had no ECG monitors in the endoscopy unit

RECOVERY AREAS

- 6% of hospitals had no dedicated recovery area for the endoscopy unit
- 53% of recovery areas did not have pulse oximetry

RESUSCITATION FACILITIES

- 19% had no resuscitation facilities within the endoscopy unit or were able to share with another department

AUDIT/GOVERNANCE MEETINGS

- 42% of hospitals do not hold audit meetings in their endoscopy department

Recommendations

Hospitals should ensure that the appropriate monitoring equipment and resuscitation equipment is available in each of their endoscopy rooms and recovery areas. (*Local hospitals; Primary Care Trusts*)

In order to produce optimal care for what is a large group of severely ill patients, hospitals should consider establishing formal on-call arrangements. (*Local hospitals*)

PATIENT ASSESSMENT

PRE-ENDOSCOPY PATIENT OVERVIEW

- 91% of patients were admitted as an emergency. In 44 cases the admission method was unknown
- In 74% of patients, death was either a definite risk or expected (Table B)
- Co-existing medical conditions were present in all except 5% of patients, with two or more conditions in 76%
- Cerebrovascular disease was the commonest co-existent condition which most likely reflects the age distribution of the patients in this study

CLINICAL INFORMATION

- Data concerning the patient's weight was recorded in only 24% of cases. The patient's weight is helpful when judging the doses of sedation for endoscopic procedures especially in those who are frail and sick
- Advisors found that in many cases the correct investigations had not been carried out before procedures. In 80% of ERCP patients there was no record of a clotting study having been performed

APPROPRIATE PROCEDURE?

- The advisors felt that in 86% of patients, the type of endoscopy was appropriate and it was performed at an appropriate time in 83% of cases
- 9% of the sample cases were considered to be futile and 9% were performed too late and 1.4% too early. Almost all of these cases related to PEGs

Table B. Pre-endoscopy condition

ASA Status	None	Small	Definite	Expected	Sub-total	Not answered	Total
1	2	10	12	4	28	1	29
2	61	47	97	15	220	2	222
3	157	50	355	46	608	11	619
4	72	20	464	97	653	8	661
5	9	0	91	77	177	1	178
Sub-total	**301**	**127**	**1,019**	**239**	**1,686**	**23**	**1,709**
Not answered	15	7	37	8	67	42	109
Total *(%)*	**316 *(18)***	**134 *(8)***	**1,056 *(60)***	**247 *(14)***	**1,753**	**65**	**1,818**

Recommendation

Patients must be assessed by the referring clinician and the endoscopist to justify that the procedure is in the patient's interest. *(Professional specialist associations)*

PATIENT CONSENT

DOCUMENTING CONSENT

- In 32% of cases the clinician could not tell NCEPOD whether written consent had been obtained or not and in 21% of cases they said that no written consent had been gained
- Consent for a medical intervention is a legal requirement and the casenotes should contain a copy of the written consent. If the patient is not able to provide consent the clinical notes should explain the circumstances

SEEKING CONSENT

- Patients have a right to understand their condition and the options available to them, and that includes the details of the treatment and the prognosis if the condition is left untreated
- In 14% of cases advisors thought the procedure inappropriate (Table C)
- 16% of patients were suffering from dementia or acute confusion. Written consent was obtained in 66% of these cases which was of concern to NCEPOD

Table C. Reasons why the procedure was inappropriate (answers may be multiple)

Reason	Total *n = 230*
A different endoscopic procedure was indicated	8
Surgery in the first instance would have been more appropriate	1
No endoscopic procedure was indicated	55
Futile procedure	145
Other	41
Total	**250**

Recommendations

The risks and benefits of therapeutic endoscopy should be explained to the patient, and this should be documented on the consent forms as laid down in the Department of Health guidelines. (*Local hospitals*)

The ability of those with dementia or acute confusion to provide consent should be tested and clearly documented. (*Local hospitals*)

TRAINING AND EDUCATION

ENDOSCOPY PROFICIENCY

- 74% of the procedures in the study were undertaken by experienced consultant endoscopists. However, some of the consultants undertook less than 20 procedures a year which led NCEPOD to question their ability to remain proficient and skilled

APPROPRIATE ENDOSCOPIST

- In 94% of cases the advisors considered that the grade and experience of the endoscopist was appropriate for the type of procedure
- In addition, in 3% of cases a more senior endoscopist was present
- In 49 cases the advisors felt that the operator was inexperienced and in 14 of these the operator gave their specialty as a specialised physician or surgeon. Doctors must be aware that in certain circumstances consultants may not possess the relevant skills and experience

SEDATION TRAINING

- 47% of endoscopists presenting cases to NCEPOD had attended a course on sedation techniques
- Of the 71% of cases where sedation was given, concerns were raised about the appropriateness of their practice in 218 of patients
- There was no statistical difference between those attending a course and those who have not when considering poor practice

SUPERVISION

- Supervision is mandatory for all training endoscopists, irrespective of their grade. The senior endoscopist was not a consultant in 26% of cases
- On most occasions (88%), the supervising endoscopist was somewhere in the hospital during the procedure, but directly supervising the procedure in only 18% of cases
- In 15 cases SpRs in year one or two of their training and SHOs performed therapeutic procedures whilst their supervising consultant was away from the endoscopy unit

CONTINUED PROFESSIONAL DEVELOPMENT

- 78% of procedures were performed in hospitals that held endoscopy audit meetings
- Only 26% of cases had been reviewed at an audit meeting

Recommendations

There should be national guidelines for assuring continuing competency in endoscopy. *(Professional specialist associations)*

All endoscopy units should perform regular audit and all deaths during, or within 30 days of, therapeutic endoscopy should be reviewed. *(Local hospitals; Professional specialist associations)*

All those responsible for the administration of sedation should have received formal training and assessment. *(Local hospitals)*

SEDATION AND MONITORING

SEDATION TECHNIQUES

- In 33% of cases the patient received both intravenous sedation and topical oropharyngeal local anaesthesia and in this sample 43% of patients developed respiratory complications after their endoscopy. It was thought that combined sedation with oropharyngeal LA might have contributed to aspiration pneumonia in some patients
- In 14% of cases NCEPOD advisors considered the sedation was inappropriate mainly due to excessive dosages

Table D. Monitoring during the procedure (answers may be multiple)

Monitors used	Total *n = 1,701*
Pulse oximetry	1,668
ECG	384
Automatic BP	729
Total	**2,781**
Not answered	117

MONITORING

Monitoring for the whole sample is presented in Table D.

NCEPOD advisors considered that:

- In 23% of cases monitoring was deficient
- Pulse oximetry should be used in all patients
- In a further 20% of cases ECG monitoring was indicated
- In a further 14% of cases automatic blood pressure monitoring was indicated
- Supplemental oxygen should be given to all patients undergoing therapeutic endoscopy
- In 3% the endoscopist alone was responsible for monitoring the patient. There should always be a person with defined responsibility for patient observation and record keeping
- A contemporaneous record of monitoring should be kept if a procedure is long and/or complicated
- 8% of patients went from the endoscopy room immediately to the ward. After a therapeutic endoscopy all patients should be nursed in an area that has similar equipment and staff to that recommended for a recovery facility

Recommendations

Sedation and monitoring practices within endoscopy units should be audited and reviewed. *(Local hospitals; Professional specialist associations)*

There should be national guidelines on the frequency and method of the recording of vital signs during the endoscopy. *(NPSA; Professional specialist associations)*

Clear protocols for the administration of sedation should be available and implemented. *(Local hospitals)*

PERCUTANEOUS ENDOSCOPIC GASTROSTOMY (PEG)

PATIENT PROFILE

The sample comprised 719 patients who had undergone a PEG procedure:

- 55% were male
- 82% were aged 70 years or older
- 84% were ASA 3 or poorer
- 98% had neurological disease
- 57% had respiratory disease
- 48% had cardiac disease
- 95% were elective procedures
- 43% died within one week
- 63% had a definite risk of death within 30 days of the procedure
- In 19% NCEPOD advisors considered the procedure futile

INDICATIONS FOR PEG FEEDING

- 59% had acute neurological disease (stroke or trauma) of which 38% died within one week
- 40% had nutritional failure for non-malignant disease
- 18% had dementia
- 13% had a chronic degenerative neurological disease
- 11% had malignant disease
- 7% had motor neurone/other degenerative disease

PERIOPERATIVE FINDINGS

- 40% had a co-existing chest infection, many due to aspiration pneumonia
- 42% had no antibiotic prophylaxis despite evidence for its use
- 6% received no supplemental oxygen during PEG insertion; all patients should receive oxygen
- 30% had topical anaesthesia to the oropharynx combined with sedation; there were concerns about this technique and the risk of aspiration in those with bulbar dysfunction
- 9% required reversal of sedation reflecting sedation overdose
- 76% had a respiratory complication implicated in the cause of death
- 26% had cardiovascular disease implicated in the cause of death

Recommendations

The decision to use a PEG feeding tube requires an in-depth assessment of the potential benefits to the individual. All patients in whom PEG feeding is proposed should be reviewed by a multidisciplinary team. *(NICE)*

There is a need for more comprehensive national guidelines for the use of PEG feeding, including issues of patient selection. *(NICE)*

ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP)

PATIENT PROFILE

The sample comprised 237 patients who had undergone an ERCP procedure:

- 49% were male
- 82% were aged 70 years or older
- 77% were ASA 3 or poorer
- 50% had hepatic disease
- 40% had cardiac disease
- 35% were emergency or urgent procedures
- 69% had a definite or expected risk of death within 30 days
- In 68% NCEPOD advisors considered the procedure futile. These were mainly patients with hepatic metastases and no biliary obstruction

THE PROCEDURE

- 87% of patients received prophylactic antibiotics. This should be approaching 100% in such a high risk group
- In 48% of cases clinicians could not tell us the duration of the procedure
- 8% of cases lasted more than one hour

THE ENDOSCOPIST

- A consultant was the senior endoscopist for 97% of ERCPs
- In 11% of cases the senior endoscopist performed less than 50 ERCPs a year

COMPLICATIONS

- Critical incidents were reported in 9% of cases, although it is suspected that this is under-reporting as other incidents were found in the casenotes that were not indicated in the questionnaire
- The most common complication following ERCP apart from the progress of the medical condition was sepsis, followed by respiratory problems
- Perforation in 2% of cases was directly attributable to the ERCP and haemorrhage in 4%

Recommendation

Patients should be reviewed by the consultant endoscopist before therapeutic ERCP to ensure that the procedure is appropriate and the patient's condition has been optimised. *(Local hospitals)*

OESOPHAGOGASTRODUODENOSCOPY

PATIENT PROFILE

The sample comprised 809 patients who had undergone an OGD procedure:

- 60% were male
- 61% were aged 70 years or older
- 44% had variceal disease
- 35% had a stricture (20% - malignant and 15% - benign)
- 20% had an ulcer

UPPER GI HAEMORRHAGE

- 65% of the sample had suffered an upper GI haemorrhage
- 86% of the procedures were an emergency or urgent
- 85% of cases had an ASA status of 3 or poorer
- 24% had ischaemic heart disease and 15% had an acute chest infection
- 38% had cirrhosis
- 89% had a definite or expected risk of death within 30 days of the procedure

APPROPRIATENESS OF PROCEDURE

- 92% of cases were deemed to have been appropriate
- However in 7% of cases the timing was considered inappropriate
- 21 cases were delayed for organisational reasons, including 9 cases that should have been done as emergencies but were deferred until normal working hours
- In 27% of cases the advisors felt that the quality of care was less than satisfactory

SPECIALITY AND GRADE OF ENDOSCOPIST

- The endoscopists managing patients with upper GI haemorrhage were mostly of an appropriate specialty. However 24% were trainees

SEDATION AND MONITORING

- In 13% of cases the advisors felt that the sedation provided was inappropriate, mostly because of excessive benzodiazepine
- 9% of patients required reversal of their sedation mainly because of sedation overdose

Recommendations

Only experienced endoscopists should treat patients with upper GI haemorrhage. Experience will vary by grade but competence should be assessed by the supervising consultant. *(Local hospitals)*

Optimising the patient's pre-endoscopy condition will reduce both morbidity and mortality. Early involvement of an anaesthetist/intensivist if necessary, will assist this. *(Local hospitals)*

UPPER GASTROINTESTINAL DILATION AND TUBAL PROSTHESIS INSERTION

This was a study of endoscopic upper gastrointestinal (GI) dilation and tubal prosthesis insertion in 2,945 patients regardless of outcome.

PROCEDURES

- 75% flexible endoscopic dilation
- 2% flexible endoscopic dilation followed by tubal prosthesis
- 17% flexible endoscopic insertion of tubal prosthesis
- 5% rigid endoscopic dilation
- <1% rigid endoscopic dilation followed by tubal prosthesis
- <1% endoscopic insertion of tubal prosthesis other than oesophagus

PATIENTS

- 51% of patients were aged 70 years or older
- 45% were male
- 35% were ASA 3 or poorer
- 37% had malignant disease

SENIOR ENDOSCOPIST

- 76% were done by specialised upper GI physicians or surgeons
- 84% of cases were done by a consultant
- 9 cases were done by a SHO, which was considered inappropriate

ANALGESIA AND ANAESTHESIA

- 55% were done under sedation
- 30% were done under topical local anaesthesia
- 14% were done under general anaesthesia

DILATION, PERFORATION AND DEATH

- In 49% a graduated bougie was used
- In 31% a through the endoscope balloon was used
- In 7% a forced pneumatic balloon was used
- 67% of tubal prosthesis were placed using x-ray control, which was considered desirable and mandatory if the endoscope could not be passed into the stomach
- 2.8% suffered a perforation within 48 hours; 4.3% of those with malignant disease and 2% of those with benign disease
- 0.7% (19/2,792) of patients died within 48 hours

Recommendation

A national audit across all specialties of specific techniques and equipment that is used for upper GI dilation and tubal prosthesis insertion is indicated. *(NPSA)*

PATHOLOGY

AUTOPSY RATES

- 9% of the cases in the study had an autopsy. Of these 91% were authorised by a coroner and only 9% were the result of clinician request
- The reporting rate of these deaths to a coroner - 27% - was low compared to the national 38% rate for all deaths. The acceptance rate by the coroner for autopsy - 30% - was low compared with the national rate of 58%. The overall autopsy rate was considerably lower than the 23% average for all deaths in England and Wales. In principle, all deaths that follow medical interventions should be reported to a coroner

AUTOPSY REPORTS

- Of the received autopsy reports (85/144), 71% were graded as satisfactory or better
- 44% had no clinico-pathological summary, or a poor one. This is often regarded as the most useful part of the examination after the actual cause of death
- Only 18% of the autopsy reports mentioned the endoscopy procedure in the cause of death formulation
- Whilst 13% were erroneously structured according to the ONS pattern of formulation (where the main cause of death should be the lowest line used in Part 1), 34% were judged not to reflect the clinico-pathological circumstances around the death
- In particular, ischaemic heart disease was overused as the main cause of death; the disease for which the endoscopic procedure was performed and the complications of the endoscopy were understated as the significant causes of death

AUTOPSY HISTOPATHOLOGY

- In only 37% of evaluable cases was autopsy histology performed. This detracted from the quality of the autopsy in 24% of cases

THE REFORM OF THE CORONER AND DEATH CERTIFICATION SYSTEM

- The proposed reforms of the coroner and death certification systems are intended, inter alia, to improve the quality of the scrutiny of deaths. They should strengthen the review of deaths following medical interventions. NCEPOD commends their implementation

Recommendations

The operative procedure should be included in the cause of death statement. *(Undergraduate and post-graduate deans; ONS)*

Post-procedure deaths (i.e. those occurring during or within 24 hours of anaesthesia or sedation or those where it is known that the procedure is implicated in the death) should be reported to the coroner. *(Local hospitals)*

Pathologists should think more carefully about all the clinical circumstances of a death, to produce an autopsy report more useful for clinical governance and audit. *(Professional specialist associations particularly the Royal College of Pathology)*

NCEPOD supports the reforms of the coronial and death certification systems, which will result in better scrutiny of deaths. *(Home Office)*

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