

METHODS OF DILATION, COMPLICATIONS AND DEATH

Key points

X-ray control was used in 63% of procedures that included a tubal prosthesis insertion.

Oesophageal perforation during or within 48 hours occurred in 2.8% of cases.

Death within 48 hours occurred in 0.7% of cases.

Methods of dilation

Table 72. Methods of dilation of the oesophagus

Method of dilation	Total	(%)
Graduated bougie	1,362	(49)
Forced pneumatic balloon	191	(7)
Through the endoscope balloon	861	(31)
Two methods used	9	(<1)
None	369	(13)
Sub-total	2,792	
Not answered	153	(5)
Total	2,945	

Table 73. X-ray screening for the types of procedure

Type of procedure	Yes	No	Sub-total	Not answered	Total
Flexible endoscopic dilation	569	1,458	2,027	190	2,217
Flexible endoscopic dilation followed by tubal prosthesis	34	19	53	11	64
Flexible endoscopic insertion of tubal prosthesis	320	153	473	23	496
Rigid endoscopic dilation	36	82	118	30	148
Rigid endoscopic dilation followed by tubal prosthesis	5	4	9	0	9
Endoscopic insertion of tubal prosthesis other than oesophagus	6	3	9	2	11
Total	970	1,719	2,686	256	2,945

As seen in Table 73, X-ray screening was used in 29% (603/2,080) of flexible endoscopic dilation procedures and in 63% (354/526) of procedures that included insertion of a tubal prosthesis. BSG guidelines recommend that radiographic screening is helpful when the stricture is tortuous or complex or associated with a large hiatus hernia or diverticulae, and when difficulty is encountered passing the guidewire¹.

NCEPOD advisors consider X-ray control mandatory for dilation using a guidewire if the endoscope cannot be passed into the stomach, i.e. the guidewire cannot be placed under direct vision. X-ray control was thought to be highly desirable for placement of a tubal prosthesis, and that not to use it is unwise. They also believe that X-ray control is not required for routine endoscopic oesophageal dilation if flexible tipped dilators are used.

Complications

During the procedure 1.5% (45/2,945) of patients had one or more of the complications listed on the questionnaire (Table 74).

Table 74. Complications during the procedure (answers may be multiple)	
Complication	Total n = 45
Perforated oesophagus followed by surgery	12
Perforated oesophagus followed by medical treatment	18
Oesophageal haemorrhage	10
Cardio-respiratory arrest	1
Pulmonary aspiration	1
Chest infection	5
Sepsis	2
Total	49

In the 48 hour period after the procedure 2.5% (73/2,945) of patients had one or more of the complications listed on the questionnaire (Table 75).

Table 75. Complications within 48 hours after the procedure (answers may be multiple)	
Complication	Total n = 73
Perforated oesophagus followed by surgery	35
Perforated oesophagus followed by medical treatment	18
Oesophageal haemorrhage	4
Cardio-respiratory arrest	3
Respiratory arrest	3
Pulmonary aspiration	4
Chest infection	6
Sepsis	3
Total	76

The perforation rate for patients with malignant disease was 4.3% (45/1,052) and for benign disease 2% (35/1,784).

Table 76. Dilation methods and oesophageal perforation during or within 48 hours of procedure

Dilation method	Total	Perforation
None	369	15
Graduated bougie	1,362	27
Forced pneumatic balloon	191	8
Through the endoscope balloon	861	21
Two methods used	9	0
Sub-total	2,792	71
Not answered	153	10
Total	2,945	81

In this study, a total of 2.8% (81/2,945) of patients suffered oesophageal perforation in association with upper GI dilation and/or insertion of oesophageal tubal prosthesis during or within 48 hours of the procedure (Table 76). There was a trend for oesophageal tubal prostheses without dilation and oesophageal dilation using a forced pneumatic balloon to be associated with a greater incidence of oesophageal perforation than the graduated bougie or through the endoscope method. The findings suggest that a larger national audit of specific techniques and equipment may be indicated.

Death

Where the outcome was known, 0.7% (20/2,828) of patients died within 48 hours of the procedure (Table 77).

Table 77. Dilation method and death

Dilation method	Died	Survived	Unknown	Sub-total	Not answered	Total
None	4	328	21	353	16	369
Graduated bougie	11	1,227	74	1,312	50	1,362
Forced pneumatic balloon	2	165	11	178	13	191
Through the endoscopic balloon	2	801	28	831	30	861
Two methods used	0	7	1	8	1	9
Sub-total	19	2,528	135	2,682	110	2,792
Not answered	1	137	8	146	7	153
Total	20	2,665	143	2,828	117	2,945