# Complications of Fluoroscopy Guided Oesophageal Self Expanding Metal Stent Insertion.

**Descriptor:**

Monitoring complication rates of fluoroscopy guided oesophageal self expanding metal stent insertion.

**Background:**

Insertion of self-expanding metal stents is widely practised in the palliation of malignant oesophageal strictures and to a lesser extent in the treatment of benign strictures refractory to standard therapy, when retrievable stents are employed [1]. The technique is regarded as safe and effective, providing rapid relief of symptoms [2]. However, complications can occur, such as stent migration, haemorrhage, perforation/fistula formation and tumour overgrowth [3]. Therefore, it is important to review the procedure of stent insertion against any subsequent complications and compared with data from the literature.

## The Cycle

**The standard:**

The Cardiovascular and Interventional Radiological Society of Europe (CIRSE) guidelines for placement of oesophageal stents [3].

The frequencies of complications caused by implantation of self expanding metal stents as reported by these guidelines are as following:

• Haemorrhage: 3-8 %

• Prolonged chest pain: 14 %

• Migration: uncovered stent: 0-6 %

• Migration: covered stent: 25-32 %

• Overgrowth: 60 %

• Tumour ingrowth: uncovered stent: 17-36 %

• Tumour ingrowth: covered stent: Negligible

• Fistula: Uncommon

• Perforation: Uncommon

• Acute and delayed obstruction of the airways: Uncommon4

• Stent fracture: Uncommon5

• Death: 0–1.4 %

**Target:**

Complication rates should not exceed the figures reported by CIRSE guidelines.

## Assess local practice

**Indicators:**

The frequencies of complications occurring with fluoroscopy - guided oesophageal self expanding metal stent insertion.

**Data items to be collected:**

Indications for stent insertion: Malignancy versus benign

Site of stricture and length (distal GOJ tumours associated with higher rate of migration).

Records of procedure performed including stent length and type (covered versus un-covered).

Details of coagulation profile should be included as haemorrhage is commonest complication.

Frequency and type of complications: Complications can be categorised as immediate (at time of procedure), early (within 1week of the procedure) and late (>1 week).

Haemorrhage should be further clarified as severe (life threatening- normally associated with erosion into carotid artery) and non-severe.

Post-stent insertion treatment- particularly adjuvant therapy with dilatation/Thermal ablation/Photodynamic therapy with brachytherapy. This is a recognised factor associated with increased oesophageal rupture post-stent insertion6

Clinical improvement post-stent insertion- recognised as improvement of 1 or more in the dysphagia level score.

Most of this information should be obtainable using the Upper GI MDT data, as well as data from RIS and PACS systems.

**Suggested number:**

All procedures of stent insertion performed during a one-year period.

**Suggestions for change if target not met:**

• Modify the technique of the procedure or undertake re-training

• Review the adequacy and quality of the stents

• Review criteria for patient selection and compare with alternative methods such as endoscopic stent insertion

• Re-audit following change to maintain standards

**Resources:**

See appendix for details of:

• Complication rates according to the CIRSE guidelines

• Complication rates according to the American Guidelines

• Other published complications

[**180\_appendix.doc**](https://www.rcr.ac.uk/sites/default/files/audit_template/180_appendix.doc)WORD - 56 KB

**References:**

1. Sharma P, Kozarek R and the Practice Parameters Committee of the American College of Gastroenterology. Role of Esophageal Stents in Benign and Malignant Diseases. Am J Gastroenterol 2010; 105:258–273.
2. Sreedharan A, Harris K, Crellin A, Forman D, Everett SM. Interventions for dysphagia in oesophageal cancer. Cochrane Database of Systematic Reviews 2009, Issue 4.
3. Sabharwal T, Morales JP, Irani FG, et al. Quality Improvement Guidelines for Placement of Esophageal. Cardiovasc Intervent Radiol (2005); 28:284–288.
4. Libby ED, Fawaz R, Leano AM, Hassoun PM. Airway complication of expandable stents. Gastrointest Endosc 1999;49:136-137
5. Zelenˇa´k K, Misˇtuna D, Lu´cˇan J, et al. Broken Esophageal Stent Successfully Treated by Interventional Radiology Technique. CardioVascular and Interventional Radiology. Volume 33, Number 3 / June, 2010: 643-645.
6. Maier A, Pinter H, Friehs GB, Renner H, Smolle- Juttner FM. Self expandable coated stents after intraluminal treatment of oesophageal cancer; a risky procedure. Ann Thorac Surg 1999;67:781-784.

**Editor's comments:**

For further information with regards to published complications of oesophageal self expanding metal stent insertion, please refer to appendix in resources.

**Submitted by:**

M Nabi, J Phillips-Hughes, M Bratby, S Anthony and R Uberoi. Updated by R Balasubramaniam

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