



# BRACHYTHERAPY

## Editors' pick

### Oesophageal brachytherapy: Institut Gustave Roussy's experience

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#### What was your motivation for initiating this study?

Oesophageal cancer is one of the leading causes of death by cancer in developing countries. Despite advances in surgery, chemotherapy and radiotherapy, prognosis remains poor. Oesophageal brachytherapy may be useful in different indications, for instance in a re-irradiation setting, as a boost after radiochemotherapy, as an exclusive treatment modality for Tis/T1N0 tumours or for palliative reasons. Our institution has 20 years of experience in the use of this technique and we felt it was important to report our results on 90 consecutive patients in these four indications.

#### What were the main challenges during the work?

The main challenge of this work was the long period of inclusion, and thus the heterogeneity in staging modalities. Some patients may have been offered oesophageal brachytherapy, which is a purely local treatment, for a locally advanced or even metastatic disease that could not be detected through radiographic means at the time. This may have impaired our results in terms of distant progression and survival.

#### What are the most important findings of your study?

What is striking compared with published studies (1,2) is our low toxicity rate: 3% grade 5 toxicity (fistulas) and 4% grade 3 oesophagitis. This might be explained by: the rigorous technique that we use, which employs a wide-calibre applicator; the avoidance in our clinic of the performance of concomitant chemotherapy during brachytherapy; the performance of the procedure by the same experienced medical team (brachytherapist and gastroenterologist); and the prescription of a total dose that is tailored to the endoscopic mucosal surface at each fraction.

The second most important finding is the relatively good results that we have reported in the re-irradiation and boost settings; more than 25% and 50% of the patients remain alive after two years, respectively, in a highly comorbid population.

#### What are the implications of this research?

The technique, despite its undeniable dose distribution advantage, has perhaps fallen too hastily into disuse since the disappointing results of the set of trials that were performed about 20 years ago by the Radiation Therapy Oncology Group of the USA, called RTOG94-05 (3). With strict patient selection and a rigorous technique, oesophageal brachytherapy may represent a safe and effective option for patients with oesophageal cancer, especially those with inoperable tumours or those with heavy comorbidities. In particular, patients who present with a localised oesophageal tumour in a previously irradiated area should be considered for brachytherapy, since the morbidity of salvage surgery in this context is particularly high (4,5). We hope this publication will help towards the resurgence of this technique.



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**References:**

1. Gaspar LE, Winter K, Kocha WI, Coia LR, Herskovic A, Graham M. A phase I/II study of external beam radiation, brachytherapy, and concurrent chemotherapy for patients with localized carcinoma of the esophagus (Radiation Therapy Oncology Group Study 9207): final report. *Cancer*. 2000 Mar 1;88(5):988–95.
2. Hishikawa Y, Tanaka S, Miura T. Recurrent esophageal carcinoma treated with intracavitary irradiation. *Radiat Med*. 1984 Mar;2(1):56–60.
3. Minsky BD, Pajak TF, Ginsberg RJ, Pisansky TM, Martenson J, Komaki R, et al. INT 0123 (Radiation Therapy Oncology Group 94-05) phase III trial of combined-modality therapy for esophageal cancer: high-dose versus standard-dose radiation therapy. *J Clin Oncol Off J Am Soc Clin Oncol*. 2002 Mar 1;20(5):1167–74.
4. Tachimori Y, Kanamori N, Uemura N, Hokamura N, Igaki H, Kato H. Salvage esophagectomy after high-dose chemoradiotherapy for esophageal squamous cell carcinoma. *J Thorac Cardiovasc Surg*. 2009 Jan;137(1):49–54.
5. Chao YK, Chan SC, Chang HK, Liu YH, Wu YC, Hsieh MJ, et al. Salvage surgery after failed chemoradiotherapy in squamous cell carcinoma of the esophagus. *Eur J Surg Oncol J Eur Soc Surg Oncol Br Assoc Surg Oncol*. 2009 Mar;35(3):289–94.

