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## Follow-up in Patients Treated for Head and Neck Cancer: How Frequent, How Thorough and for How Long?

THE CARE for cancer patients does not end when the treatment is completed. In most centres these patients are seen in the outpatient department at regular intervals for follow-up visits. Usually these occur at special interdisciplinary consulting-hours and for head and neck cancer patients consist of a short history and a physical examination of the head and neck. Attention is particularly directed to the mucous membranes of the upper aerodigestive tract and to the status of the regional lymph nodes in the neck. If suspicion for recurrence arises, further investigations are carried out. Generally, a chest X-ray is performed yearly.

Follow-up of patients treated for cancer primarily aims at early detection of loco-regional recurrences, based on the assumption that such recurrences are more likely to be salvaged if detected early. Boysen *et al.* (p. 426–430) have prospectively studied the value of regular follow-up in a group of 661 consecutive patients treated curatively for squamous cell carcinoma of the head and neck. Patients were seen at 2–3 monthly intervals in the first 2 years, and every 3–4 months in the following 3 years. After 5 years follow-up was usually discontinued. A total of 220 patients (33%) developed recurrences and 76% of these were diagnosed during the first 2 years and 11% in the 3rd year following the completion of primary treatment. In 131 (20%) the first site of recurrence was locally, in 54 (8%) regionally and in 35 (5%) at distant sites. Recurrences were diagnosed through symptoms and signs presented by the patients in 61% and by physical examination only in 39%. Surprisingly only 22% of regional recurrences were detected through physical examination.

Recurrences at the primary tumour site were successfully salvaged in over 40%. Secondary treatment of local recurrences was with few exceptions successful only in patients treated initially with radiotherapy alone or with limited surgery and these were, not surprisingly, nearly all patients with laryngeal and oral cancer. The implication here is that frequent meticulous follow-up during the first 3 years is of high value in these groups of patients. On the contrary it appears that we have little to offer in terms of salvage treatment for patients who initially had combined radiotherapy with major surgery. The authors suggest that follow-up in these patients should be mainly one of care

taking and support giving on an individual basis rather than within a strict regular follow-up scheme.

Of the 54 patients with regional recurrences as the first site of failure, only 6 (11%) were salvaged. Taking into account that in 12 patients the neck was initially not treated and in another 28 patients the neck was initially treated with elective radiotherapy, the success rate of salvage treatment is surprisingly low. Apparently the lymph node metastases were detected late, which is in agreement with the statement by the authors that “symptoms and signs suggesting a regional recurrence were often noticed by the patients”. The implication here is that follow-up in patients, for whom we still have salvage neck dissection available, should be more frequent in the first 2 years, e.g. once a month in the first year and every 2 months in the second year. At each follow-up visit the neck should preferably be examined with ultrasound and any nodes with a minimal axial diameter >4 mm should have ultrasound guided aspiration cytology [1, 2]. The suggestion by the authors that patients should be informed and instructed about the possible signs of recurrence in the neck really is to be discarded in a day and age investigational tools are available that permit early detection of nodal metastases in the neck with a much higher accuracy than palpation by an experienced examiner, let alone by the patient himself.

Another important objective of follow-up in patients treated for squamous cell carcinoma of the head and neck is the detection of second primary cancers. Multiple primary tumours constitute a major problem in these patients. The reported incidence varies from 15% to as high as 30% [3]. The great majority of these second primary tumours occur in the same organ, or organ systems: the respiratory tract and the upper digestive tract, including the oesophagus. A relatively small minority present at the same time, or within half a year of the first tumour—also termed the index tumour—and these are called synchronous tumours. The majority occur more than half a year after the index tumour has been diagnosed and these are designated metachronous tumours. Boysen *et al.* found, in their material, that multiple primary tumours developed at a constant rate of nearly 3% per year, which corresponds well with other reports in the literature [4–6]. The implication here is that follow-up after the third year, following completion of initial treatment should be particularly directed at the detection of second primary

cancers in the respiratory and upper digestive tracts and that this should be continued for long periods, if not lifelong.

The question remains at what intervals patients should be seen after the third year and how thorough the examinations should be at each follow-up visit. Ideally, panendoscopy including bronchoscopy and oesophagoscopy is to be carried out every time, but clearly this is not feasible for practical reasons. A logical approach would be to tailor the screening procedures in each individual case to the degree of risk for the development of second primary cancers. Over the past 2 decades some insight has been gained into the kinds of patients who are most likely to be hit by a second cancer. Heavy smokers and drinkers, particularly those who continue these habits after treatment of their index tumour are at high risk [7]. Furthermore, certain correlations could be established between the site of the index tumour and the most likely site of the second primary cancer. Patients with laryngeal cancer, for instance, are particularly at risk to develop lung cancer [8] and this risk is much higher when the index tumour is in the supraglottic larynx as compared with the glottic larynx [4, 9, 10]. There is a need for well designed multi-institutional studies testing the value of regular (half yearly?) flexible bronchoscopy with sputum cytology during follow-up in patients who have been treated for a supraglottic carcinoma of the larynx. In oral cancer patients the sites of second primary cancers are about equally divided between the head and neck, the lungs and the oesophagus [11] and this complicates screening strategies during follow-up. Clearly, our knowledge of individual risk factors for the development of second primary cancers is insufficient and it is of great importance that more research should be carried out into the aetiology of head and neck cancer. Although there is no doubt that tobacco and alcohol are important risk factors in oral, pharyngeal and laryngeal cancer, it seems very likely that individual genetic susceptibility to these external carcinogens is important if only because so many individuals have been and are being exposed to tobacco and alcohol, whereas only relatively few actually develop cancer in the upper air and food passages [12]. Also the role of human papilloma viruses in the aetiology of head and neck cancer is not yet clarified. Furthermore, more research into the identification of occupational factors appears important, as recent reports emphasise the possible role of occupational factors [13, 14]. It is hoped that from research in these various areas biomarkers will become available which predict the individual risk for the development of second primary cancers in head and neck cancer patients and which will thus permit rational screening strategies during follow-up.

One of the problems with follow-up of cancer patients is the enormous work-load involved for the medical and paramedical teams. Boysen *et al.* have put this into perspective by calculating the "recurrence pick-up rate" and subsequent "cure-rate" per number of follow-up consultations carried out. The recurrence "cure rate" for the group of patients initially treated with combined irradiation and major surgery, is in the order of 1/250 consultations. One could go along with the authors when they

suggest cutting down on the frequency of follow-up in this group of patients. However, taking into account what has been said above about the detection of regional recurrences in the neck and second primary tumours, it is hard to understand how "a third of the follow-up consultations can be dropped". Rather, the work-load involved with the follow-up of patients treated for squamous cell carcinoma of the head and neck, is to be accepted, as it has been clearly shown that frequent follow-up, during the first 3 years is of great value for the detection and treatment of local and regional recurrences and as further long term follow-up may be of value for the detection and treatment of second primary cancers.

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