OBJECTIVE: The aim of this study was to evaluate the benefit of image fusion of CT (computertomography) and bone SPECT (single photon emission computed tomography) in diagnosis of head and neck cancer. METHODS AND PATIENTS: Computer based image fusion has been applied in 39 patients with suspected cancer in the oromaxillofacial region following CT and SPECT without any further hazard for the patients. Afterwards image fusion was set in comparison to simultaneously evaluation of CT and SPECT and histological findings. RESULTS: In 5 out of 39 patients SPECT/CT image fusion obtained more precise anatomical findings in tumour expansion than simultaneously evaluation of CT and SPECT. CONCLUSION: For planning of surgical and radiation therapy of oral and maxillofacial cancer, image fusion of CT/SPECT provides efficient and plasical diagnostic imaging. Particularly in complex anatomical regions like maxilla or base of the skull image fusion could be an additional device, if simultaneous evaluation of CT and SPECT is not clear.