

# Gross Pathology of Superficial Esophageal Carcinoma with Special Reference to Depth of Tumor Invasion: An Analysis of 405 Lesions from 363 Cases, 2000-2016

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## Abstract

**Objectives:** To clarify the gross features of superficial esophageal carcinoma that massively invaded the submucosa.

**Materials and Methods:** The gross features of 405 lesions (338 intramucosal carcinoma lesions, 67 submucosal invasive carcinoma lesions) from 363 cases of endoscopically or surgically resected superficial esophageal carcinomas were investigated. Macroscopic tumor type, depth of tumor invasion and histologic type of carcinoma were evaluated according to the Japanese Classification of Esophageal Cancer. Protrusion height and depth of excavation were measured from the surface of the perilesional mucosa. Also, the shapes of the base of each protruding-type lesion were evaluated.

**Results:** The gross types of carcinoma were as follows: superficial protruding type, 3 lesions; surface protruding type, 25 lesions; surface flat type, 73 lesions; surface excavated type, 255 lesions; superficial excavated type, 1 lesion and mixed type, 48 lesions. Depth of tumor invasion of carcinoma included intramucosal carcinoma in 338 lesions and submucosal invasive carcinoma in 67 lesions (SM1 carcinoma, 19 lesions; SM2 or deeper carcinoma, 48 lesions). Among the SM2 or deeper carcinomas, carcinomas massively invaded the submucosa in 28 lesions, and 24 of these lesions (85.7%) formed excavations caused by ulceration, whereas the 4 lesions without ulceration (14.3%) formed a protrusion caused by expansive growth of tumor tissue.

**Conclusions:** Gross findings reflecting submucosal massive invasion of carcinoma were dome-like protrusion with sloping up gently (so-called “tense elevation”) and excavation accompanied by clear ulceration.

**Key words:** Superficial esophageal carcinoma, Depth of tumor invasion, Gross pathology, Intramucosal carcinoma, Submucosal invasive carcinoma, Ulceration, Dome-like protrusion