

## Histopathology of Poorly Differentiated Gastric Adenocarcinoma of Solid Type and Its Clinicopathological Significance

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### ABSTRACT

Poorly differentiated gastric adenocarcinoma of solid type is known to display clinicopathological diversity and recently attracts attention as representative histological variant with microsatellite instability which could be targeted by immune checkpoint blockade with pembrolizumab and so on. However, its morphological characteristics have rarely been investigated. In this study, we defined poorly differentiated medullary carcinoma showing the following three features: (a) more than 90% of the entire tumor were composed of poorly differentiated adenocarcinoma in a medullary growth; (b) the tumor exhibited an expansive growth at the tumor margin; and (c) special types such as a neuroendocrine carcinoma,  $\alpha$ -fetoprotein-producing carcinoma, and carcinoma with lymphoid stroma were excluded. Based on the definition, we sub classified the poorly differentiated gastric adenocarcinoma of solid type into the two groups: medullary carcinoma and non-medullary carcinoma and clinicopathologically evaluated 23 cases of medullary carcinomas and 38 cases of non-medullary carcinomas. The medullary carcinomas less frequently displayed venous invasion, lymphatic invasion, and lymph node metastasis, compared with the non-medullary carcinoma ( $P=0.002$ ,  $P<0.001$  and  $P<0.001$ , respectively). The patients with medullary carcinomas significantly showed better disease-free survival ( $P=0.017$ ). This is the first study to demonstrate that poorly differentiated adenocarcinoma of solid type can be sub classified into tumors with low and high malignant potentials. Gastric poorly differentiated medullary carcinoma is considered to be a novel histological type predicting good patients' prognosis.

**Keywords:** Gastric carcinoma, Poorly differentiated adenocarcinoma, Solid type, Medullary carcinoma, Prognosis, Microsatellite instability

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