A rare *Helicobacter pylori* infection-negative early gastric cancer in a young man with primary hypertrophic osteoarthropathy

*Helicobacter pylori* (*Hp*) infection-negative gastric cancer is very rare [1]. We describe a rare early gastric cancer in *Hp* infection-negative gastric mucosa in a young man with primary hypertrophic osteoarthropathy, which is a rare monogenic disease [2].

A 30-year-old man was referred to our hospital for endoscopic examination. Endoscopy revealed a whitish and laterally spread elevated lesion in the greater curvature of the upper gastric body. The size of the lesion was approx. 2.5 × 3.0 cm (►Fig. 1). No atrophy or intestinal metaplasia was observed in the background gastric mucosa. The biopsy from the background mucosa showed no obvious abnormality (►Fig. 2). Furthermore, both the serum *Hp* antibody and urea breath test were negative. Narrow-band imaging (NBI) with magnifying endoscopy revealed a papillary-shaped microsurface and irregular microvessels in the lesion with clear demarcation (►Fig. 3, Video 1). According to the vascular and surface pattern classification system [3], it was considered a cancerous lesion. Also, the biopsy showed high grade intramucosal neoplasia (*HGIN*), and thus endoscopic submucosal dissection (ESD) was performed.

Histologically, the tumor glands presented papillary or tubular growth with obvious structural atypia, and the tumor cell density was significantly increased (►Fig. 4). Immunohistochemically, the neoplasia area was positive for MUSAC but negative for MUC6, MUC2, CD10, and CDX-2 expression, suggesting that the mucin genotype was gastric. The ki-67 labeling index was 10%. The expression of p53 protein was negative (►Fig. 5). Finally, the lesion was diagnosed as a foveolar-type adenoma with *HGIN* according to the World Health Organization (WHO) classification, and as a well-differentiated adenocarcinoma using the Japanese Classification of Gastric Carcinoma (JCGC) [4].
The main etiology of this disease remains unclear; it may be associated with lifestyle, gene mutations, virus infection, or an autoimmune disorder [5]. In this case, SLCO2A1 mutation was detected. An SLCO2A1 mutation results in increased circulating PGE2 levels, which can stimulate cell proliferation, suggesting a link between primary hypertrophic osteoarthropathy and tumors. Therefore, endoscopy should be performed to monitor the gastric neoplasia lesions in this subset of patients.

Endoscopy_UCTN_Code_CCL_1AB_2AD_3AB

Competing interests

The authors declare that they have no conflict of interest.

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References


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Immunohistochemical analysis showed that the tumor cells were positive for MUC5AC, but negative for P53, MUC6, MUC2, CDX-2, and CD10 expression.