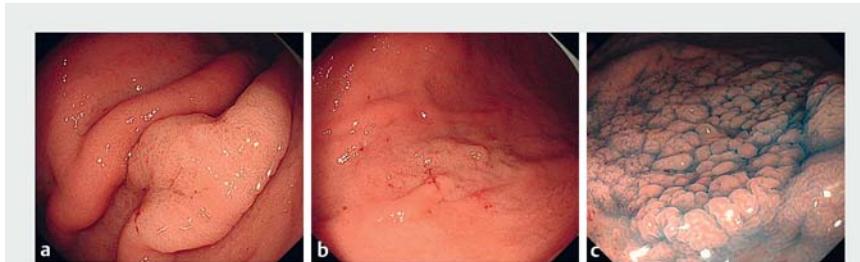


A rare helicobacter pylori infection-negative early gastric cancer in a young man with primary hypertrophic osteoarthropathy

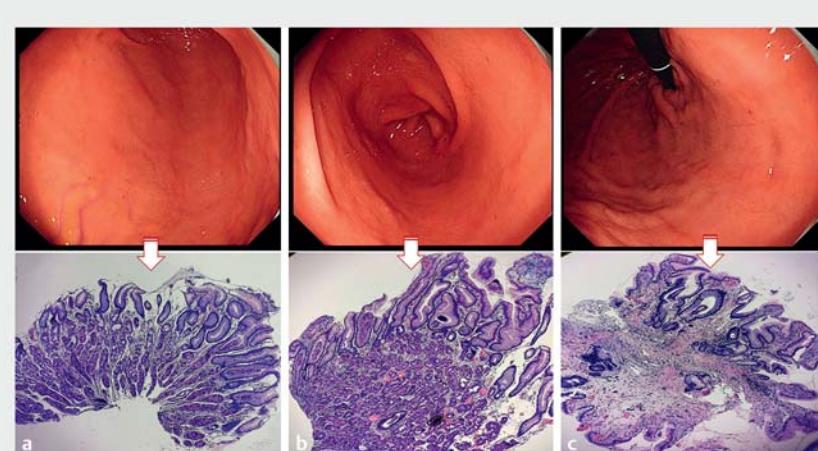
Helicobacter pylori (*Hp*) infection-negative gastric cancer is very rare [1]. We describe a rare early gastric cancer in *Hp* infection-negative gastric mucosa in a young man with primary hypertrophic osteoarthropathy, which is a rare mono-genetic disease [2].

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 intraepithelial neoplasia (HGIN), and thus endoscopic submucosal dissection (ESD) was performed.

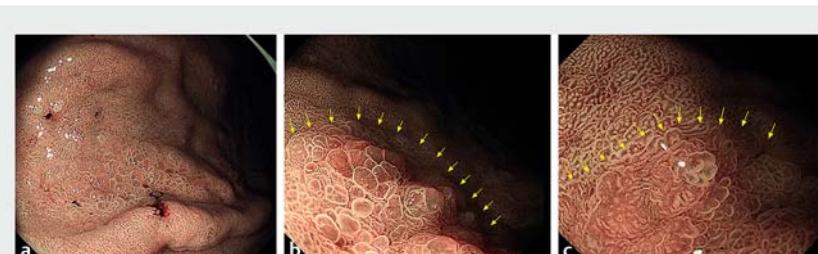
Histologically, the tumor glands presented papillary or tubular growth with obvious structural atypia, and the tumor cell density was significantly increased (►Fig. 4). Immunohistochemically, the neoplasia area was positive for MU5AC but negative for MUC6, MUC2, CD10, and CDX-2 expression, suggesting 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].



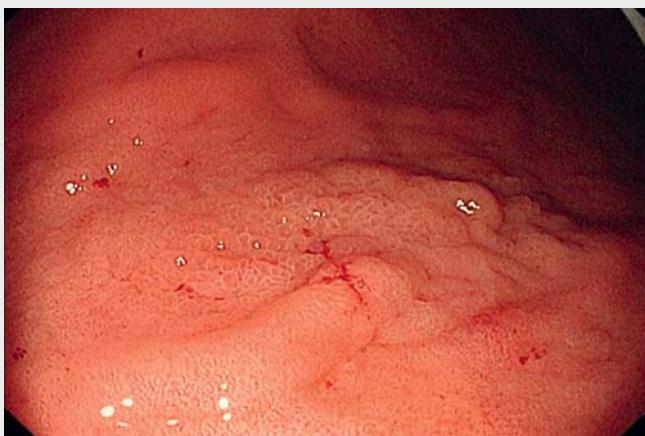
► Fig. 1 Endoscopic views of lesion. a, b A discolored and laterally spread elevated lesion, 2.5×3.0 cm in size, in the greater curvature of the upper gastric body. c Indigo carmine dyeing showed clear demarcation line.



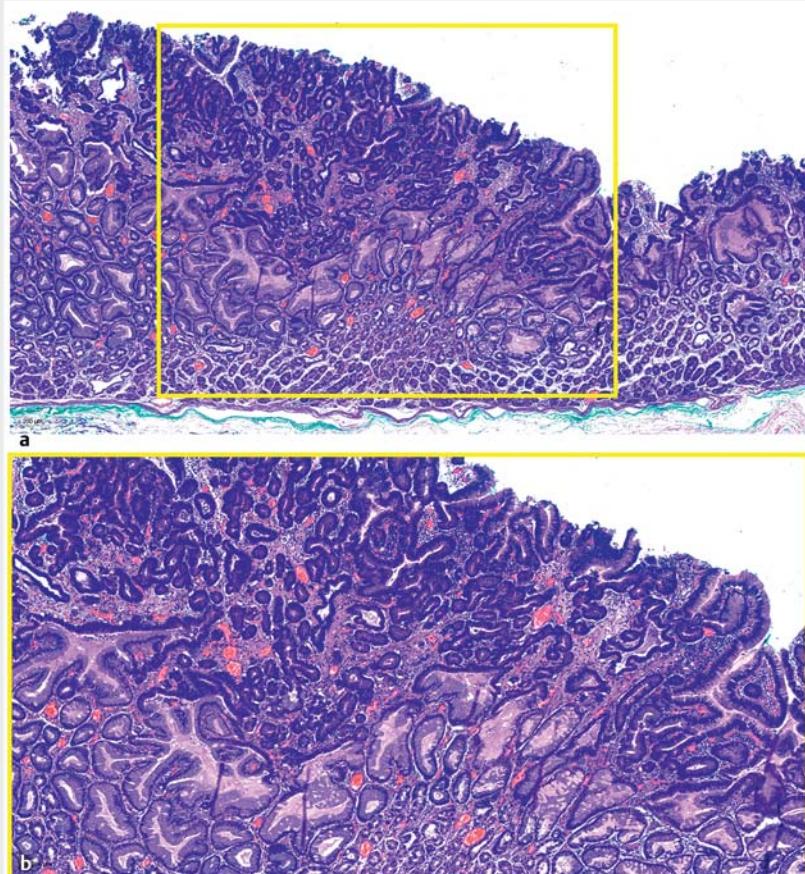
► Fig. 2 a, b, c No atrophy and intestinal metaplasia in the background gastric mucosa, and no obvious abnormality or *Hp* infection was observed in biopsies from these areas.



► Fig. 3 a, b, c Narrow-band imaging with magnifying endoscopy showed an irregular papillary-shaped microsurface and irregular microvascular pattern.



► **Video 1** The endoscopic characteristics of a rare foveolar-type early gastric cancer.



► **Fig. 4** **a** Histological examination showed tumor glands presented papillary or tubular growth with obvious structural atypia. **b** The tumor cell density was significantly increased.

The main etiology of this disease remains unclear; it may be associated with life-style, gene mutations, virus infection, or

an autoimmune disorder [5]. In this case, SLC02A1 mutation was detected. An SLC02A1 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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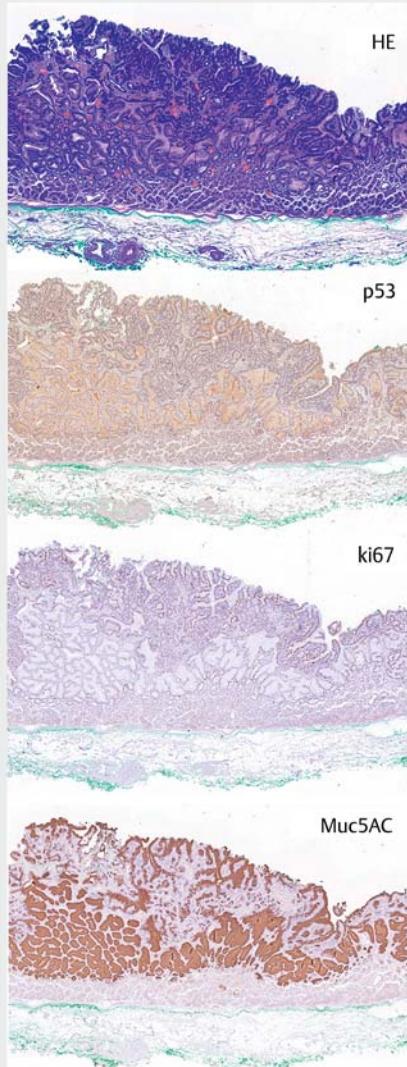
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* Authors co-share first authorship



► **Fig. 5** Immunohistochemical analysis showed that the tumor cells were positive for MUC5AC, but negative for P53, MUC6, MUC2, CDX-2, and CD10 expression.

Bibliography

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