Pyloric gland adenoma arising in gastric heterotopia within the duodenal bulb

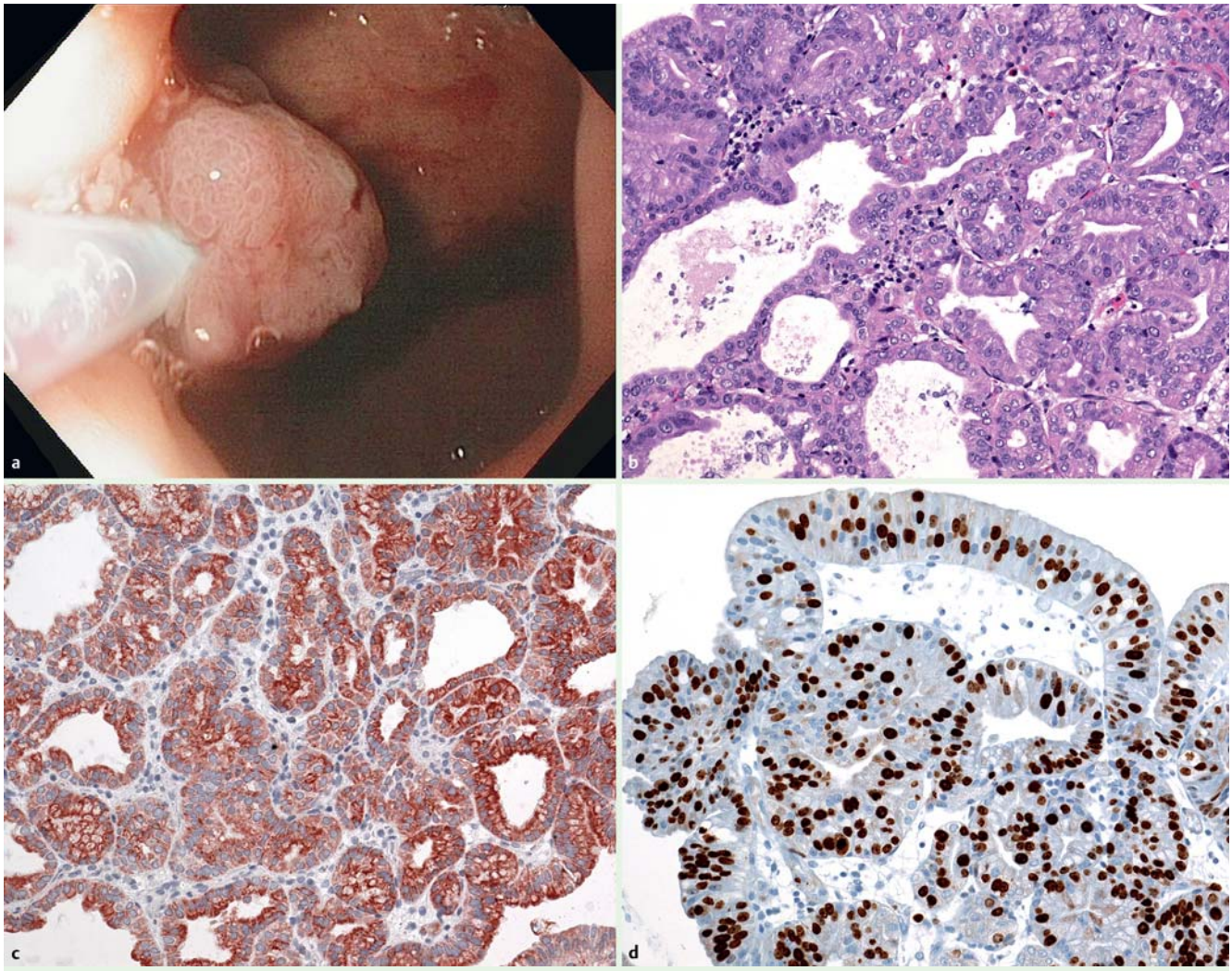

Fig. 1 **a** Endoscopic view of a pyloric gland adenoma arising within the duodenal bulb. **b** Closely packed pyloric gland-type glands made up of cuboidal to columnar epithelial cells with pale to eosinophilic cytoplasm on histological examination. **c** The tumor cells are diffusely positive for mucin 6 apoprotein (MUC6). **d** Note the marked proliferative activity in high-grade tumor areas (MIB1).

Pyloric gland adenoma is a peculiar tumor which mainly occurs within the stomach. Rarely, the tumor has been documented to originate from the duodenum and from other extragastric sites [1–4].

A 69-year-old woman underwent upper endoscopy for recurrent unspecific epigastric pain and nausea. While the stomach appeared normal on gross inspection, several polypoid lesions, the largest of which measuring 1.5 cm in diameter, were detected within the duodenal bulb (**Fig. 1a**).

Histopathological examination showed closely packed pyloric gland-type glands made up of cuboidal to columnar epithelial cells that contained pale to eosinophilic cytoplasm. The nuclei were mainly small and round rather than oval, with few cells showing prominent nucleoli (**Fig. 1b**). Remnants of non-neoplastic heterotopic gastric oxyntic-type glands were found next to the tumor cells. Parts of the lesion demonstrated complex glandular crowding with a back-to-back pattern of tubular structures, increased nuclear pleomorphism and stratification, as well as mitotic activity. These areas qualified as high-grade dysplasia. Immunohistochemistry revealed diffuse positivity of the neoplastic cells for mucin 6 apoprotein (MUC6, **Fig. 1c**), while expression of MUC5AC was not observed. The high-grade tumor areas showed marked MIB1 proliferative activity (**Fig. 1d**), leading to a final diagnosis of high-grade pyloric gland adenoma originating from heterotopic gastric mucosa within the duodenal bulb.

The present case illustrates an extragastric pyloric gland adenoma originating from heterotopic gastric mucosa, as has so far been documented in only two other duodenal lesions [1,3] and one rectal lesion [5]. Gastric heterotopia, however, appears to be the prerequisite for tumor histogenesis.

Similar to our case, 10 out of 19 lesions in the study by Chen et al. [3] presented with high-grade dysplasia ($n = 8$) or associated adenocarcinoma ($n = 2$). Endoscopists

should recognize that pyloric gland adenomas harbor a considerable risk of malignancy. Tumors should be removed completely, and affected patients warrant close follow-up.

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Competing interests: None

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Bibliography
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