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Case report

Adenosquamous carcinoma of the ileum

Report of a case and review of the literature

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Summary. Adenosquamous carcinomas of the intestine are rare tumours, especially those occuring in the small bowel. We report the first case of a metastasizing adenosquamous carcinoma of the ileum in a 74 year old male. The tumour mainly consisted of squamous cells, many of which reacted with antikeratin antibody. A review of the pertinent literature is given.

Key words: Adenosquamous carcinoma – Ileum – Antikeratin antibody

Adenosquamous carcinomas are rare tumours with mixed adenocarcinomatous and squamous elements (Rubio et al. 1981). In the gastrointestinal tract this tumour is mainly localized in the large bowel (Rubio et al. 1981; Comer et al. 1971) and only two cases of adenosquamous carcinoma of the small intestine have been reported previously (Wood 1967; Bjerregaard 1974). These tumors were localized in the jejunum and the middle part of the small bowel, respectively. The first case of an adenosquamous carcinoma of the ileum is reported here. Conventional staining procedures were completed by an immunohistochemical study of the tumour.

Case report

A 74 year old man suffering from abdominal pain for two weeks presented with signs of an ileus. Exploratory laparotomy revealed a tumour obstructing the ileum 65 cm proximal to the ileocoecal valve. The tumour mass appeared to be adherent to the peritoneal surface of the urinary bladder. Intensive search for another tumour site was negative. A part of the ileum was resected and an end-to-end enteroanastomosis was performed.

Material and methods

Histopathological examination was performed on formalin-fixed tissue embedded in paraplast. All sections were stained with haematoxylin and eosin (HE), periodic acid Schiff's reagent

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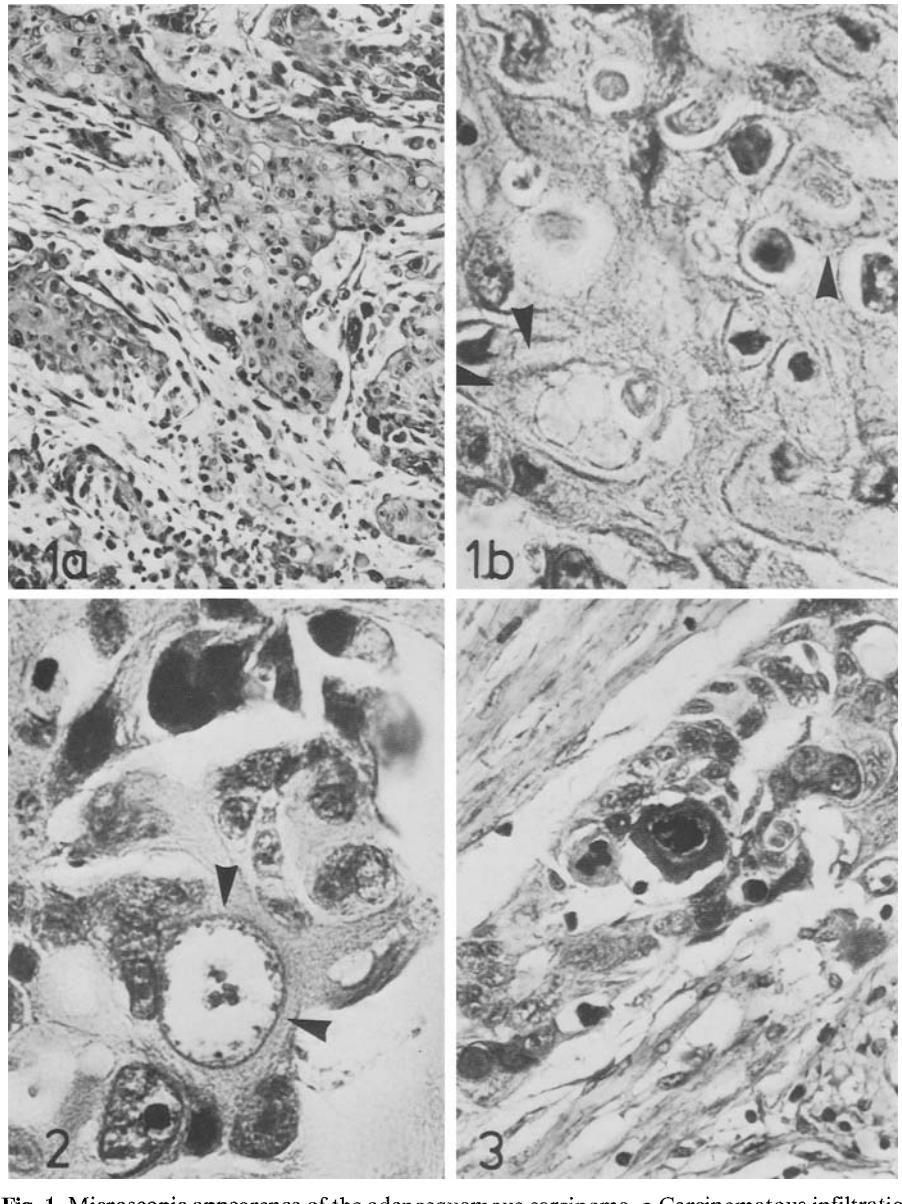

Fig. 1. Microscopic appearence of the adenosquamous carcinoma. **a** Carcinomatous infiltration of deeper parts in the ileal wall with squamous cell complexes (PAS, ×140). **b** Sheets of pleomorphic squamous cells with distinct intercellular bridges (*arrows*) (PAS, ×880)

Fig. 2. Complex of tumour cells in the deep submucosal layer. One cell with a bizarre excentric nucleus and a large intracytoplasmic globule containing PAS-positive material (*arrow*) (PAS, ×880)

Fig. 3. Nest of tumour cells with moderate to strong cytoplasmic immunostaining for keratin antibody; intervening stromal cells are negative (PAP technique, ×350)

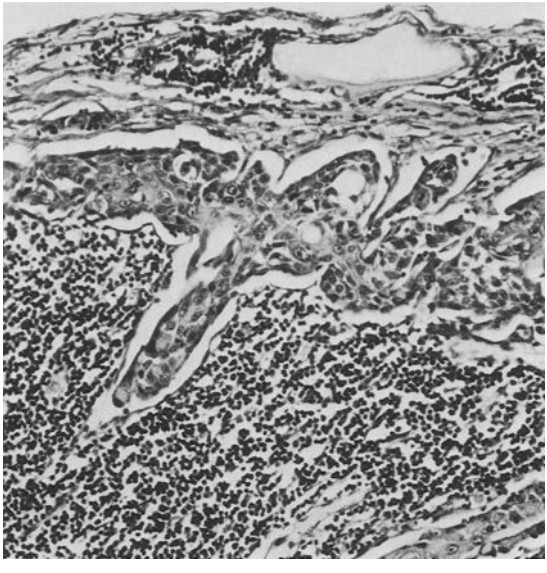

Fig. 4. Metastasis in a regional lymph node showing tumour cells with squamous differentiation in the marginal sinus (HE, × 140)

(PAS), alcian blue and Giemsa. Immunoperoxidase reaction for keratin (DAKO, Copenhagen, DK) and carcinoembryonic antigen (CEA; IMMULOK, Carpintiria, USA) using the three step peroxidase antiperoxidase method (PAP) according to Sternberger (1979) was performed.

Pathology

The specimen consisted of a 50 cm long small bowel segment with adjacent mesentery and parts of the greater omentum. In the central part of the intestine a white-greyish, moderately firm tumour measuring up to 4 cm in diameter was found. All layers of the ileal wall were infiltrated and the exophytic portion of the tumour partially obstructed the lumen. Several firm lymph nodes were detected in the mesentery.

Histological examination shows a malignant epithelial tumour which exhibits squamous as well as adenocarcinomatous elements. Squamous formations, arranged in sheets of pleomorphic often polygonal cells with acidophilic cytoplasm and distinct cell membranes, dominate the picture (Fig. 1). A few cuboidal or, rarely cylindrical cells, with alcian blue and PAS-positive intracytoplasmic globules, are interspersed (Fig. 2). No clear tubular or cystic formations are found. Numerous giant tumor cells with bizarre hyperchromatic nuclei, sometimes showing atypical mitoses, complete the histological picture. Larger tumour cell complexes occasionally exhibit central foci of necrosis. Immunostaining with antikeratin antibody shows a moderate to strong positivity in a considerable number of tumour cells (Fig. 3), while CEA can be verified only in a small portion of neoplastic cells. Extensive metastases, mainly consisting of sheets or strands of squamous cells are detected in regional lymph nodes (Fig. 4).

Discussion

Adenosquamous carcinomas are an infrequent finding in the large bowel and exceptionally rare in the small intestine. Eleven cases have been observed in the caecum (Rubio et al. 1981). In addition 8 tumours in other parts of the large bowel have been reported (Al-Doroubi et al. 1970; Comer et al. 1971; Erasmus et al. 1978), while adenosquamous carcinomas of the small intestine have been described only twice (Wood 1967; Bjerregaard 1974). These tumours were localized in the jejunum. We report on the first adenosquamous carcinoma of the ileum. The definition of the WHO suggests a clear differentiation of adenosquamous carcinoma containing adenocarcinomatous as well as malignant squamous epithelial components, from adenoacanthoma which represents an adenocarcinoma with foci of squamous metaplasia (Poulsen et al. 1975). Following these criteria, our case and those of Wood (1967) and Bjerregaard (1974) can be regarded as true adenosquamous carcinomas though both authors used the term "adenoacanthoma".

In our case squamous elements predominated in the histological picture which initially resembled a pure squamous carcinoma, while the mixed epithelial tumours reported in the literature generally showed larger portions of adenocarcinoma. In agreement with these findings is the fact that a considerable number of tumour cells in our case reacted with antibody against keratin, while only a few were positive for CEA. However, the results obtained from staining with antikeratin are inconsistant in adenocarcinomas. In a series of 7 colonic adenocarcinomas none of the tumours reacted with antibody against intracellular keratin (Schlegel et al. 1980), but strong positivity was observed in 25 gastrointestinal neoplasms (including 17 adenocarcinomas of the colon) by Altmannsberger et al. (1982).

The origin of adenosquamous carcinomas of the small intestine is obscure. Though chronic inflammatory processes have been accused of causing atypical regeneration of the epithelium with patchy squamous metaplasia in the bronchus, colon and rectum (Cook and Klickstein 1958) such events seem unlikely in the small bowel. Furthermore, there was no evidence of chronic inflammation of the ileum in the clinical history of our patient and no signs of inflammatory reaction were seen in the tumour-free parts of the ileum. We therefore share the opinion of Wood (1967) who suggested that adenosquamous carcinoma evolves from undifferentiated basal cells of the gut epithelium.

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