

Case Report

Collision-Tumour of the Cardia

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Summary. This report deals with a “collision-tumour” in the gastric cardia of a 52-year-old male patient:

1. High-seated tubular adenocarcinoma of the stomach invading the terminal esophagus (ascension);

2. mature, slightly cornifying squamous cell carcinoma of the terminal esophagus (antrum cardiacum) with invasion of the tubular adenocarcinoma (descension).

Introduction

As *collision-tumours* (“mixing-tumour” according to R. Meyer, 1919) are known malignant tumours which originate in two topically different localisations and during their further growth invade each other, especially in the border zones.

These tumours are definitely rare in the stomach. Battaglia (1951) found only four doubt-free observations in the literature (Dreyer, 1894: fibrosarcoma and adenocarcinoma; v. Saar, 1918: globocellular sarcoma and adenocarcinoma; Götting, 1931 and Cornelius, 1949: spindle-cell sarcoma and adenocarcinoma) and described a case of his own in a 74-year-old man in whom a lymphosarcoma was associated with a solid, partly tubular adenocarcinoma. Rabinovitch *et al.* (1952) saw the simultaneous occurrence of a lymphosarcoma and an ulcer carcinoma (adenocarcinoma), and Stout (1953) described the coincidence of an adenocarcinoma with a rhabdomyosarcoma of the stomach.

To be distinguished are non-colliding dual carcinomes (References Wanke, 1971).

Particularly of collision-tumours are situated at the esophagus-stomach border these malignant tumours have to be differentiated from *adeno-acanthoma* of this region. So far, 34 morphologically verified observations in the stomach have been reported (References Wanke, 1971).

An observation we made of a high situated tubular adenocarcinoma in the stomach, with collision of a slightly cornifying squamous cell carcinoma of the terminal esophagus is an occasion for considering this problem.

Case Report

In a 52-year-old man with chronic reflux esophagitis and paraesophageal slip hernia, the clinical and radiological suspicion of a high-seated stomach carcinoma was confirmed by biopsy (E. No. 6900/72, Path. Inst. Heidelberg). The $12 \times 8 \times$ maximum 0.7 cm portion of resected stomach (corpus/fundus) with 4 cm of terminal esophagus showed in the region of the ora serrata a flattened polypoid leukoplakia and nearby a coin-sized shallow ulcerating tumour. Histologically that proved to be a second carcinoma (E. No. 7113-14/72, Path. Inst. Heidelberg):

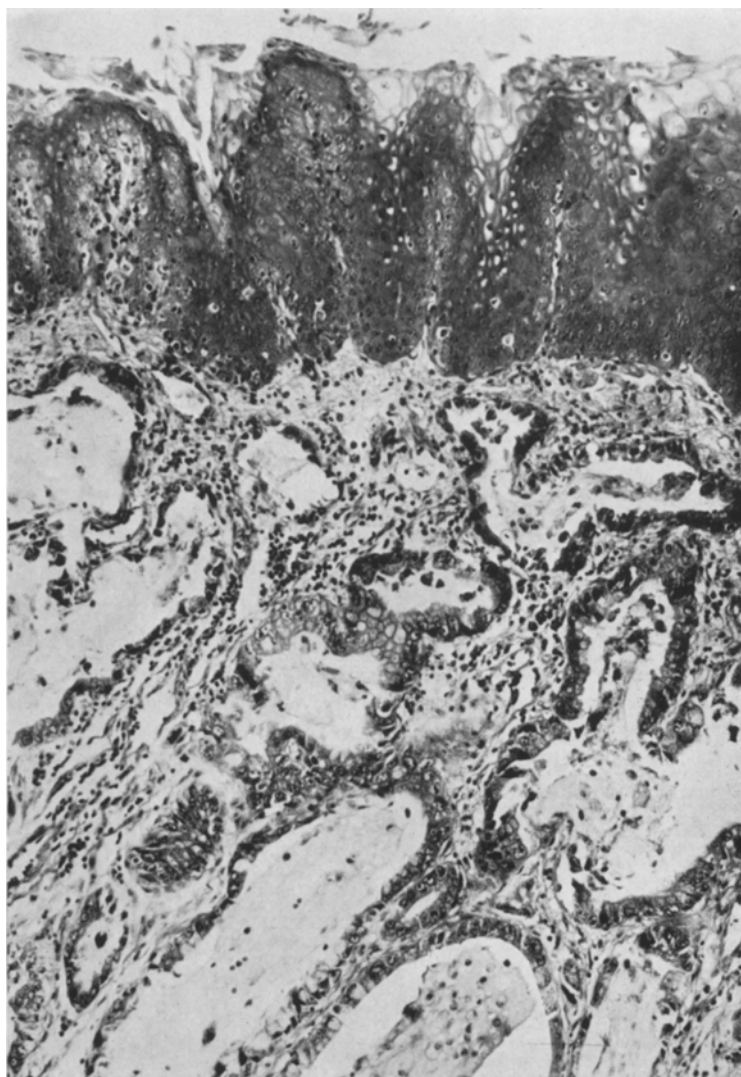


Fig. 1. Tubular adenocarcinoma of the stomach invading the submucosa of the terminal esophagus (antrum cardiacum). (HE); enlargement $\times 120$

1. The tubular adenocarcinoma that had already been revealed infiltrating growth between muscularis mucosae, submucosa and muscularis propria to below the subserosa. The tumour disclosed cellular and nuclear atypias of a medium degree. Its extensions penetrated the submucosa (Fig. 1) and muscularis propria of the terminal esophagus; the epithelial covering the immediate vicinity of the ora serrata was ulcerated.

2. The coin-sized esophageal tumour was a slightly cornifying squamous cell carcinoma which was adjacent to a leukoplakia of increasing dedifferentiation

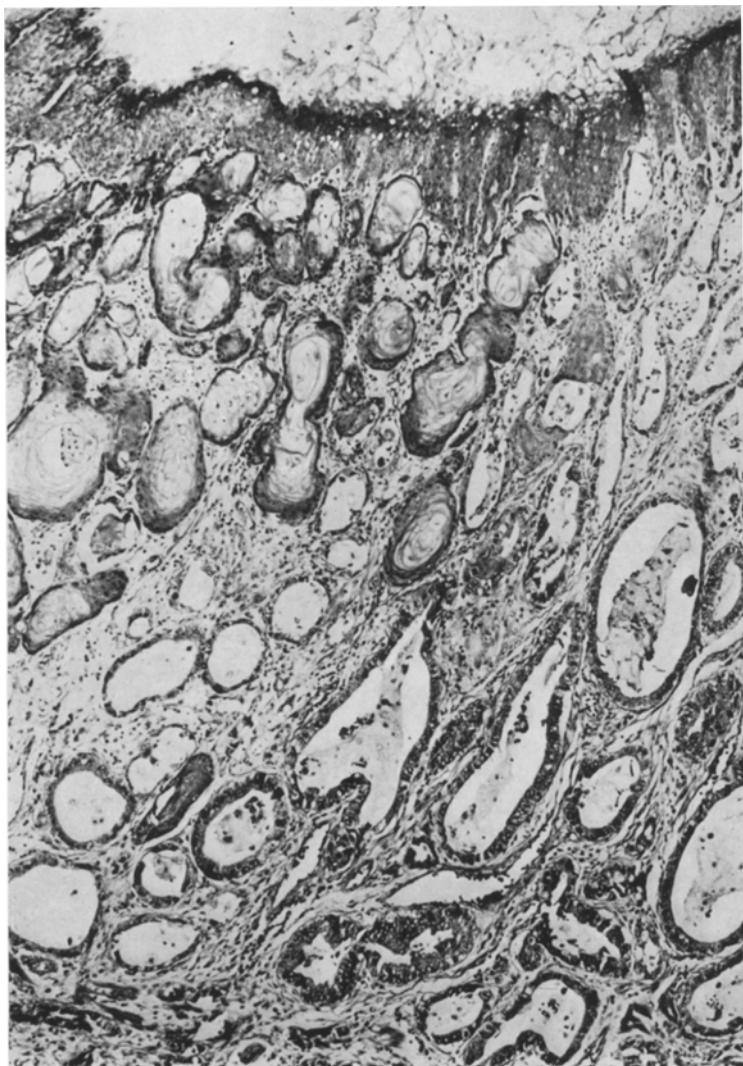


Fig. 2. Squamous cell carcinoma of the terminal esophagus (antrum cardiacum); collision with the tubular adenocarcinoma. (HE); enlargement $\times 56$

and orally to a shallow ulcer of the ora serrata. In addition, there was the chronic reflux esophagitis (Fig. 2). Piniform cones of tumour invaded the submucosa, with the tips of the cones situated between the inner layers of the cardiac muscularis propria. The squamous cell carcinoma had spread submucosally into the tubular glandular formations of the adenocarcinoma and had displaced the carcinomatous columnar epithelial cells of the latter (Fig. 3). Thus, pictures occurred resembling those produced by the plump extension of ectocervical carcinoma into the endocervical glands of the os uteri—only that in the case presented here both components are of a carcinomatous nature.

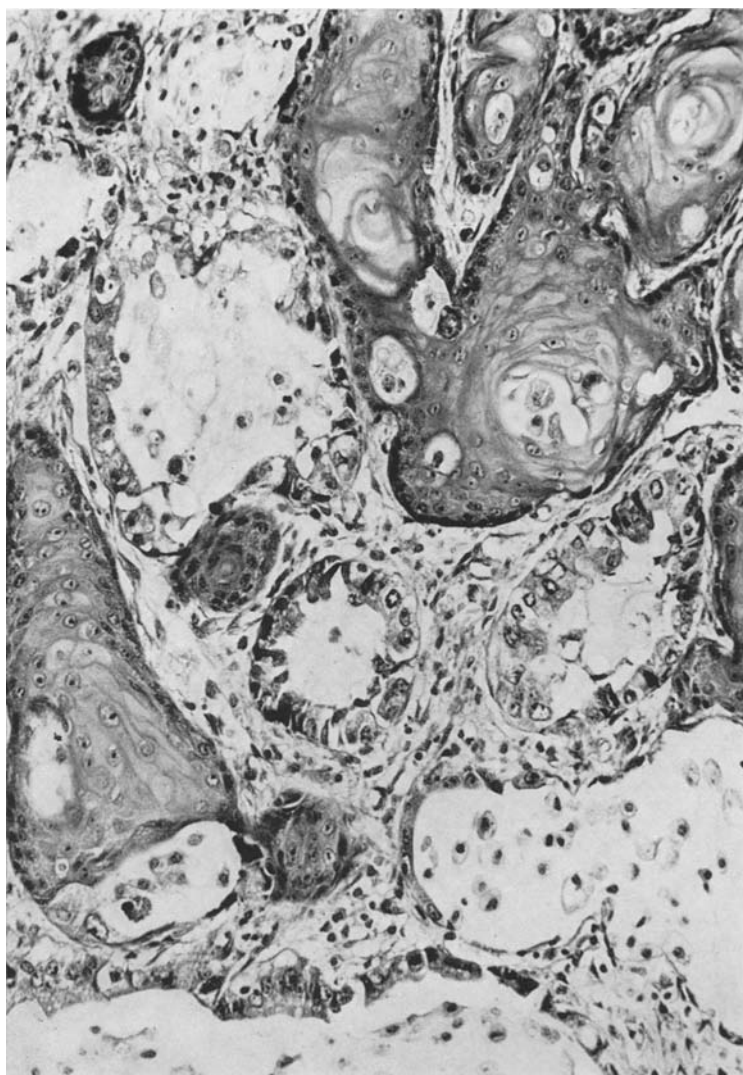


Fig. 3. Squamous cell carcinoma invading the tubular adenocarcinoma. "Collision-tumour". (HE); enlargement $\times 160$

Patho-Anatomical Diagnosis

1. High-situated tubular adenocarcinoma of the stomach extending into the terminal esophagus without detectable lymphnode metastasis.
2. Slightly cornifying, mature squamous cell carcinoma of the terminal esophagus. *Collision-tumour*.

Discussion

Collision-tumours of the stomach that have been described so far showed a carcinomatous and a sarcomatous component (Battaglia, 1951; Rabinovitch *et al.*,

1952; Stout, 1953). With our own observation (two different carcinomas!), 8 doubt-free cases of collision-tumours have now been reported.

According to the definition of R. Meyer (1919) collision-tumours are generally malignant tumours that originate primarily independent of each other at two separate sites (primarily separated carcinomata) and which later on, in the course of their expansion, invade each other.

Compound-tumours on the other hand are carcinomas showing sarcomatous degeneration of the stroma. Corresponding observations were made in the stomach by Schuback (1931, 1957), Nakazawa (1937), Konjetzny (1938) and Battaglia (1951).

When superficially examined our observation reminds one of an *adenoacanthoma*, which occurs somewhat more often in the stomach. These tumours show a combination of epidermoid and tubular differentiation. Among uterine carcinomata, they are no uncommon variant (Novak and Woodruff, 1962), whereas for the stomach only 34 morphologically verified observations have been reported (References Wanke, 1971). The designation adeno-acanthoma goes back to Pasternack (1935). Oberling and Wolf (1927) spoke of an *épithélioma polymorphe*, Gauthier-Villars and Léger (1940) of an *épithélioma malpighien spinocellulaire* and Rabson (1936) of an adenocarcinoid or adenosquamous cell carcinoma. The preferred site of unquestionable observations is the pyloric canal (Boswell and Helwig, 1965, Ref.).

Tumours situated at the esophageal-gastric border were usually, like our case, collision-tumours.

In the older literature (Borrmann, 1926; Ref.; Konjetzny, 1938, Ref.) the esophageal-cardiac border is mentioned as a "frequent" localisation of *gastris squamous cell carcinoma*. Epidermoid carcinoma in this region is supposed to be due to heterotopia of the esophageal epithelial islets. A check on these cases by Altshuler and Shaka (1966, Ref.) and Wanke (1971, Ref.) revealed however that they were almost without exception descending carcinomata of the terminal esophagus and thus primarily esophageal carcinomas. So far only 24 doubtless cases of "pure" squamous cell carcinoma of the stomach have been observed. In addition to the criteria for the site of these tumours, the following morphological findings must be fulfilled according to Boswell and Helwig (1965): 1. cornification and formation of epithelial pearls, 2. mosaic structure of the polygonal cells with sharply defined cell borders and individual cell keratose, 3. intercellular bridges and 4. histochemical demonstration of increased sulfhydryl groups as a preliminary phase of cornification.

In our observation, the mentioned criteria of collision-tumour were topically fulfilled (serial section). Differentiation from adeno-acanthoma was morphologically established.

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