

Case report

Small pedunculated tubular adenoma of the colon with carcinoma restricted to the head, invasion of lymphatics and widespread metastases

Case report and review of the literature

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Summary. The case of a 66 year old woman who died of metastatic adenocarcinoma is reported. The origin of the tumor was found at autopsy to be a focal carcinoma in the head of a small pedunculated tubular adenoma at the recto-sigmoidal junction. Nine similar case reports from the literature are briefly presented.

Key words: Colonic neoplasms – Intestinal polyps – Neoplasm metastasis

Much accumulated knowledge presently suggests that the majority of cancers of the colon and rectum arise in pre-existing benign adenomas. Size, histological type and grade of epithelial atypia together determine the risk that any single adenoma will develop into cancer (Muto et al. 1975; Morson and Dawson 1979).

A definite diagnosis of cancer is made once the atypical epithelium penetrates into or is found beyond the muscularis mucosae. In this case the possibility of metastases already being present has to be considered in the choice of adequate treatment. As far as pedunculated tubular adenomas (adenomatous polyps) are concerned general agreement exists that simple polypectomy is adequate as long as the carcinoma is restricted to the head of the polyp. To find metastases from such a tumor is a very exceptional event and only a few cases have been reported. They are reviewed and the risk factors (poor differentiation and vessel involvement) are briefly discussed.

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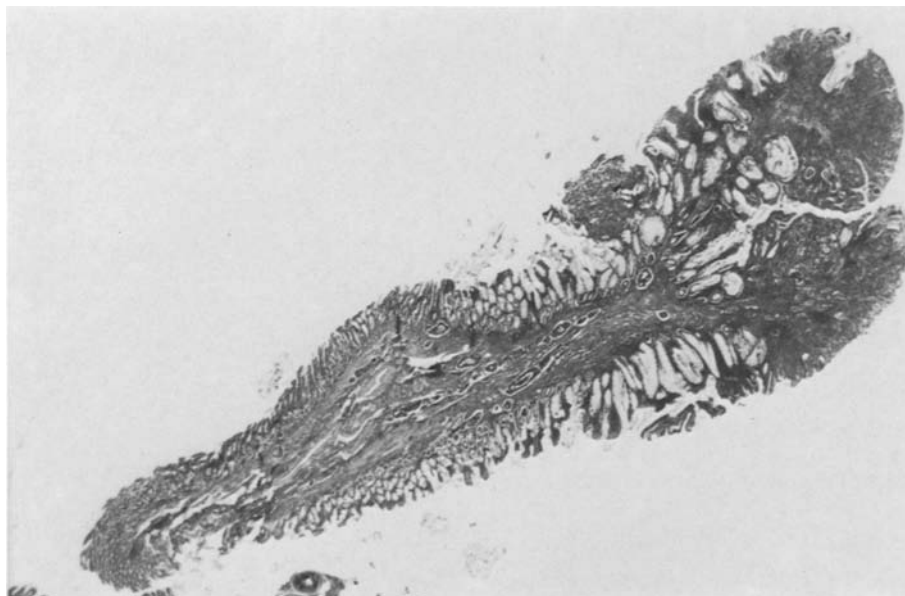


Fig. 1. Whole mount of polyp with carcinoma confined to the head and lymph vessel involvement recognizable in the stalk. H. and E. ($7\times$)

Case report

The patient, a 66 year old woman, was investigated 3 years before her death because of weight loss. A diagnosis of reactive depression was made. Physical and laboratory examination did not yield any positive results and the search for occult blood in faeces was repeatedly negative.

Three years later she consulted again, mainly because of persistent lower back pain. At that time she was in poor general condition and anaemic. Radiological examination strongly suggested the presence of a generalised tumor. Again no occult blood was found in the faeces. No primary tumor could be detected with the diagnostic measures judged adequate to the situation of the patient who died 5 weeks after admission.

The autopsy revealed an adenocarcinoma with metastases in bones, lungs, liver and retro-peritoneal lymph nodes. No evident primary tumor could be detected during gross examination.

A pedunculated single polyp was found at the recto-sigmoidal junction measuring 2 cms from base to top with a head diameter of 0.9 cm (Fig. 1). Microscopical examination of a longitudinal section showed most of the head to be replaced by a poorly differentiated adenocarcinoma (Fig. 2) penetrating, at its deepest point, into the muscularis mucosae. Remnants of a tubular adenoma were clearly recognized (Fig. 3). There was no direct invasion of the stalk by tumor, but several distended lymph vessels in the stalk as well as in the underlying large bowel wall, contained groups of tumor cells (Fig. 4) and the regional lymph nodes showed metastatic tumor.

Discussion

Our conclusion that the carcinoma in the tip of this small pedunculated polyp was in fact the origin of the generalized adenocarcinoma is based

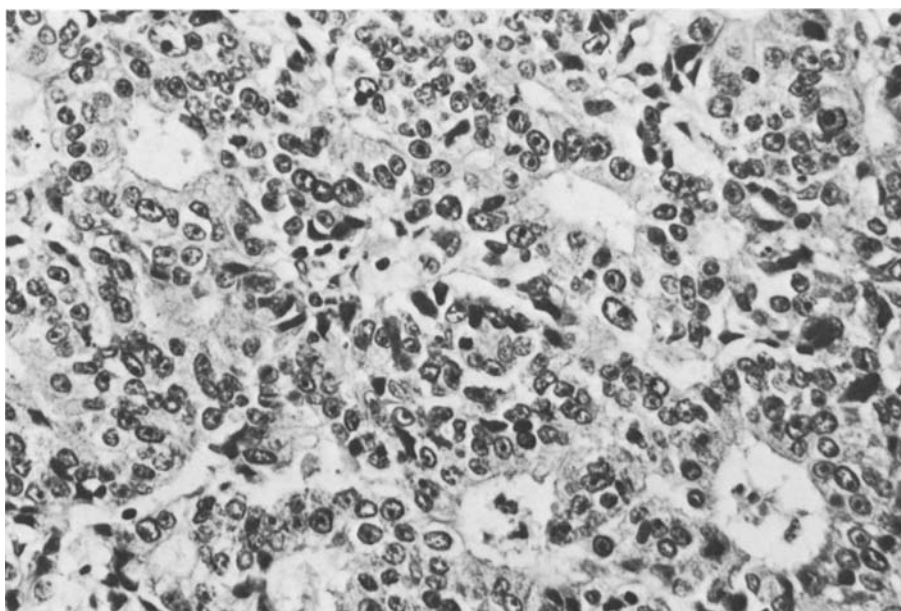


Fig. 2. Poorly differentiated adenocarcinoma in the head of the polyp. H. and E. (320 \times)

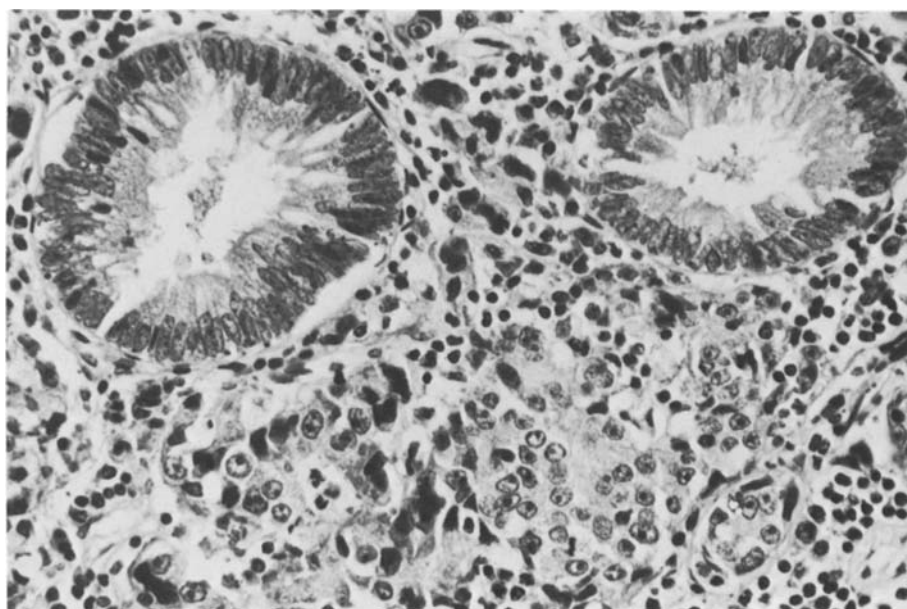


Fig. 3. Remnants of tubular adenoma surrounded by carcinoma. H. and E. (320 \times)

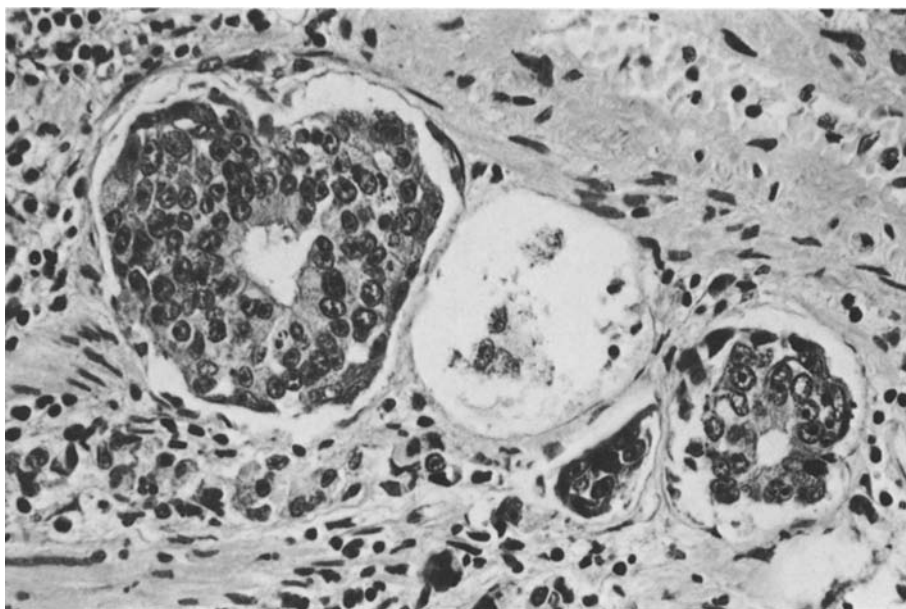


Fig. 4. Groups of carcinoma cells in dilated lymph vessels in the stalk of the polyp. H. and E. (320 \times)

on the fact that (1) it could be traced from the point of origin through the lymph channels to the regional lymph nodes, (2) immunoperoxidase staining for CEA antigen was strongly positive in the tumor of the colon and in the liver metastases and (3) no other primary adenocarcinoma could be detected at autopsy.

The occurrence of metastases from a carcinoma confined to the head of a pedunculated tubular adenoma is a very exceptional event. This can safely be concluded from numerous large series in the literature concerned with the polyp – cancer sequence (Grinnel and Lane 1958; Spratt et al. 1958; Helwig 1959; Enterline et al. 1962; Bigelow and Winkelman 1964; Silverberg 1970; Veidenheimer et al. 1970; Kaneko 1972; Shatney et al. 1974; Coutsoftides et al. 1979; Shinya and Wolff 1979; Sulser et al. 1979; Kodaira et al. 1981).

What is the chance that such tumors will be detected? The patient will seek medical attention only when the tumor is generalized and in this situation the search for a symptomless primary tumor will not, in most cases, be undertaken. The time interval during which such a tumor could be detected by chance or during investigation for other symptoms might be relatively small (Muto et al. 1982). At postmortem examination tiny polyps of colon and rectum are frequently not examined histologically especially if autolytic changes have to be anticipated. As our case demonstrates this search may occasionally resolve the problem of metastasizing adenocarcinoma with no apparent primary tumor at autopsy.

When examining a polypectomy specimen from a pedunculated tubular adenoma with carcinoma confined to the head, should we suspect early

Table 1. Summary of 10 cases of metastasizing carcinoma restricted to the head of pedunculated tubular adenomas

	Age	Sex	Position	Size	Grade of differentiation	Lymph or blood vessel involv.	Metastases to
Bigelow and Winkelmann (1964)	47	m	Rectum	7 mm	Well to poorly differentiated	Involvement of lymph vessels	Regional lymph nodes
Kraus (1965)	75	f	Sigmoid	2 cm	Well differentiated	None	Regional lymph nodes
Manheimer (1965)	62	f	Sigmoid	3 cm	Pictures show moderately well diff. adenoca.	Invasion of vein	Liver
Palacios and Wellmann (1966)	70	f	Sigmoid	15 mm	Pictures show well diff. adenocarcinoma	Questionable lymph vessel involvement	Lung
Lane and Kaye (1967)	67	f	Sigmoid	2 cm	Pictures show moderately well diff. adenoca.	None	Lymph nodes and suture line recurrence after 2 y.
Fenoglio et al. (1973) (2 cases)	58	f	Sigmoid	14 mm	Poorly diff.	Lymph vessel involvement	Regional lymph nodes
	58	f	Sigmoid	3 cm	Partly well, partly anaplastic	Lymph vessel involvement	Regional lymph nodes
Shatney et al. (1975)	60	m	Sigmoid	3 cm	Not stated	Lymph vessel involvement	Regional lymph nodes
Strauss and Pascal (1975)	40	f	Rectum	15 mm	Moderately well differentiated	None	Regional lymph nodes
Author's case	66	f	Recto-sigmoidal junction	9 mm	Poorly differentiated	Lymph vessel involvement	Lymph nodes, liver, lung, bone

metastases? Several authors stress the increased risk of metastases in the presence of lymph or blood vessel involvement or if the tumor shows a high degree of undifferentiation (Shatney et al. 1974; Muto et al. 1975; Eder 1978; Morson and Dawson 1979; Rosai 1981). Muto et al. (1975) reports the observation that small tubular adenomas seldom show atypia but if they show, it is usually of high degree.

In Table 1 we have summarized the findings of 9 cases from sufficiently detailed reports from the literature adding our own case (Table 1). It is interesting to note that only in 4 cases was poor differentiation of the carcinoma clearly identified. No grade of differentiation was given in 1 case and in 3 cases the grade of differentiation had to be judged from pictures which may possibly not be representative of the whole tumor. It seems however, that vessel involvement is a more important sign of early metastases. It could be observed in 7 of the 10 cases and is evidently directly involved in the process of dissemination. The preponderance of the female sex is conspicuous (8:2) but the total number is too small for any conclusion.

Finally the question has to be asked what contribution such an observation can make with regard to the ongoing discussion of cancer arising in the colon and rectum, without previous adenomatous change. The small area of remaining adenomatous tissue in the polyp in our case indicates that it could have easily been totally overrun by the carcinoma and the diagnosis would then have been of a metastasizing polypoid carcinoma. That means that even in tiny polypoid carcinomas the possibility that they have arisen in adenomas has to be considered but it does naturally not mean that this has to be so.

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