

A Giant Villous Adenoma: Case Mimicking Rectosigmoid Malignancy; Radiological Survey to Diagnosis

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Abstract: Villous adenomas are benign lesions, which are difficult to interpret because of their malignancy potential. They have similar radiological findings to malignant lesions. Usually, villous adenomas are asymptomatic although they may cause rectal bleeding like malignant tumours. We present a case of giant villous adenoma to evaluate the contribution of its radiological features including double contrast barium enema, computed tomography and magnetic resonance imaging examinations for the differential diagnosis.

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Introduction

Villous adenomas comprise approximately 10% of all colonic adenomas and are premalignant lesions usually seen after the fifth decade (Teoh et al., 1996). Villous adenomas are usually asymptomatic. Excessive mucus excretion, hypokalemia, diarrhoea and difficulty in defecation are the frequent clinical manifestations of such lesions. Occasionally rectal bleeding can occur (Jatzko et al., 1999). Because of their malignancy, potential and similarity of clinical manifestations to malignant lesions of villous adenoma it is important to set the diagnosis carefully.

The giant adenoma case presented in this article had rectal bleeding whereas ileus and electrolyte imbalance were not present. As the result of preliminary evaluation, which included radiological features of double contrast barium enema, computed tomography (CT) and magnetic resonance imaging (MRI) as well as on the basis of the treatment process the case was considered to be a malignant lesion.

Case report

A 62 year-old-woman attended our surgery clinic suffering from rectal bleeding and constipation progressing during the last few months. Physical examination revealed normal bowel motility and palpable mass lesion in the rectal examination. Double contrast barium enema showed irregular narrowing of the lumen and apple core appearance (Figure 1). With malignancy suspicion multi slice CT was performed. CT revealed a vegetative solid mass lesion originating from colonic wall and protruding to lumen at the level of rectum and sigmoid colon (Figure 2a). The dimensions of the mass lesion were 17×9 cm and caused dilatation of colonic segments proximally. On the other hand, a previously known mass lesion, which had fat densities and calcification within, was detected in the right adnexial region.

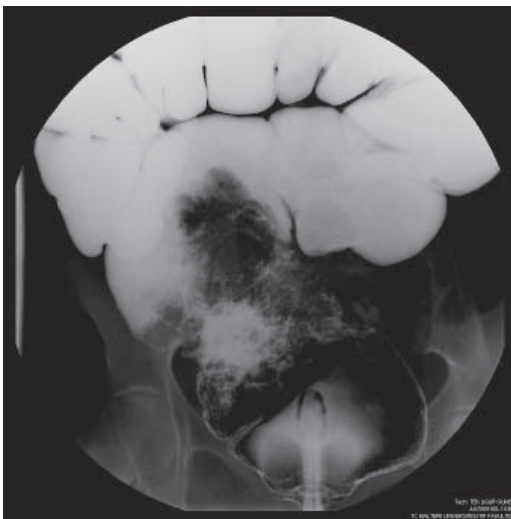


Figure 1 – Double contrast barium enema study shows irregular narrowing in the rectosigmoid colon and reticular surface pattern that may be considered as pathognomic.

MRI had been performed in order to evaluate both lesions. Examination with CT revealed almost the same findings (Figure 2b). By both imaging techniques, the perirectal fat and the regional lymph nodes were appreciated as normal whereas the MR imaging made the final diagnosis for the right sided adnexial mass as dermoid cyst. The colonoscopic examination revealed a giant mass narrowing the lumen of the rectum but the histopathological examination did not revealed any malignancy or displasia. The bowel lesion was totally excised by a surgical intervention and the histopathological diagnosis was made as villous adenoma without high-grade dysplasia (Figure 3a and b). Before the surgical procedure, the bowel lesion was highly suspicious to be malignant. After the histopathological diagnosis the double contrast barium enema was re-interpreted retrospectively and the reticular surface pattern over the lesion was detected which had been considered to a typical finding for such lesions in some previously published articles (Figure 4).

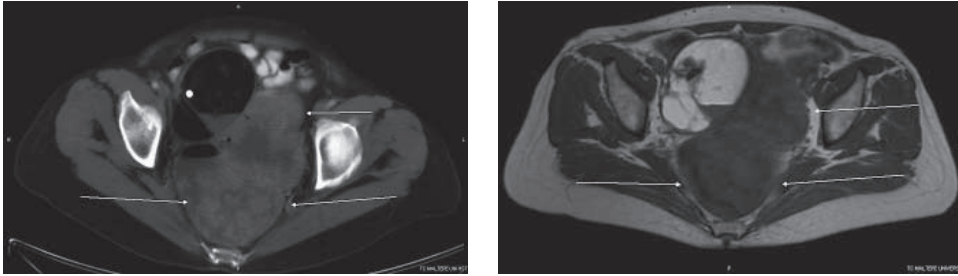


Figure 2 – CT (2a) and MRI (2b) scan showed a vegetation solid mass lesion originating from colonic wall and protruding to lumen at the level of rectum and sigmoid colon (arrows). Additionally a dermoid is detected in the right adnexial region with its fat and calcification content.

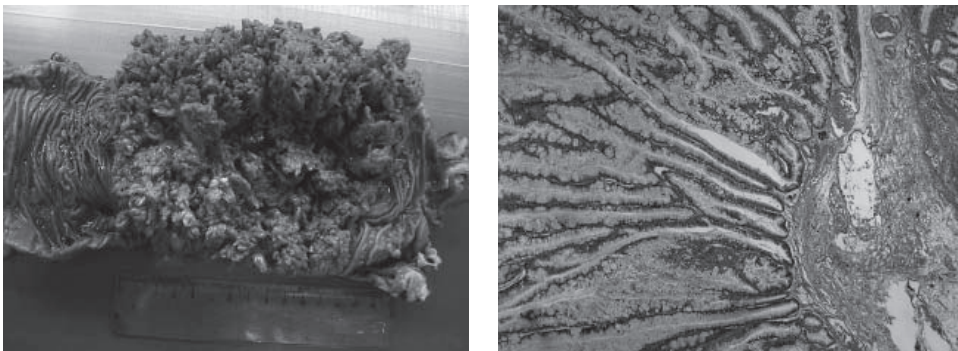


Figure 3 – Macroscopic specimen (3a) of tumour with villous architecture surrounding the lumen annularly but not causing obstruction. Microscopic appearance (3b): The epithelial of the villous structures shows nuclear stratification with minimal dysplastic changes; note that there is no sign of invasion in the lamina propria (Haematoxylin and Eosine X40).

Discussion

Adenomatous polyps are neoplastic lesions, which are divided into three subtypes based on the histological criteria, as follows: tubular, tubulovillous, and villous. Although they are benign, they are the direct precursors of adenocarcinomas and follow a predictable cancerous temporal course unless interrupted by treatment. Although there are exceptions, generally the adenomas encountered in the proximal part of the colon are of a polypoid type whereas the distally located adenomas are of a villous type (Cook and MacLennan, 1969; Teoh et al., 1996). Villous adenomas occur more frequently in the rectum and rectosigmoid segments; however, they may occur anywhere in the colon. According to World Health Organization (WHO) criteria, villous adenomas are composed of more than 80% villous architecture and to define an adenoma as villous, the villous elements should constitute at least the 75% of the tumour mass (Iida et al., 1988). Villous adenomas are generally asymptomatic but may occasionally ulcerate and bleed; uncommonly, they may cause obstruction if they become very large.

Villous adenomas are of concern because of the risk of malignant transformation. Apart from the other adenomas, 75% of villous adenomas measure more than 2 cm in diameter at the detection. They can measure up to 10–15 cm and still remain benign. Various series show that 40% of adenomas lead to invasive/infiltrative malignancy (Yağmurdu et al., 2004). Progressive narrowing of the bowel lumen, ulceration rigidity and irregularity of the bowel wall are the possible malignancy findings. Small lesions that are detected in the above peritoneal reflection increases the malign transformation possibility. Though the largest dimension of the presented lesion was 17 cm, no malignancy was found by the histopathological examination and such situation deserves attention as well as the absence of history of the chronic inflammatory bowel disease (Kovalcik and Szydlowski, 1980).

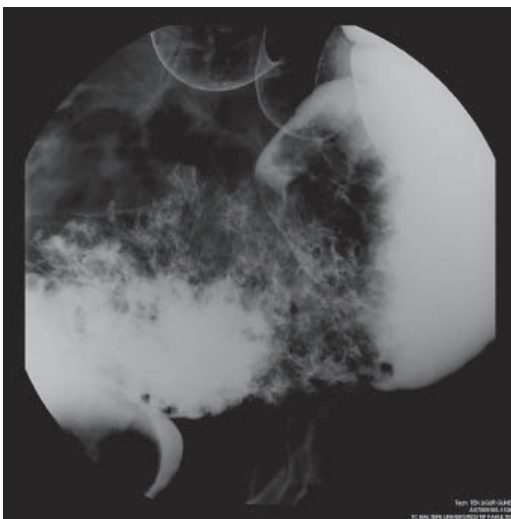


Figure 4 – Double contrast barium enema was re-interpreted retrospectively and the reticular surface pattern over the lesion was detected.

In double contrast barium enema, villous adenomas show the 'lacelike' reticular or granular surface pattern. Post evacuation views are often helpful in showing barium within the interstices of bulky villous tumours. Because of their friable consistency, villous adenomas may change their appearance in different series of the same barium enema examination (Radin and Kiyabu, 1992). In our case, the reticular pattern in barium enema is considered to be the most specific finding, retrospectively.

Conventional CT findings are usually non-specific. Larger adenomas occasionally are found incidentally on CT. They appear as pedunculated or sessile masses with CT attenuation equal to that of soft tissue. They cannot be distinguished from malignant tumours due to their conventional CT attenuation. Although there is no significant superiority to CT, MRI is another imaging modality of choice for loco-regional staging, and it may provide clues to the histological nature of some tumours by means of their staging (Radin and Kiyabu, 1992; Teoh et al., 1996; Rousset and Hoeffel, 2007). As expected; MRI helped to determine the loco-regional evaluation of our case. On the other hand, by determining the fat content MRI gave rise to the definition of the adnexial lesion as dermoid.

Computed tomography colonography is a rapidly evolving imaging procedure in which CT data sets are used to produce two- and three-dimensional images of the colon. A limitation of the current published data on CT colonography is that conventional colonoscopy was used as the reference standard (Iannaccone et al., 2005). Colonoscopy is the most accurate method for detection of polyps and it is the first-line procedure of choice. However, up to 10% of colonoscopic examinations are technically difficult even for experienced colonoscopists (Copel et al., 2007). Difficulties with colonoscopy include patient discomfort, the need of patient sedation, and material risks of complications (e.g. perforation, haemorrhage). Villous adenomas at colonoscopy are usually bulky, sessile, soft, velvety, and friable. However, an accurate pathologic diagnosis is very difficult.

Finally, the differentiation between the giant adenomatous polyps and the malignant lesions of the colon is not always possible with radiological methods. However, one should seek the surface reticular pattern for the villous adenomas in double contrast barium enema. CT and MRI are valuable techniques to determine the peripheral fat planes and the lymph nodes. In the differential diagnosis of mass lesions of colon which have larger dimensions in double contrast barium enema but they do not show signs of perifocal invasion and dissemination to the regional lymph nodes; villous adenomas should be considered.

References

- Cook, J. M., MacLennan, J. C. (1969) Giant villous adenoma of the rectum with severe electrolyte imbalance. *W. V. Med. J.* **65**, 328–329.
- Copel, L., Sosna, J., Kruskal, J. B., Raptopoulos, V., Farrell, R. J., Morrin, M. M. (2007) CT colonography in 546 patients with incomplete colonoscopy. *Radiology* **244**, 471–478.

- Iannaccone, R., Catalano, C., Mangiapane, F., Murakami, T., Lamazza, A., Fiori, E., Schillaci, A., Marin, D., Nofroni, I., Hori, M., Passariello, R. (2005) Colorectal polyps: Detection with low-dose multi-detector row helical CT colonography versus two sequential colonoscopies. *Radiology* **237**, 927–937.
- Iida, M., Iwashita, A., Yao, T., Kitagawa, S., Sakamoto, K., Tanaka, K., Fujishima, M. (1988) Villous tumor of the colon: correlation of histologic, macroscopic, and radiographic features. *Radiology* **167**, 673–677.
- Jatzko, G., Siebert, F., Wolf, B., Karner-Hanusch, J., Kleinert, R., Denk, H. (1999) Combined restorative proctocolectomy and pancreaticoduodenectomy for familial adenomatous polyposis. *Z. Gastroenterol.* **37**, 1109–1113.
- Kovalcik, P. J., Szydowski, T. R. (1980) Localized giant pseudopolyposis of the colon in ulcerative colitis. *Dis. Colon Rectum* **23**, 268–270.
- Radin, D. R., Kiyabu, M. (1992) Multiple smooth-muscle tumors of the colon and adrenal gland in an adult with AIDS. *AJR Am. J. Roentgenol.* **159**, 545–546.
- Rousset, P., Hoeffel, C. (2007) Tumors of the rectum: MRI and CT features. *J. Radiol.* **88**, 1679–1687.
- Teoh, S. K., Whitman, G. J., Chew, F. S. (1996) Villous adenoma of the colon. *AJR Am. J. Roentgenol.* **167**, 1146.
- Yağmurdu, M. C., Alevli, F., Gür, G., Haberal, N., Moray, G., Boyacıoğlu, S., Haberal, M. (2004) A giant villous adenoma case mimicking right colon carcinoma. *Turk. J. Gastroenterol.* **15**, 270–273.