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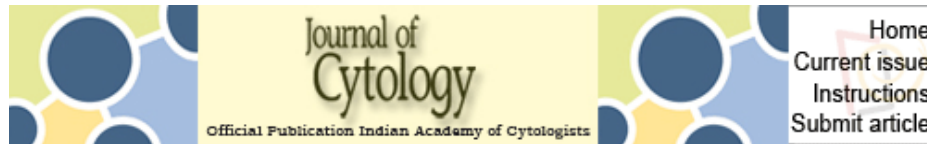
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Anorectal smear in the diagnosis of anorectal adenocarcinoma

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Abstract

The purpose of this case report is to point out the diagnostic value of cytologic smears in patients presenting with anorectal complaints, such as bleeding, pain or discomfort, which may suggest a neoplastic lesion. We present a case of a 64-year-old man with a 3 months' history of anal bleeding and pain during defecation. He was diagnosed as having hemorrhoids and a hemorrhoidectomy was performed. The patient developed an anal stricture postoperatively that required operative dilation. He continued to complain about anorectal pain for 2 months and a subsequent rectoscopy revealed the presence of tumor 5 to 7 cm above the dentate line. The tumor was resected laparoscopically and was reported as an adenocarcinoma. Rectal bleeding recurred 18 months postoperatively and a smear was procured from the anorectal mucosal surface for cytologic evaluation. A definitive diagnosis of adenocarcinoma was rendered based on cytologic and histologic examination of the material. To the best of our knowledge, this is the first case report of anorectal adenocarcinoma diagnosed by cytologic smear in the English literature.

Keywords: Adenocarcinoma, anal cytology, anorectal smear

Introduction

Malignant tumors originating in the anal region may be masked by the concomitant presence of other lesions such as hemorrhoids. Although cytologic examination by anorectal smear is not routinely used to establish the diagnosis in such cases, it can be helpful. We report a case of a 64-year-old man with an anorectal adenocarcinoma where the tumor eluded detection for two and half months. A second tumor in the same area, however, was diagnosed correctly by microscopic examination of an anorectal smear. We discuss the value of such an easy, cost effective, and reliable diagnostic technique in the initial investigation of patients with anorectal bleeding and/or suspicion of a neoplasm.

Case Report

A 64-year-old man presented to the general surgery outpatient clinic with a 3 months' history of anal bleeding and pain during the defecation. Anal examination revealed the presence of hemorrhoids and subsequently the patient was treated by hemorrhoidectomy. Unfortunately, radiological studies, tumor marker blood tests and colonoscopy were not performed prior to hemorrhoidectomy. Postoperatively, the patient continued to suffer from constipation and severe pain during defecation. Therefore, he visited another hospital 1.5 1½ months later, where physical

examination revealed the presence of an anal stricture. Colonoscopy could not be performed at this time either, because of pain, but he underwent operative dilation of the stricture. The patient returned to the general surgery clinic 1 month after the procedure because of persistent pain and a rectoscopy was performed. This procedure revealed a fragile, fungating tumor at the posterior wall of the rectum 5 to 7 cm above the dentate line and obstructing the lumen. Histologic examination of a biopsy from this tumor demonstrated a well differentiated adenocarcinoma. The patient had laparoscopic low anterior resection (LAR), followed by radiotherapy and chemotherapy. Pathologic examination of the resected tumor revealed a 4 × 4 × 3 cm well differentiated adenocarcinoma, invading the muscularis, and extending into rectal subserosa. All surgical margins were free of disease and there was no evidence of metastasis in the regional lymph nodes.

Rectal bleeding recurred 18 months after the operation and the patient returned to the clinic. At this time, an anorectal smear was procured as the initial procedure, using an endocervical brush. The smears were fixed in 95% ethanol and stained with Papanicolaou stain. Cytologic examination of the smears revealed a mucinous and necrotic background in which numerous neutrophils, squamous, and glandular cells were identified. Many of the glandular cells were in the form of sheets of reactive columnar cells with thin cytoplasm and uniform oval to round nuclei. In addition, there were several atypical glandular cells with large hyperchromatic nuclei and thick cytoplasm [Figure 1a]. These cells were either single or in the form of three dimensional clusters, straps, and glands. Cellular strips with nuclear pseudostratification, reminiscent of short “bird tail like” arrangements were also seen [Figure 1b]. Some tumor cells were spindle shaped similar to a high-grade anal intraepithelial neoplasia or squamous cell carcinoma [Figure 1c]. These cytologic findings were interpreted as diagnostic of adenocarcinoma.

Rectoscopy was performed following the procurement of the smear. This revealed a 3 cm ulcero-papillary mass at the level of dentate line. Microscopic examination of the biopsy showed a well differentiated adenocarcinoma, and an abdominoperineal resection was performed. Histologic examination of the resected material demonstrated invasion of the muscularis propria by neoplastic glands [Figure 1d]. Some dysplastic, but not frankly malignant, glands were seen in the mucosa adjacent to the adenocarcinoma. The tumor did not have any continuity with the area of the initial anastomosis, thus hindering the ability to determine if it was a recurrence or a new primary. There was no evidence of involvement of any lymph nodes or perianal soft tissue by the tumor. The patient received postoperative chemotherapy and has been living with no evidence of disease for 17 months after the second operation.

Discussion

Recent reports indicate an increase in the incidence of anal adenocarcinomas, which currently represent up to 26.5% of all anal cancers.[2] The anal canal and uterine cervix share some anatomical features, with squamous and glandular epithelial components separated by a transitional (transformation) zone, where malignancy often originates. Human papillomavirus (HPV) is the major risk factor in the pathogenesis of cancer in both organs.[3,4] Biologic progress of neoplastic lesions of both organs is similar, with identification of a preneoplastic stage in the evolution of invasive squamous cancer. Preneoplastic stages were also observed in cervical glandular lesions, but it is not clear if such early stages can be identified in anorectal adenocarcinomas. The presence of some dysplastic glands around the tumor in our case supports that notion. The similarity between cervical and anal mucosae offers the potential for using exfoliative cytology to screen for anal preneoplastic and/or neoplastic lesions for both squamous and glandular epithelia.

Previous reports supported the usefulness of brush cytology to increase the diagnostic efficacy of colonoscopic biopsies.[5] However, we could not find such a study for anal adenocarcinomas in the English literature. Anal and rectal adenocarcinomas share the same histomorphologic appearances, and it is reasonable to expect similarity in their cytologic features, except for the presence of a squamous cell component in anal smears. The present case showed cytologic characteristics similar to those of rectal adenocarcinomas.[6] Additionally, pseudostratified strips of cells reminiscent of short “bird tail like” arrangements, similar to those reported in endocervical

adenocarcinoma *in situ* were identified.^[1] Spindle shaped tumor cells similar to those of high-grade anal intraepithelial or invasive squamous lesions were also encountered in our case, highlighting the need of vigilance when examining anorectal smears, to avoid misinterpretation.

In conclusion, we report the cytopathologic findings in the first case of anorectal adenocarcinoma diagnosed by anorectal smear. Anorectal smear examination is an easy, non-invasive, and reliable technique to establish the diagnosis of anal and lower rectal adenocarcinomas. Its value should not be underestimated, particularly in view of recent data indicating an increase in the incidence of anorectal adenocarcinoma. Anorectal cytology should be performed to exclude malignancy in patients presenting with anal bleeding, pain, discomfort, or other symptoms that suggest the possibility of a tumor, even if there is an apparent explanation such as hemorrhoids.

Footnotes

Source of Support: Nil

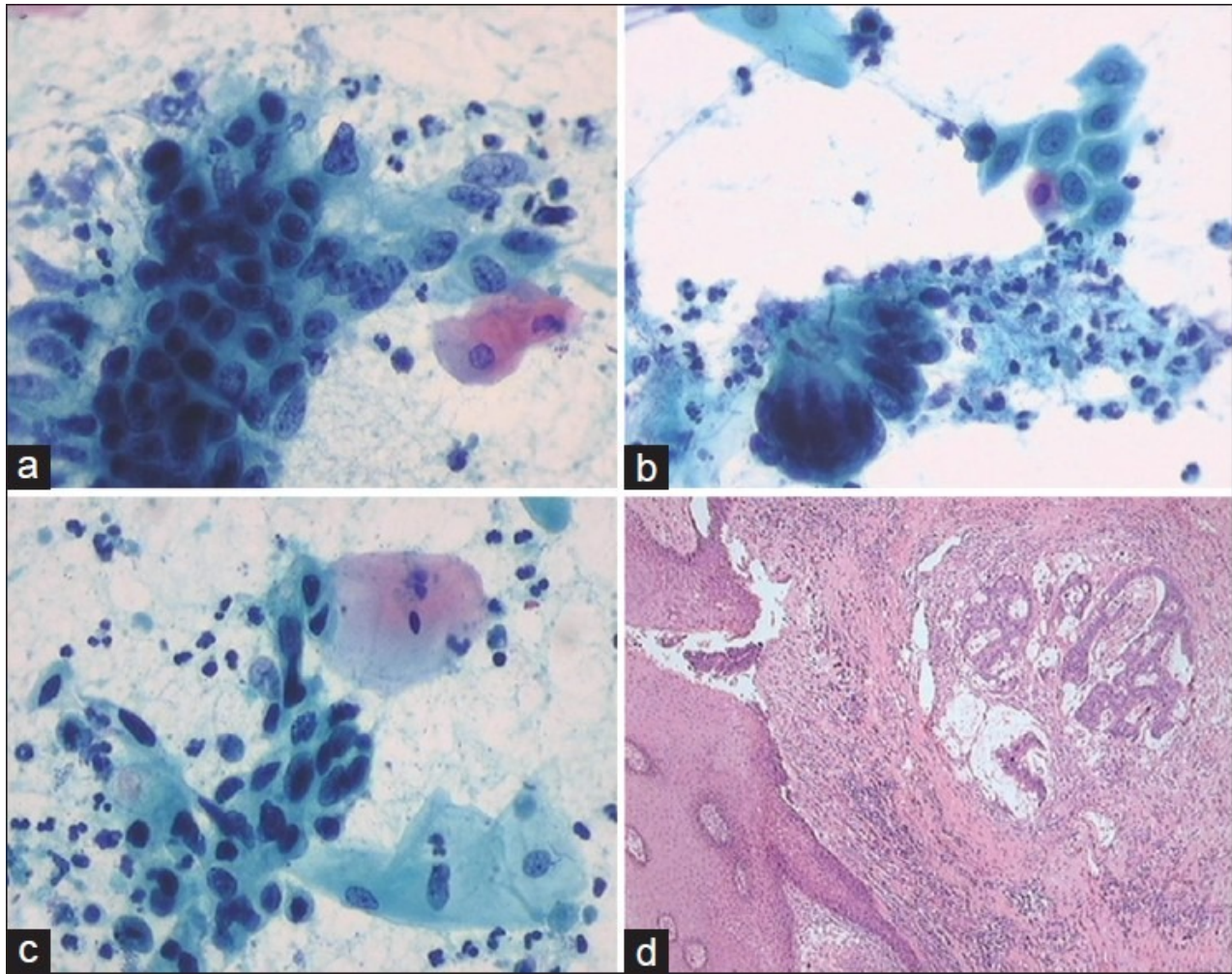
Conflict of Interest: None declared.

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Figures and Tables

Figure 1



(a) A malignant tumor cell cluster (Pap, $\times 400$); (b) The cell group in the left bottom shows nuclear pseudostratified strip reminiscent of short “bird tail like” arrangement (Pap, $\times 400$); (c) Spindle shaped tumor cells (Pap, $\times 400$); (d) Adenocarcinoma in submucosa (H and E, $\times 100$)

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