Rare p16 positive anal cancer in the course of HPV-16 infection

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ABSTRACT

Introduction: The American Cancer Society recorded 9,440 new cases of rectal cancer in the US in 2022. However rectal cancer is still rarer than sigmoid cancer. The most common etiology of anal cancers are squamous cell carcinomas.

Case presentation: A 65-year-old female patient came to the hospital for the diagnosis of pain in the lower gastrointestinal tract. A diagnostic colonoscopy showed numerous polypoid lesions and one nodular approximately 20 mm in size, at the rectal-anus border. The histopathological examination of the material collected during colonoscopy revealed a multilayered squamous epithelium. The tumor was removed. The collected material was sent for histopathological examination, which diagnosed non-keratinized squamous cell carcinoma. Due to the suspicion of HPV infection PCR examination of postoperative anal tumor material was performed for HPV infection, in which the result confirming the presence of highly oncogenic HPV-16 virus was obtained.

Conclusions: The determination of p16 antigen and/or HPV-DNA highly oncogenic should be considered during the diagnostic process of rectal cancers because of close relation to infections with highly oncogenic HPV viruses (especially 16 and 18).

Keywords: BSCC, basaloid squamous cell carcinoma, HPV-16, BCC, basal cell carcinoma

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INTRODUCTION

The American Cancer Society recorded 9,440 new cases of rectal cancer in the US in 2022. However, rectal cancer is still rarer than sigmoid or rectal cancer. Anal cancers can be divided into two main groups. Cancer of the anal margin and anal canal. Anal canal malignancies occur approximately twice as often in women than in men. The incidence peak is between 58 and 64 years of age. The most common histology of anal cancers are squamous cell carcinomas. Neoplasms of a different etiology are less common. Tumors that arise above the line are mainly variants of non-keratinizing squamous cell carcinomas. Non-keratinizing squamous cell carcinoma accounts for up to 80% of anal canal neoplasms [1].

CASE REPORT

A 65-year-old female patient came to the hospital for the diagnosis of pain in the lower gastrointestinal tract. A diagnostic colonoscopy showed numerous polypoid lesions and one nodular approximately 20 mm in size, at the rectal-anus border.

The histopathological examination of the material collected during colonoscopy revealed a multilayered squamous epithelium with moderate dysplasia and hyperplastic polyps. The patient was qualified for elective rectal tumor resection. During surgery, an exophytic tumor was found approximately 1 cm from the anal sphincters. Macroscopically, the tumor was crater-like, ulcerated and bleeding. The tumor was removed. The collected material was sent for histopathological examination, which diagnosed non-keratinized squamous cell carcinoma. The patient was referred for the abdominal cavity and pelvis CT scan with contrast. The study revealed the following metastatic lesions in the liver: lesion in segment II, 20 mm in diameter, two lesions in segment VII, 20 mm and 11 mm in diameter, single lesions up to 4 mm in the left lobe.

The rectal wall in the area of the anal sphincter was nodularly thickened on the left side in the posterior part to 18 mm and on the right side to 12 mm. The thickened rectal wall is adjacent to the levator ani muscle. The fatty planes were obliterated, which made it impossible to exclude infiltration. In the adipose tissue which surrounded the rectum were visible a nodule about 9 mm in diameter on the right side and a similar focus about 8 mm slightly above it. Due to the suspicion of HPV infection, the patient underwent a gynecological examination with cervical smear samples in which no HPV virus was found. In further diagnostics, PCR examination of postoperative anal tumor material was performed for HPV infection, in which the result confirming the presence of highly oncogenic HPV-16 virus was obtained.

The histopathological examination of the liver lesions revealed metastasis of squamous cell carcinoma. Fig. 1, 2

Figura 1. Methastasis to liver of squamous cell carcinoma, HE staining, magn. X40
The histopathological examination of the material collected during colonoscopy revealed a multilayered squamous epithelium with moderate dysplasia and hyperplastic polyps. The patient was qualified for elective rectal tumor resection. During surgery, an exophytic tumor was found approximately 1 cm from the anal sphincters. Macroscopically, the tumor was crater-like, ulcerated and bleeding. The tumor was removed. The collected material was sent for histopathological examination, which diagnosed non-keratinized squamous cell carcinoma. The patient was referred for the abdominal cavity and pelvis CT scan with contrast. The study revealed the following metastatic lesions in the liver: lesion in segment II, 20 mm in diameter, two lesions in segment VII, 20 mm and 11 mm in diameter, single lesions up to 4 mm in the left lobe.

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CONCLUSION

One of the SCC subtypes is basaloid squamous cell carcinoma (BSCC), which is also known as Cloacogenic Carcinoma. It is estimated that BSCC constitutes up to 40% of all SCC neoplasms located in the anal canal [2]. Most often, BSCC is found in glandular organs such as upper digestive tract, respiratory tract and anal canal [3]. Despite the morphological differences, the non-keratinized SCC and the basoidal variant have identical clinical, therapeutic and prognostic features [1]. The diagnostic path should start with an analysis of symptoms that often resemble those of hemorrhoids [4]. The first examination should be a rectal examination. The next step is endoscopic examination and collection of specimens for microscopic examination. In microscopic examination, basal cell carcinoma (BCC) is very similar to BSCC, therefore the assessment of immunohistochemical markers in the differentiation of these two neoplasms is very helpful [5]. Basal cell carcinoma in immunohistochemical studies shows positive expression for the markers bc12 and Ber-EP4, which in the case of BSCC is variable. On the other hand, CDKN2A and SOX2 are positively expressed in BSCC and are not observed in basal cell carcinoma (BCC) [6]. After diagnosis of rectal SCC,
a series of tests should be performed to determine the severity of the tumor. Basic diagnosis after diagnosis of anal cancer should include MRI or CT of the pelvis, CT of the lungs and abdomen, and gynecological examination of women. Then, a broader diagnosis should be considered, including tests for the presence of HIV infection, p16 antigen and/or HPV-DNA as well as PET-CT [4]. BSCC in this localization is strongly associated with infection with highly oncogenic HPV, as in our case.

CONCLUSION

The histopathological examination with the assessment of immunohistochemical markers is the most important during the diagnostic process of BSCC with localization in the anal canal. In the course of further BSCC diagnosis of the anal canal, the determination of p16 antigen and/or HPV-DNA highly oncogenic should be considered, as this neoplasm is closely related to infections with highly oncogenic HPV viruses (especially 16 and 18).

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Conflicts of interest

The authors have declared no conflict of interest

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