Anal Canal Squamous-Cell Carcinoma
In Situ, Clearly Demonstrated by
Indigo Carmine Dye Spraying

Report of a Case

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To our knowledge, there has been no report of the use of indigo carmine dye spraying for the diagnosis of intraepithelial neoplasia. An asymptomatic 58-year-old female was referred to our hospital with a diagnosis of squamous-cell carcinoma in the anal canal. After indigo carmine dye spraying the margin and surface appearance of the lesion could be clearly defined. The lesion was completely removed by transanal resection. Final histologic diagnosis was squamous-cell carcinoma in situ with koilocytosis. Our case suggests that indigo carmine could be useful for the diagnosis of intraepithelial neoplasia. [Key words: Anal canal squamous-cell carcinoma in situ; Anal intraepithelial neoplasia; Indigo carmine]

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We present a case of anal canal squamous-cell carcinoma in situ, whose margin and surface appearance could be clearly demonstrated by indigo carmine dye spraying.

REPORT OF A CASE

An asymptomatic 58-year-old female was referred to our hospital with a diagnosis of squamous-cell carcinoma in the anal canal. On digital examination, no abnormality was detected in the anal canal or the lower rectum. At colonoscopy, retroversion of the endoscope in the lower rectum revealed an ill-defined, flat, elevated lesion at the dentate line. After indigo carmine dye spraying, the margin and the surface appearance of the lesion could be clearly defined (Fig. 1). The lesion was 2 cm in diameter and the surface was papillary. Histologic examination of biopsy specimens led to a diagnosis of nonkeratinized squamous-cell carcinoma.

Transanal resection was performed (Fig. 2), and a small satellite lesion was found near the main lesion and also removed. Final histologic diagnosis of the main lesion was squamous-cell carcinoma in situ (CIS) with koilocytosis, suggesting infection with human papillomavirus (HPV) (Fig. 3). That of the satellite lesion was high-grade anal intraepithelial neoplasia (AIN). The surgical margins were negative. HPV6 within the main lesion was identified by the polymerase chain reaction method.

DISCUSSION

AIN and anal CIS are increasing among the population with human immunodeficiency virus or other immunodeficiency states.² They are considered to be precursors of invasive squamous-cell carcinoma and be caused by oncogenic HPV, namely HPV16 or HPV18. In our case the polymerase chain reaction method detected HPV6, which has been mainly identified within benign condyloma or low-grade AIN.

For the diagnosis of AIN, anal cytology, anoscopy, and anal colposcopy have been practiced. Acetic acid may help to distinguish lesions with the latter two.³ However, it is possible that lesions are so small that they can not be detected, even with the magnification of a colposcope.⁴

In gastrointestinal endoscopy, indigo carmine has been used to enhance the margins of diseased area and the surface morphology. ⁵ In the colon and rectum indigo carmine can help to distinguish the margins of ill-demarcated lesions, such as villous adeno-
mas, and detect minute, flat, or depressed tumors, which may be overlooked in ordinary views.

Although there is no report, to our knowledge, describing the use of indigo carmine for the diagnosis of AIN, our present experience suggests great usefulness of indigo carmine dye spraying for detection of the margins of lesions. In this case it also allowed a small satellite lesion to be detected easily. When local excision is planned for high-grade AIN or CIS, it is very important to recognize the extension of the tumor, so that a negative margin can be achieved. Moreover, we should be careful not to overlook other lesions, because anogenital HPV-associated lesions are well known to arise multifocally.
CONCLUSION

Our case suggests that indigo carmine could be useful for the diagnosis of AIN or anal CIS. Spraying indigo carmine may aid in complete resection, without recurrence in the future.

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