



A case of anal condyloma acuminatum observed by endocytoscopy

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Condyloma acuminatum (CA) is one of the most common sexually transmitted diseases caused by human papillomavirus (HPV) infection. This virus causes not only inflammation-induced benign squamous hyperplasia, as in anal CA, but also anal intraepithelial neoplasia, which is a precursor of anal squamous cell carcinoma (SCC). Therefore, observation of anal CA with various modalities can help us decide on a treatment strategy and prevent anal SCC. Here,

we report a case of anal CA, for which endocytoscopy was used to provide the ultra-high-magnification images at cellular resolution in real time with manipulating zoom lever after staining.¹ Growing evidence supports the utility of endocytoscopy for histologic prediction in the GI tract.²⁻⁴

CASE PRESENTATION

A 42-year-old woman with no medical history presented with hematochezia and constipation. She had no abnormal laboratory findings and tested negative for human immunodeficiency virus antibodies.

Routine rectal retroflexion during colonoscopy revealed a 20-mm flat lesion with marginal whitish and central red-dish areas (Fig. 1). Narrow-band imaging showed that the surface of the lesion was covered with papillary structures and that the central area was rich in microvessels and thus darker than the marginal area (Fig. 2A). On magnifying narrow-band imaging, these irregular microvessels appeared in various forms, such as dots, coils, and elongated loops resembling intrapapillary capillary loops⁵ observed in esophageal neoplasia (Fig. 2B). Endocytoscopy was performed for ultra-high-magnification observation of the lesion and adjacent mucosa.

PROCEDURE

To prepare for endocytoscopy (CF-H290ECI, Olympus, Tokyo, Japan), cell nuclei and cytoplasm were stained with

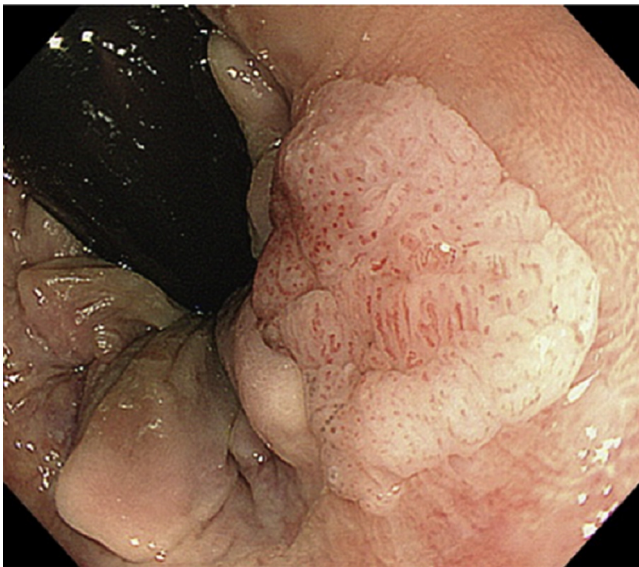


Figure 1. Conventional retroflexed image of a 20-mm flat anorectal lesion.

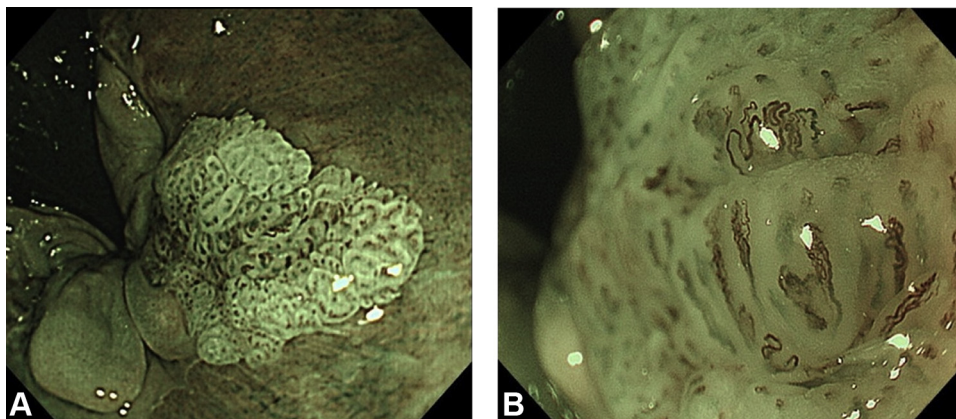


Figure 2. A, Conventional narrow-band imaging. B, Magnifying narrow-band imaging focusing on the lesion.

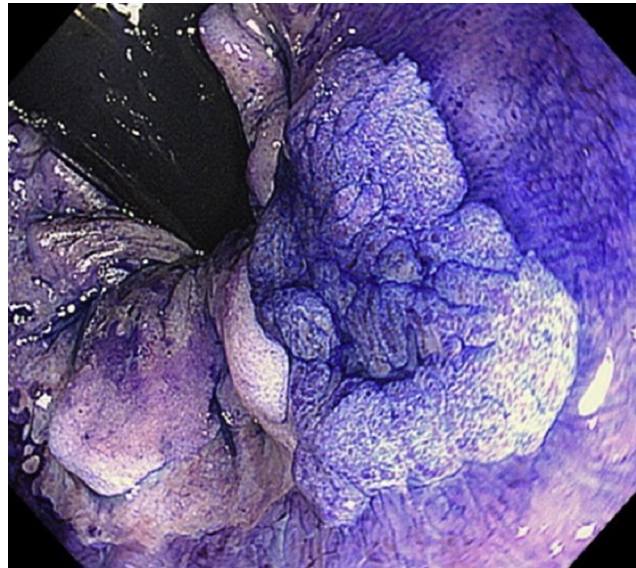


Figure 3. The lesion stained with 1% methylene blue and 0.05% crystal violet.

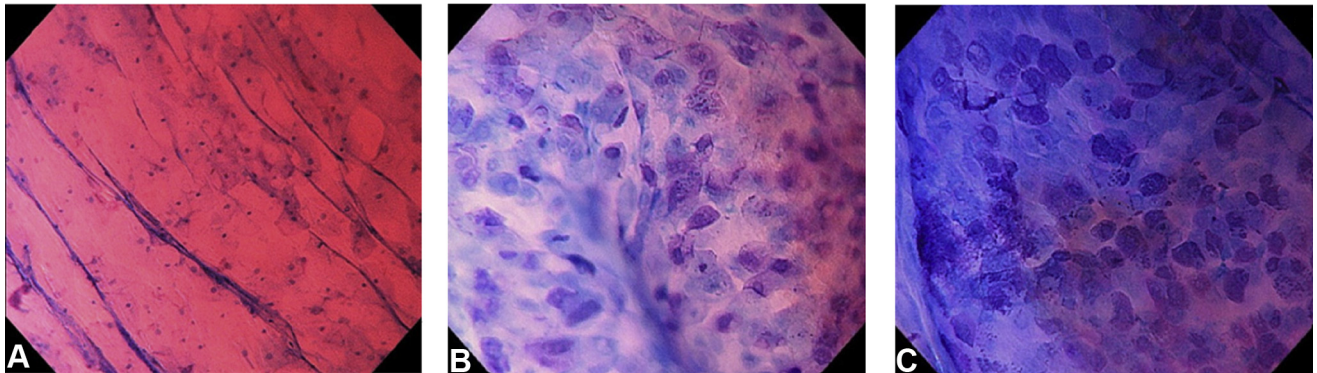


Figure 4. **A**, Endocytoscopic images of the surrounding normal mucosa. **B**, The marginal lesion. **C**, The central lesion.

1% methylene blue and 0.05% crystal violet, respectively (Fig. 3). After the endocytoscope lens reached the target area, real-time cellular images could be obtained at 520-fold magnification (Video 1, available online at www.giejournal.org). Whereas cell nuclei appeared as regularly arranged dot-like structures in the normal anal canal mucosa (Fig. 4A), they were found to be enlarged and dense in the tumor cells (Fig. 4B). As we approached the center of the lesion, cell nuclei became higher in density and more irregular in shape (Fig. 4C), which led us to suspect that the lesion was anal SCC. Hence, the endoscopic submucosal dissection technique was applied to resect the lesion en bloc as a curative treatment.

OUTCOME

In the marginal area, histopathological analysis indicated thickened squamous epithelia with koilocytosis, suggesting

HPV infection (Fig. 5A). Furthermore, in the central part of the focal area, proliferation of metaplastic squamous cells and nuclear atypia were evident in the upper and lower thirds of the epithelium, respectively (Fig. 5B). Finally, this lesion was diagnosed as CA with low-grade anal squamous intraepithelial neoplasia, according to the World Health Organization classification.⁶

DISCUSSION

We assumed that endocytoscopic findings for anal CA would be similar to those for esophageal lesions because esophageal lesions also arise from squamous epithelial cells. In esophageal lesions, larger and denser cell nuclei on endocytoscopy are reportedly indicative of esophageal SCC.⁷ In the case presented here, we observed larger and denser cell nuclei and accordingly suspected anal SCC; however, the lesion was histopathologically diagnosed

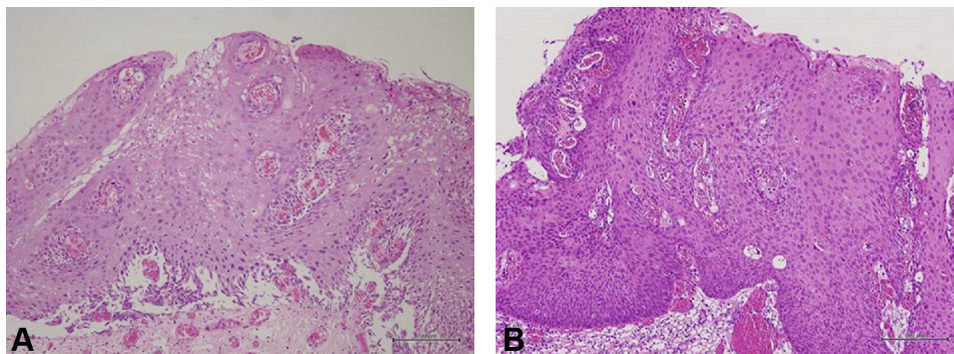


Figure 5. Histopathological images of anal condyloma acuminatum in (A) the marginal area and (B) the central area.

as CA with low-grade anal squamous intraepithelial neoplasia. This suggests that the endocytoscopic detection of irregular cell nuclei in anal CA might not necessarily signify anorectal cancer. In other words, chronic inflammation as a result of defecation stimulation and HPV infection might lead to the same findings. Future studies are needed to validate these endocytoscopic findings about anal CA and SCC, which will establish the utility and accuracy of those findings.

In conclusion, this is the first study reporting the use of endocytoscopy for examining anal CA, an examination that revealed cells with enlarged nuclei in anal CA.

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviations: CA, condyloma acuminatum; SCC, squamous cell carcinoma; HPV, human papillomavirus.

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