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Rectal Cytology by an Improved Replica Method

Klaus Anselm, M.D.*, Victor Lawoyin, M.D.* and Jerry Blonsky*

The replica method aiding in rectal cytology is described and a modification of the slide applicator is recommended. Used in 75 patients, this replica method is a safe and useful tool for the diagnosis and followup of inflammatory bowel disease as well as for research purposes.

Rectal cytology has been in use for many years in evaluation and diagnosis of proctosigmoid disease.1,2 Its use was facilitated with the introduction of the replica method by Anthonisen.3 This method comprises the use of a glass disc, mounted on a cork, then brought in contact with the rectal mucosa during sigmoidoscopy. Difficulties in mounting and dismounting with occasional breakage of slides led us to develop an improved slide applicator.

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Method

The applicator (Fig 1) consists of two parts, the round hub and the obturator with a flat surface. A 15 mm round cover slip is placed on this surface and the hub is then clipped over it, thus preventing loss or breakage of the glass slide. The applicator is inserted into the Welsh-Allyn proctosigmoidoscope and held against the rectal mucosa for approximately five seconds. After removal the cover slip is sprayed with a water soluble fixative and allowed to air dry. The slip is stained in alum hematoxylin and
Figure 2
Granulocytes and round cells in a patient with active ulcerative colitis.
Figure 3
Epithelial cells and scarce granulocytes in a patient with ulcerative colitis in clinical remission.
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eosin Y and mounted using Canada balsam medium.

Seventy-five patients were examined, 15 of whom had inflammatory bowel disease involving the rectum.

Results
On slides obtained from patients with active proctitis, we saw granulocytes and round cells in clusters or dense sheets (Fig 2), while slides obtained from patients in clinical remission with normal or near normal proctoscopic appearance had only few leukocytes with or without epithelial cells (Fig 3). Patients without intestinal disease had only intact or autolyzed epithelial cells with or without mucous and bacteria.

Discussion
The new slide applicator has been effective and safe. Immediate staining and microscopic examination is made possible. Furthermore, multiple replicas can be obtained during one sigmoidoscopy.

The role of the replica method in assessing bowel disease has been described. Particularly the discrepancy between the normal sigmoidoscopic appearance of the mucosa of patients in clinical remission and the persistent inflammatory exudate obtained by the replica method has been emphasized.

A more thorough evaluation of this method in patients with a variety of bowel diseases is presently underway. In addition, we anticipate its useful application to the detection of carcinomas applying the Papanicolaou staining technique and to immunohistochemical studies in patients with inflammatory bowel disease.

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REFERENCES