

THE BOLEN TEST FOR CANCER*

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A SIMPLE screening test to find patients with cancer would be a valuable diagnostic aid. Bolen¹ has proposed such an examination as a routine office procedure. In this article the authors show that the Bolen

test was accurate in only 68.4 per cent of 303 patients studied for cancer. This test therefore is not sufficiently accurate for use as a screening examination for cancer by the average physician.

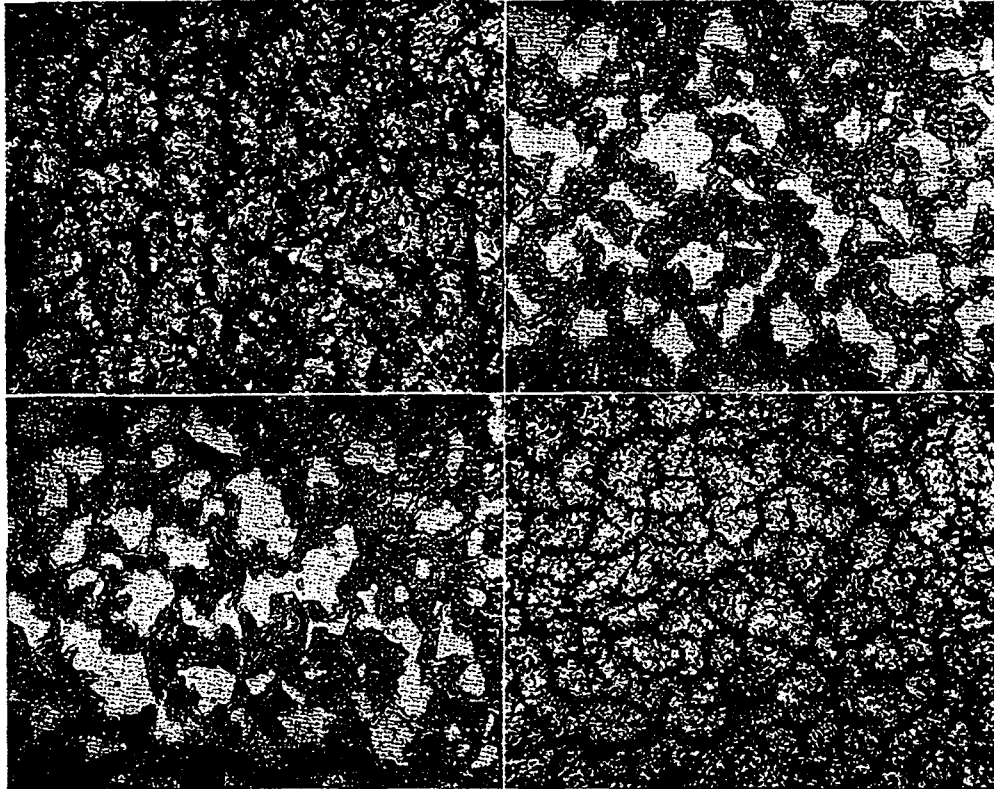


FIG. 1. Normal clot retraction in a patient with hemorrhoids.

FIG. 2. Positive clot retraction in a patient with chronic rheumatoid arthritis. This pattern is indistinguishable from that of Figure 3.

FIG. 3. Positive clot retraction in a patient with bronchogenic carcinoma.

FIG. 4. Normal clot retraction in a patient with carcinoma of the stomach. This pattern is indistinguishable from that of Figure 1.

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In the Bolen test several drops of blood, obtained from the tip of a finger, are placed on a glass slide and allowed to dry. Examination is done with the low power of the microscope. A normal pattern shows an abundance of fibrin in an even mosaic field without vacuoles. Rouleaux formation is present but agglutination of the red blood cells is not seen. An abnormal pattern shows a decreased amount of fibrin and vacuoles in the field. Rouleaux formation is not present but agglutination of the red blood cells is seen.

Norman and Slicker,³ using the Bolen test in over 350 patients, found the examination to be 97 per cent accurate. Bolen² reported 100 per cent accuracy in a group of 337 patients with benign lesions and 96.5 per cent in 198 patients with proven cancer. The statistics are better than those obtained by more complicated and expensive diagnostic procedures.

The blood of 303 patients admitted to the Veterans Administration Hospital was prepared and examined. Disagreement as to whether the test indicated a benign or malignant disease existed in fifty-four instances or 17.8 per cent. On several occasions one or more drops showed a typically normal pattern while

the remainder demonstrated a positive pattern. All drops were of similar thickness. Differences of opinion were resolved by re-examination and discussion. Of 303 patients 228 did not show clinical evidence of cancer while seventy-five had malignancy as proven by biopsy or autopsy. In the 228 patients with benign disease the test was right in 172 (Fig. 1) and wrong in fifty-six (Fig. 2). This is an error of 24.5 per cent. In the seventy-five patients with proven cancer the test was right in thirty-five (Fig. 3) and wrong in forty (Fig. 4). This is an error of 53.3 per cent. In the group of 303 patients the test was right in 207 and wrong in ninety-six for an accuracy of 68.4 per cent. This is much less than can be expected from clinical examination. The high percentage of false positives and false negatives is disturbing in a test recommended for a screening purpose.

REFERENCES

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