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The Hecht-Weinberg-Gradwohl reaction in syphilis.

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A comparative study was made of the results obtained by the Hecht-Weinberg-Gradwohl and a modified Wassermann technique in the serum diagnosis of syphilis during the routine examination of a general group of hospital patients. An acetone-insoluble antigen, as advised by Gradwohl, was used in both methods, and in addition, a cholesterinized antigen with the Wassermann method. In performing the Hecht-Weinberg-Gradwohl test, the procedure as outlined by Gradwohl was closely followed. The Wassermann technique was that which had given satisfactory results in St. Luke's Hospital during the past few years. Two series of tests were undertaken; the first series included 50 cases, the second 100 cases. In each instance the "hemolytic index" as defined by Gradwohl, was carefully determined, and his test was performed only on those sera which showed an index of 4 or greater, since he states that the test possesses no advantage over the Wassermann method when the index is 3 or lower. The first series showed only seven (14 per cent.) sera which filled that requirement. Since the erythrocytes used in this series were from an old laboratory sheep, it was thought that possibly its blood cells had become more resistant

to hemolysis than normally, so a second animal, which had been bled but little previously, supplied the erythrocytes for the second series of 100 cases. In this series, 34 per cent. of the sera showed the natural hemolytic index desired. All sera were tested either shortly after the blood was drawn, or within 24 hours; the latter were kept in the icebox until used.

Of the seven suitable sera in the first series, only one gave a positive reaction with both methods. Another gave a questionable positive reaction with the Hecht-Weinberg-Gradwohl method, while with the Wassermann method, a negative resulted with the acetone-insoluble antigen, but a low positive with the cholesterinized antigen. The remaining five sera gave negative reactions by both methods. In the second series of tests, 34 were found of sufficiently high hemolytic value to be used advantageously in comparative tests. Of these, 28 gave negative results with both methods. Five sera gave positive reactions with the Hecht-Weinberg-Gradwohl technique; four of which gave similar reactions by the Wassermann method, and one was negative. The latter was a serum from a treated luetic patient with which the Hecht-Weinberg-Gradwohl test gave only a low positive (+) reaction; however, the Wassermann method gave a doubtful ($\pm$) reaction using the cholesterinized antigen with this serum. The Wassermann method also gave a strongly positive (++++) with the cholesterinized antigen in one case where the acetone-insoluble antigen gave a negative result, as well as the Hecht-Weinberg-Gradwohl test. This patient gave a history of a syphilitic infection ten years previously, and had undergone early treatment. All sera in the above series which gave positive reaction in any of these tests came from patients whose history supported the findings, except in one case, where it was quite suspicious.

While our series of tests are too small for definite conclusions, they suggest that possibly under certain circumstances, the Hecht-Weinberg-Gradwohl test might be superior to the Wassermann method when an acetone-insoluble antigen is used. But on the other hand the latter method with a cholesterinized antigen probably gives better results with known infected cases.