

cancer is. Then they urge that we examine the patients carefully. I think all this is very good precept and practice; but many men who have been practicing for years never examine patients carefully. They do not take postgraduate medical courses, and they were not taught in the undergraduate schools the method of making a routine examination. The only way that we can hope to succeed in this, I believe, is to have courses of instruction in enteroproctology introduced into the undergraduate medical schools and make this a compulsory part of the curriculum, so that a student may become familiar with the average pathology of the bowel and know how to use the ordinary instruments of precision. Then, if he cannot interpret the findings, he will, at least, have the wisdom to confer with some one competent to make the diagnosis before the disease has progressed to a stage where it is beyond relief. Until that time the entire profession will not receive adequate instruction, cancer of the bowel will not be recognized early, nor will the patient receive the benefit of early operation.

DR. WILLIAM M. BEACH, Pittsburgh: I should like to ask Dr. Lynch the tenure of life following these cases.

DR. DWIGHT H. MURRAY, Syracuse, N. Y.: The microscope does not tell us the histologic factor. This may seem strange. I will explain by saying that in the examination of the cancer tissue removed, the pathologist will say that all of the growth has been removed and that the microscope does not show any cancerous tissue on the outside of the growth. In my opinion the microscope cannot show tissue which has been invaded and which has not yet shown pathologic changes that the microscope will reveal. I saw this thoroughly demonstrated in a case in which operation was performed a year ago.

DR. JOHN L. JELKS, Memphis, Tenn.: I am so pessimistic with regard to cancer of any part of the alimentary tract that I feel almost inclined to offer a resolution that it would be the sense of this assembly that late radical operations for cancer of the stomach and intestines are hardly warranted. I have operated and operated for cancers of the stomach, colon and rectum and the patients are all dead, or, if not already dead, going to die a little bit later of cancer of the liver. What is the use? I think it is best to turn the patients down. A number of men have said much could be done if we have "early cases." In the "early cases" the patients will not dream of having an operation and in the late cases we should not dream of operating.

DR. LOUIS J. HIRSCHMAN, Detroit: I hope this paper will go out as a message from the enteroproctologist to the general surgeon and everybody doing surgery, to mark the passage of mutilating operations for the excision of a cancer; that the day of the sacral anus is over. I think the time has arrived when we must tell the profession at large that if they cannot do anything else than colostomize and implant the anus anywhere but at its normal site, they had better do nothing.

DR. JEROME M. LYNCH, New York: I am really sorry that my friend Dr. Jelks feels as he does; it is very unfortunate, for Dr. Jelks has many friends and a large following and the result will be that a great many patients with cancer who should be operated on will not be operated on. The statistics of Mayo and other men show that a great deal has been done in cancer.

Dr. Beach asked me for the tenure of life in these cases. Twenty-six per cent. of the patients are alive after three years (all these statistics will be published); two or three over sixteen years. When the average patient comes for operation he is over 50, and if he lives sixteen or seventeen years, he is going about the limit. So far as I can see, the results are very encouraging, and notwithstanding the pessimistic view taken by some surgeons, I shall still continue to perform these operations, and it will just mean holding the same position now that Samuel Sharpe held in 1820. Then he said, "Some men are so pessimistic about operation for cancer that they would rather let the patients die. In my own personal experience I have saved so many patients that I shall still continue to operate." It is almost 100 years since that time and we have the same obstructive pessimism to contend with.

## MIXED INFECTION WITH THE PNEUMOCOCCUS IN EPIDEMIC MENINGITIS \*

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In a recent communication, Netter and Salanier<sup>2</sup> report twenty-two instances of epidemic meningitis in which pneumococci as well as meningococci were found in the spinal fluid. These cases of mixed infection exhibited all the symptoms of meningococcic meningitis, but did not respond to serum treatment and terminated fatally. It is my purpose to call attention to the importance of these observations, and to report an example of this type of meningeal infection.

W. D., a boy, aged 7 months, entered the Cook County Hospital, Sept. 28, 1917, with all the physical signs of meningitis. According to the mother, the illness began suddenly two days before with convulsions, vomiting, stiffness and retraction of the neck, and a staring expression of the eyes. Otherwise the history was negative. The noteworthy physical findings were blindness, marked opisthotonos, orthotonus, and a positive Kernig's sign. The temperature was 103 F. and the pulse rapid and weak.

The spinal fluid was under increased pressure, opalescent, and contained 1,000 cells per cubic millimeter, 98 per cent. of which were of the polymorphonuclear type. Gram-positive and gram-negative intracellular and extracellular diplococci were present in the stained smears. The urine contained a trace of albumin and an occasional leukocyte, and the Wassermann test was negative. During the twenty days in the hospital, 185 c.c. of antimeningococcus serum were given intraspinally with no results. The temperature remained high and the child gradually became weaker and died, Oct. 18, 1917. A necropsy was not made.

During the course of the disease two bacteriologic examinations of the spinal fluid were made. In each instance a gram-negative and a gram-positive diplococcus were found in the cultures. The gram-negative organism had all the morphologic and cultural characteristics of the meningococcus, and was agglutinated by a polyvalent antimeningococcic serum in a dilution of 1:800. The gram-positive diplococcus was found to be a typical pneumococcus of Group I type. In the plate cultures of the spinal fluid in both instances, the meningococcus colonies were more numerous than the pneumococcus colonies. The spinal fluid had a faint greenish tint, and at no time was markedly purulent. Precipitin tests of the spinal fluid, in which the specific serums for both organisms were used, yielded negative results.

These observations emphasize the importance of frequent cultural examinations of the spinal fluid in all cases of epidemic meningitis, especially those in which antimeningococcus serum does not prove efficacious. Furthermore, they indicate that mixed infection may occur in meningococcic meningitis as in other infectious diseases, and exert an unfavorable influence on the clinical course. In the instance of mixed pneumococcus and meningococcus infection, combined serum treatment, as advocated by Netter, would be indicated. In regard to the general significance of this new observation in epidemic meningitis, it is sufficient to say that the importance of mixed infection in acute infectious diseases cannot be overestimated. The presence of two virulent organisms in the same pathologic lesion must not be neglected on the basis that one is a secondary invader; the activities of each organism must be reckoned with in the treatment.

\* From the Memorial Institute for Infectious Diseases.

1. Netter and Salanier: Bull. et mém. Soc. méd. d. hôp. de Paris, 1917, 41, 789.