A NEW PHASE OF SERUM THERAPY. A NEW SERUM FOR USE IN MIXED INFECTIONS.*

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At the time when I read my first paper before the Jackson County Medical Society, in 1895, I made a statement that if we could only get an antitoxin which would combine the anti-streptococcic and anti-diphtheritic serums we would have the remedy, sine qua non, in mixed infections. Close observation and repeated cultures for a number of years convinced me that most of our cases of diphtheria were due to mixed infections, especially by the streptococcic germ; and while we succeeded in conquering the infection of the Loeffler germ by the intelligent use and early administration of full doses of diphtheria antitoxin, we did not combat the septic infection caused by the streptococcic germ; hence some form of sepsis or suppuration appeared, after all. No doubt all membranous deposits in the pharynx and larynx are not purely diphtheritic, and sometimes we find a prevalence of streptococci.** The angina of scarlet fever with its membranous deposits is always the result of a mixed infection, but frequently the bacilli of diphtheria are present, though not always. The unsatisfactory action of Behring's antitoxin in these cases made me investigate, and I found that the swollen glands in the neck, the ear trouble, the nasal trouble, etc., were septic in character, produced by pyogenic germs, streptococci in abundance, and anti-streptococcic serum alone did not produce the desired effect.

Correspondence followed with the reliable house of Parke, Davis & Co., of Detroit, Mich., and after repeated requests to make experiments, a horse was immunized first against tetanus, then streptococcus and diphtheria infection. They succeeded admirably, and furnished me with the first batch of serum early last March. For some time I had no chance to use it, and during the period of severe scarlatina infection, I was compelled to resort to the anti-diphtheritic serum alone. The results with the above cases were not what I should desire to see. Since then I have

*Read before the Jackson Co., Missouri, Medical Society.

**Vide Pruden's Reports.

had a number of cases, eight in all, three of which were of very violent and malignant types of scarlatina, in which I used the special serum with the most gratifying results, in fact, it has surpassed my highest expectations. The action was very prompt and efficient. In none of these cases was any ear trouble experienced; even at the beginning of the appearance of the exudate it is checked rapidly. The swollen glands disappear, and no supuration has been seen in even the worst cases; neither nephritis nor other complications have developed. The desquamation was diminished in the majority of cases where the angina or throat exudate appeared in the first days of the illness. In none of these cases did laryngeal symptoms develop or follow; in only two appeared urticaria, which was formerly met with so often after the administration of anti-diphtheritic serum. Two of the scarlatina cases were children, four years of age, and one a married lady; of the other mixed infection cases, three were children and two adults. (The diagnoses in all these were verified by cultures.)

The following case, which came under the observation of J. M. Frankenberger, M. D., of this city, was the youngest child of a family living in an unsanitary dwelling, and is of particular interest: The child, who was two years old, was taken ill Saturday evening, March 16; the temperature was 100° , and the patient complained of headache and sore throat; and there was a rapid pulse. Sunday, March 17 he felt worse, and the temperature was 102° ; no membrane was discovered in the nose or throat. On Monday, March 18, the condition was much worse; the throat was swollen, the temperature rose to 104° , with a great deal of coryza, but no membrane was visible. Cultures showed streptococci and staphylococci with no bacilli of the Klebs-Loeffler type. On Tuesday, March 19, the temperature reached 105° , the glands of the neck were swollen, the membrane was visible on the upper and back part of the pharyngeal wall; cultures showed the presence of streptococci, staphylococci and bacilli of diphtheria. An injection of the mixed anti-toxins was made on Wednesday evening, March 20, by myself; in six hours the temperature had fallen from 105° to 103° , and the patient complained of hunger for the first time in five days. Inside of twenty-four hours, the glands of the neck were considerably reduced in size, the growth of membrane was checked. The patient was discharged on the following Sunday, and, though very weak, no visible signs of disease could be found. No internal remedies except stimulants had been administered. The recovery took place uninterruptedly. No signs of paralysis were observed in any of these cases.

I trust my fellow practitioners may decide to test this product thoroughly, and also that they may have the same excellent results which I have experienced. I would be very glad to see reports from any others who have tested this method of treatment.