

Symptoms and Diagnosis of Puerperal Infection.

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The Serumtherapy of Puerperal Sepsis.—Stimulated by the success of this treatment in diphtheria, and in a few other infectious diseases, an effort has been made in quite recent times to procure a serum that will be antagonistic to streptococci and antidotal to the products of their activity.

Richel et Héricourt* suggested some eight years ago the use of serum taken from animals "vaccinated" with a septic micro-organism in order to secure immunity in other animals. Many enthusiastic investigators have recently worked in this same field, especially in France; but it will be conceded, I think, that Marmorek's work has commanded the greatest respect and the most attention, and it will not be unfair, therefore, to judge the merits of the serumtherapy of puerperal sepsis by the results achieved with Marmorek's products.

Marmorek† points out that there are two ways of immunising animals. One is to take culture media with the microbes destroyed or removed, and containing only the toxins of streptococcus activity. The other is to inject the streptococci themselves into the animal which is to be made immune. The latter is much the more reliable method.

Marmorek was able to immunise horses, asses, sheep, and mules by injecting exceedingly virulent streptococci cultures in increasing doses during a period of six to ten months. Taking the serum from the animals at least four weeks after the subsidence of all the symptoms in the reaction following the last inoculation, Marmorek found that $\frac{1}{7000}$ part of a guinea pig's weight in serum was sufficient to protect it against ten times the dose of virulent streptococci which would be fatal in animals unprotected.

But he admits that there may be a streptococcus infection so virulent that no antidote is of avail, and also that, if the antistreptococcic serum is employed late after the primary infection, the progress of septic inflammation cannot be stayed.

Moreover, the antistreptococcic serum has

no antagonistic power over the other micro-organisms of puerperal sepsis, so that the quite common cases of mixed infection in which the colon bacillus, the bacillus fetidus, the bacillus pyocyaneus, and the pyogenic staphylococci are active may not be benefited in the least by the antistreptococcic serum.

Marmorek reports fifteen cases of streptococcus infection in puerperal women in which the serum was employed. In seven of these there was a pure streptococcus infection. This series had no mortality.

In three cases the colon bacillus was associated with the streptococci. All these women died. In five cases pathogenic staphylococci were associated with streptococci. In this number there were two deaths.

Gaulard* reports two cases of puerperal fever treated by serum. A rickety woman with a contracted pelvis had a protracted labour. The case was one of face presentation. The perineum was torn to the anus, but was sutured at once. One week after delivery the temperature rose to 105° F., and remained at that height for three or four days. Gaulard saw her four days later, when the pulse was 140 and irregular, and diarrhoea was present. The perineal wound was discharging pus, and on the vagina there were some sloughs. The uterus was curetted, nothing, however, of importance coming away. Subsequently the uterus was packed with iodoform gauze and the perineum resutured. The next day the temperature fell to 102.7° F., but on the second day it rose again, and her general condition became serious. At this time ten cubic centimetres of Marmorek's antistreptococcic serum were injected into the abdominal wall. The temperature fell slightly on the following day, and a second injection of two cubic centimetres was given. From this time the temperature fell steadily, and the patient made a speedy recovery.

The second case was also a rickety woman. It was her fourth pregnancy. The first labour was natural; in the two others delivery was effected by forceps. The antero-posterior diameter of pelvis was three and a quarter inches. As an unsuccessful attempt had been made outside of the Hospital to apply the forceps, a basiotripsy was performed, delivery effected, and a douche of 1 : 4,000 bichloride of mercury given. The temperature rose rapidly, and two days after delivery it had risen to 104° F. The uterus was swabbed out with creosoted glycerine, —some putrid fragments coming away— and plugged with iodoform gauze. On the fourth day ten cubic centimetres of antistreptococcic serum were injected, and repeated on the fifth

* Comptes Rendus de l'Académie des Sciences, 1888, p. 690.

† Le Streptocoque et le Serum antistreptococcique Alexandre; Marmorek, Annales de l'Institut Pasteur, T. IX. July, 1895, p. 593.

* Presse Médicale, November 30th, 1895.

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