SERUM-THERAPY IN PURPURA HEMORRHAGICA

WITH REPORT OF A CASE

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Extensive as the literature of purpura is, the bulk of its discussion, in later years at least, is given over to pathology and to classification, while the treatment, especially of the severer forms, ambling through many diverse paths, is still far from satisfying; and must remain unsatisfactory no doubt, until its etiology has passed from the domain of interesting speculation to that of empirical fact. In view of the increasing interest in serum-therapy, and because its use has been advocated mainly in hemophilia, it has seemed justifiable to report the following case.

A brief modern history of the treatment of purpura may serve, if only by contrast, to heighten the striking effects recently obtained in some cases through the use of serum. David King, Jr., in his Fiske Prize Essay (1836) gave the following summary of the best methods then in use:

1. Blood-letting was the great remedy in adults.
2. Nitrate of potash, acetate of lead, warm baths and turpentine were the favorite agents.
3. Mercurial purgatives were given to "restore the hepatic secretions."
4. A generous dietary, including wine, iron, and acids to "raise the vital energies" was given.

Some forty years later the fluidextract of ergot¹ became highly recommended; then in rapid succession pleas were made for the salicylates, acetanilid, hamamelis, the perchlorid and sesquichlorid of iron,² calcium chlorid, sodium phenolsulphonate,³ and arsenic; while a small host of lesser remedies still linger by their mere inertia. Turpentine has long enjoyed prime favor. The dosage has varied from minimum to maximum, Eustace Smith⁴ giving two to four drams in the morning, accompanied by a generous amount of castor oil. It acts thus as an aperient, and is not sufficiently absorbed to injure the kidneys. In the section on

1. Bulkley: Practitioner, Nov., 1876.

2. Weber, Leonard: New York Med. Jour., April 10, 1897.

3. Sansom: Tr. Clin. Soc., London, May 25, 1894.

4. Smith, E.: Brit. Med. Jour., May, 1908, p. 1218.

the treatment of purpura in the new Allbutt series⁵ is the meager statement: "The hypodermic injection of fresh animal serum has been employed," all discussion of the results being omitted; while in one of the most recent and succinct studies in this country in the Osler "System,"⁶ the treatment outlined consists of calcium lactate, Fowler's solution, carbon-dioxid baths, oil of turpentine and aromatic sulphuric acid. Serum therapy is discussed solely in the article on hemophilia.

The stimulating researches of P. Emile Weil,⁷ probably succeeded more than any other one factor in fastening serum usage to hemophilia, largely to the neglect of other hemorrhagic states. Pigot,⁸ however, reported a severe case of purpura treated ineffectually with the perchlorid of iron and ergotin; the patient was later cured by serum injections, receiving 250 c.c. on three consecutive days. This, I am sure, would now be thought excessive dosage.

Fig. 1.—Patient with purpura hemorrhagica.

Weil⁹ himself in 1907 reported a series of four cases of hemorrhage from widely differing sources treated with serum. The first patient coming in for febrile polyarthrititis, rapidly developed subcutaneous hemorrhages, epistaxis, and violent hematuria. She was treated effectually with intravenous injections of 15 c.c. of fresh beef-serum, and after one

5. Mackenzie, Sir Stephen: Allbutt & Rolleston's System of Medicine, vol. v, "Purpura."

6. Pratt, J. H.: In Osler's System, vol. iv, chap. xvi.

7. Weil, P. Emile: L'hémophilie—pathogénie et sérothérapie. Presse méd., Oct. 18, 1905; Bull. Soc. méd. d. hôp., Oct. 26, 1906; Tribune méd., Paris, Nov. 10, 1906; Soc. de chir., March 6, 1907; Rev. prat. d'obst. et de pédiat., March, 1907; Tribune méd., Paris, Jan. 12, 1907.

8. Pigot: Gaz. hebd. de méd., Oct. 17, 1897.

9. Weil, P. E.: Tribune méd., Paris, Jan. 12, 1907.

mild relapse was discharged apparently cured. Weil seems impressed with the severity of this case.

The second on his list is interesting because of the coagulation time, which was two hours on admission, and after complete recovery was still fifty-five minutes. The third patient, one with purpura, made an uneventful recovery. In the fourth case, the clinical picture was that of the terminal stage of chronic interstitial hepatitis. The extensive hemorrhages into the skin were stopped entirely; the patient later succumbed to the intoxication attendant upon the course of his cirrhosis.

In a paper entitled "Chronic Purpura and Pernicious Anemias"⁹ Weil discusses two advanced cases in which the severe ecchymoses, epistaxis, and hematuria were completely checked some months before the patient died from the anemia. In the second case, during a period of transient improvement which followed the injections of serum, the red

Fig. 2.—Patient with purpura hemorrhagica.

cells rose from 1,700,000 to 3,350,000. Signs of meningeal hemorrhage present in this case at the start, completely disappeared along with the cessation of the other bleedings.

In 1908 Leary¹⁰ reported a series of twenty cases from Boston. In fifteen, hemorrhages had already appeared; in the other five, the serum was used as a prophylactic measure, principally in patients profoundly jaundiced in whom operative measures were found imperative. The cause of hemorrhage in this list includes cholemia, hemorrhage of the new-born, hemophilia, purpura (this case is also reported in full by Larrabee¹¹), and a few postoperative hemorrhages, curettage, submucous resection of septum, ritual circumcision and typhoid hemorrhage. The case of circumcision proved fatal. It presented early in the series, while

10. Leary: Boston Med. and Surg. Jour., 1908, clix, 7.

11. Larrabee: Boston Med. and Surg. Jour., 1908, clix, 682.

experience was still meager, and Leary is convinced that this patient too could have been saved, if serum more frequently and in larger doses had been given.

As to the kind of serum to be used, Weil suggests that rabbit, beef, antidiphtheritic or human serum is serviceable; but the beef is least desirable, as constitutional reactions (fever, chills, cyanosis and vomiting) are more pronounced with it than with any other. The dosage in general use is: 15 c.c. intravenous or 30 c.c. subcutaneously for an adult, while half the amount usually suffices for a child. The dose may be repeated in two days, and should be given at any rate in ten to prevent anaphylaxis. Serum disease appeared but once in Leary's twenty cases, and was then more annoying than serious. The serum should be fresh, certainly not more than fourteen days old, and the fresher specimens prove by far the more efficacious.

REPORT OF CASE

Patient.—The present case, which may be added to those already reported, is that of an adult woman who entered the medical wards of St. Luke's Hospital¹² on May 11, 1908, on the service of Dr. Theodore C. Janeway. Chief complaint: Pain in the region of the bladder; hemorrhages under the skin.

Present Illness.—Three days ago the right wrist became swollen and painful and a hemorrhagic spot appeared over the head of the ulna. The pain rapidly grew worse and other joints began successively to be painful. Meanwhile the patient had chilly sensations, fever, and crops of petechial spots on various parts. The pain disappeared in about thirty-six hours except for a severe burning and aching in the bladder region. This has persisted till the present time, and is not influenced by urination. The urine is dark-brown in color and looked to the patient as though it contained blood.

History.—Ten years ago, after exposure to cold, the patient had a profuse bleeding from the gums; they were spongy and purple. A day later small petechial spots appeared on the body. She recovered after two weeks. At times she has bruises on her body which she cannot account for. Family history is irrelevant.

Physical Examination.—Hemorrhagic spots varying in size from petechiæ to the diameter of a centimeter or more cover a large part of the chest and abdomen. About the elbows, wrists and ankles, especially on the right side, are diffuse hemorrhagic areas 8 or 10 cm. in diameter. In these regions there are no petechial spots other than the larger areas. On the back of the hard palate is a small hemorrhagic patch. Herpes is present on the upper lip. The bladder is enormously distended. The right kidney is exquisitely tender to pressure, especially posteriorly. The left kidney is similarly so, but to a lesser degree. The lower poles cannot be felt. In other respects the physical state is normal. Eye-grounds show no hemorrhages.

Clinical Notes.—On admission, May 11, temperature was 100.2, pulse 104, respirations 24, blood-pressure 80 mm. Hg in systole. Blood examination: Red cells, 3,468,000; hemoglobin, 75 per cent.; white cells, 5,500; polymorphonuclears,

12. St. Luke's Hospital, Med. Case No. 77436.

64 per cent.; lymphocytes, 36 per cent. Coagulation time (Brodie), 2 minutes 43 seconds. Urinalysis: Acid, 1014; albumin, 15 per cent.; no sugar; microscopic hyaline and granular casts and blood.

The patient was given an amount equal to 5,000 units of diphtheria antitoxin. As there was no serum then available, this was used as the nearest substitute. This was the precipitated antitoxin now in use by the New York Board of Health. Calcium lactate grs. xx t. i. d. was ordered rather as a routine measure.

During the next four or five days there appeared no new hemorrhages, and the stools and urine showed less and less blood. On May 17 she was given 6,400 units of the same antitoxin. Calcium lactate was stopped.

Improvement was steady and convalescence seemed well established until June 17, when the patient again complained of sharp pains in the bladder region. No ecchymoses were found, however, and she seemed to progress until June 30. This morning she was nauseated and vomited. There were several small ecchymotic spots on the legs. Stools fluid and black. They contained blood. The urine contained blood also. The temperature rose abruptly to 102.3 F.

The patient was given 10 c.c. fresh horse-serum subcutaneously. This time recovery was prompt and permanent.

She left the hospital July 15 in excellent condition, and in a recent interview says she is still, after ten months, enjoying perfect health.

I desire to express my appreciation to Dr. Janeway for the privilege of reporting the details of this case.

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