positive. The temperature rose to 104°F. No coma; breathlessness increased giving rise to cyanosis. Quinine was given intravenously.

Next day the temperature was normal. The pain completely disappeared. Heart sounds feeble. Lungs clear. The temperature showed two lesser elevations on two more periodic intervals. The pulse rate was still about 120 per minute though the temperature was normal.

On the 25th May, 1936, the patient had another attack of pain and breathlessness. Examination revealed impaired percussion note, feeble breath sounds and fine râles at the left base in the axillary region. There was no significant rise of temperature. The area spread, and on the 28th a distinct rub was felt over the affected area. All clinical signs as well as breathlessness completely disappeared next day. Further progress was uneventful. The blood pressure on the 4th June was 100/60 and the pulse 90 per minute. The pressure after five days was 110/60. Wassermann reaction repeated on the 9th was faintly positive.

There was no history of syphilitic infection nor any clinical manifestations of it. The first positive Wassermann reaction may be that rare condition, a false positive Wassermann reaction, due to malaria.

An electrocardiogram was taken three weeks after the onset, when the systolic blood pressure was 110, and the pulse rate 80 per minute.

Lead I showed a distinct low voltage with a well-marked plateau after the S.

Lead II showed a sharp Q, a biphasic RS and a distinct slurring of S in places, almost a bifurcation and a prominent angular T.

Lead III was similar to lead II, but less prominent.

It distinctly pointed to cardiac infarction of few days' standing. If it had been possible to take the earlier records, the changes would have been still more striking.

Discussion

The pneumonic signs are suggestive of several conditions. Like the heart condition they might be of malarial origin. Karve (1926) from Kenya has described primary and secondary pneumonias of malarial origin. These, as in the present case, are characterized by uncontrollable pleural pain, transitional râles and short duration. But the onset of the symptoms after the disappearance of the parasites from the blood makes the malarial origin unlikely.

A ward infection can be ruled out by the extremely short duration of the signs and symptoms and absence of leucocytosis.

Reflex atelectasis with formation of mucus plugs similar to post-operative pneumonia has been described following an infarction of the heart. Donzelot (1934) has described fleeting pneumonic signs as a late complication of infarction of the heart due to embolic showers. The lung condition was probably one of the last two.

Summary

A case is described in which severe anginal pain, cyanosis, rapid pulse and low blood pressure marked the onset of a malarial attack.

The infection was not heavy and there was no evidence of thrombosis in other organs such as the brain.

The pulse rate remained rapid and the blood pressure was low for two weeks after the attack.

Acute pneumonic symptoms of very short duration occurred soon after, but these are not considered to be of malarial origin.

The Wassermann reaction was positive during the acute attack.

Acknowledgments

Our thanks are due to Lieut.-Colonel S. S. Vazifdar for his kind permission to publish this case and to Dr. B. B. Yodh who kindly undertook the electrocardiographic investigations.

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PRONTOSIL IN PYELO-CYSTITIS AND ERYSIPELAS

By Y. SURYANARAYANA RAO, L.M.P., L.T.M.

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IN view of the encouraging reports that are being published in the medical journals about the action of prontosil in streptococcal infections, it may be of interest to record its beneficial action in the following two cases, one of pyelo-cystitis and the other of erysipelas, that were treated in the Government Royapuram Hospital, Madras, four months ago.

1. *A case of pyelo-cystitis.*—A patient, a male, aged about 28 years, was admitted into the above Hospital on the 16th February, 1937, with a history of fever and pain over the hypogastric region for eight days.

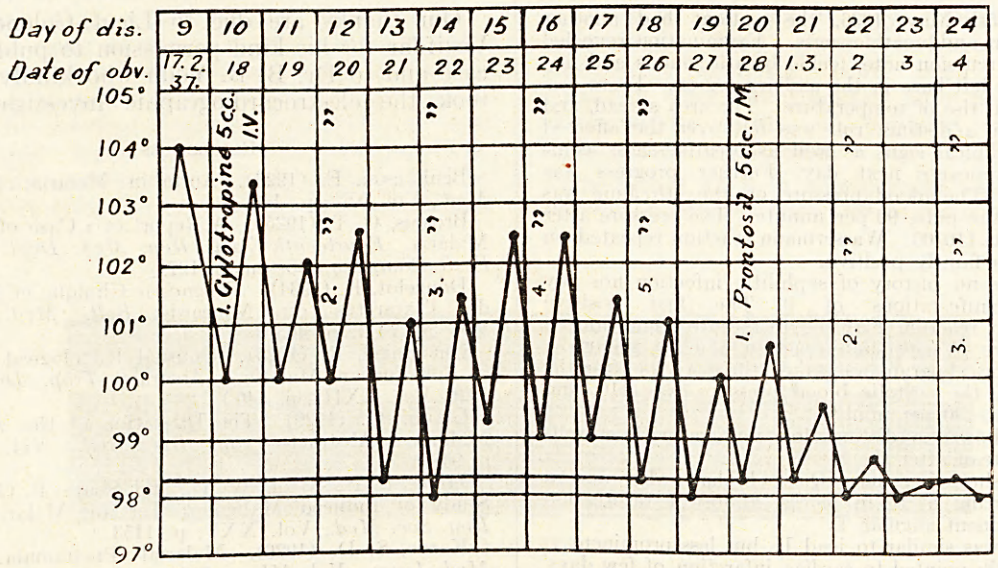
There was nothing worthy of note in the family history. His habits were regular; he neither drinks nor smokes. No history of exposure to any venereal infection.

As regards his previous history, he had occasional attacks of burning sensation during and after passing urine in the year 1928.

Present history.—On the night of 8th February, 1937, while he was travelling in a train, he had high fever which rose to 104°F. by the next evening. Thinking it to be malaria, he took 20 grs. of quinine sulphate that day. The temperature came down to normal on the morning of the 10th; from the evening, however, he began to pass urine in small quantities frequently accompanied by burning sensation and griping pain. He had also pain in the loins.

Present condition.—The patient was a fairly well nourished young man. He was having a temperature ranging between 102° and 104°F. Peripheral blood did not show any malarial parasite. There was a slight increase of polymorphonuclear leucocytes.

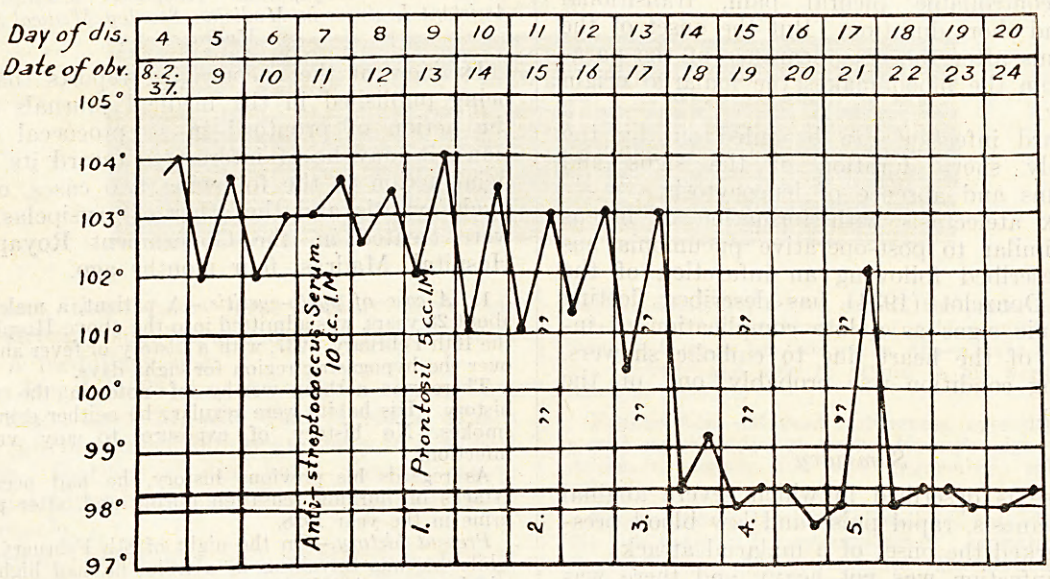
Name.....V.P.N. Age.....28.



Urinary system.—There was pain during micturition. There was no urethral discharge, even after prostatic massage. The reaction of the urine was alkaline, slight trace of albumin was present, no sugar, and the urine was cloudy in appearance. The urinary deposit under the microscope contained plenty of pus cells and a few red blood cells. There were no casts. A three-glass test revealed that all the specimens were uniformly cloudy in appearance and contained pus cells. There was some granular debris present. The deposit also showed some epithelial cells from the pelvis of the kidney and also from the urinary bladder. The urine on culture showed *Bacillus coli*.

On the 18th February 5 c.cm. of cylotropine was given intravenously and it was repeated on the 20th, 22nd, 24th, and 26th. From the 20th, he was also put on mandelic acid treatment. It was given in the form of elixir ammonium mandelate. When the reaction of the urine was found to be not sufficiently acid for the drug to act, by the methyl red test, the patient was given additional doses of ammonium chloride by mouth. This at once increased his burning sensation while passing urine, but it did not bring the reaction of his urine anywhere in the neighbourhood of 5.3 pH which is necessary for the success of mandelic acid treatment. So this treatment had to be discontinued. In spite of five intravenous injections of cylotropine, the temperature did not show any sign of abatement. Then on the 28th the patient was given an intramuscular injection of 5 c.cm. of prontosil. Since that date, he showed steady improvement both as regards the fall of temperature and in the general and local symptoms. The burning sensation in the urine decreased considerably. On the 2nd and 4th March, prontosil was repeated. The temperature came down to normal and kept normal till he

Name.....K. Age.....18.



was discharged on 15th March, 1937. The patient had no burning sensation. The urine was clear and did not contain any pus cells nor any *Bacillus coli*.

This case shows the beneficial effect of prontosil in infections other than streptococcal.

2. *A case of erysipelas.*—A female, married, aged about 18 years, was admitted into the Government Royapuram Hospital, on the 8th February, 1937, for fever and headache for seven days. Her previous history was that she had fever for about eight days a month back; and that she was in this hospital for fibrosis of the lungs one and a half months back.

The present complaint started with high fever which was continuous for the past seven days. She was a thin individual and of delicate health. Pulse was rapid but full. Liver and spleen were not enlarged. Urine was quite normal. Respiratory system did not show anything in particular beyond a few crepitations here and there. Peripheral blood did not show any malarial parasites but there was distinct increase of polymorphonuclear cells. On the day of admission she was found to have an erythematous patch very slightly raised above the surface, about two inches in diameter, over the front of lower third of the right leg. The part was tender and painful. Thinking it might be localized lymphangitis, lead and opium lotion was applied. But the fever continued high and the local lesion was increasing. Widal reaction for typhoid group of bacilli was negative. As the swelling and redness in the right leg began to increase and the temperature persisted, 10 c.cm. of antistreptococcus serum was given intramuscularly on the 11th. This also did not have any effect, either on the temperature or on the local condition. So, on the 13th, prontosil 5 c.cm. was given intramuscularly. By this time the local redness had spread up to the knee, and the patient was in a toxic state. There was retention of urine and she had to be catheterized. Next day, there was a definite improvement both in the general and local condition. Prontosil was repeated on the 15th and 17th. The temperature came down to normal, and the local condition was definitely better. The patient was given two more injections on the 19th and 21st. By this time the erysipelas inflammation had completely disappeared and the temperature came down to normal, and since then the patient made an uneventful recovery and was discharged cured on the 3rd March.

The above two cases were admitted under Captain Rao Bahadur P. Krishnaswami, B.A., M.B., C.M., M.R.C.P., first physician and superintendent of the hospital, and my grateful thanks are due to him for going through these notes and also for permission to publish them.

[*Note.*—In case 1 the temperature might possibly have subsided without prontosil.—EDITOR, *I. M. G.*]

SALYRGAN IN PHLEGMASIA ALBA DOLENS

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ENCOURAGED by the favourable results produced by salyrgan in the treatment of various generalized and localized œdemas, I was led to use the drug in a case of phlegmasia alba dolens, the thrombotic form of which is essentially a variety of localized œdema brought about by femoral thrombosis towards the end of the puerperium. The beneficial influence exerted by the drug in relieving the condition prompts me to record the case :—

Mrs. K., a banker's wife, aged 21, had her first confinement on the 5th April, 1937. The delivery was complicated by an extremely unusual obstetric emergency, namely separated symphysis pubis, and so naturally damage to the soft parts was great. The child was born dead, hæmorrhage was severe, the perineal tear was large and deep reaching the rectum, and anteriorly a large retro-pubic niche was formed by the separation of soft structures which had fallen back.

The puerperium obviously could not be uneventful. She had a very bad time but serum, prontosil, liver preparations, tonics together with properly planned local dressings and careful nursing, controlled the situation. On the 14th day she had serum sickness which was followed by a generalized mild œdema. Anæmia which had developed during the puerperium was severe. Calcium, sulphate of iron, campolon and oral hepatex were used. Œdema rapidly cleared in the rest of the body but the left foot continued getting worse. On the 20th day the foot was markedly swollen and pitted on pressure. Next day the swelling extended higher and in another day the thigh was tense. Temperature rose a little and there was slight rigor, but pain in the calf and thigh was intense and even slight movements were resented. On the 23rd day the foot and leg were large and still pitted on pressure; the thigh was swollen, tense, hard and very painful. Novalgin one to two tablets a day in divided doses was given. The leg was fomented, gently wrapped in cotton, put at rest on pillows and immobilized with side-pillows. In addition to the blood-building measures already in progress she was given salyrgan 1 c.cm. intramuscularly, with the idea of draining away the localized œdema. The response was gratifying inasmuch as a profuse flow of urine brought about an appreciable reduction of the œdema of the foot and leg within 24 hours, though the swelling of the thigh did not appear to be noticeably affected. The pain was less relieved than the œdema. Encouraged by the result another injection of salyrgan was given on the 26th day. It was followed by a steady improvement, but on the 29th day though the temperature came to normal and pain and hard stiff swelling of the thigh was getting less, œdema of the foot was once again noticed. She was given ammonium chloride grs. 15, t.d.s., and with the morning dose salyrgan was administered orally (1 c.cm. of a 10 per cent solution) on the 30th and 31st days and 2 c.cm. on the 32nd and 33rd days. By the 35th day œdema of the foot had disappeared and the tense swelling of the thigh had gone down to a marked extent. By the 40th day even the thigh was clear.

Comments.—In the presence of anæmia, puerperal sepsis, pelvic cellulitis and other complications it was not surprising that phlegmasia alba dolens should occur. In this case the thrombotic and lymphatic forms co-existed. The reduction in the œdema of the foot and leg that followed the administration of salyrgan by injection was marked. That it was brought about by salyrgan was clear from the profuse diuresis that attended its use. To control the œdema that recurred on the foot it was decided to try the drug orally, as the patient, having become tired of so many injections, resented even ordinary pricks at this stage. Salyrgan administered together with ammonium chloride brought about a rapid improvement in four days. The efficiency of salyrgan appears to be not appreciably depreciated by oral administration. Fleckseder (1931) used it orally and rectally with good results.