ACUTE HEPATIC NECROSIS OF LIVER — REPORT OF TWO CASES SUCCESSFULLY TREATED WITH CORTICOSTEROIDS

by

S. G. JANI*, M.B., B.S., M.D. (Gynaec. & Obst.), G.M.S.

Introduction

The term acute hepatic necrosis is now commonly used for acute yellow atropy of liver. Sheehan has shown that in such cases the centrilobular necrosis advances to midzonal area. Formerly, acute hepatic necrosis was believed to be due to some specific toxin and was regarded as a toxaemia of pregnancy. This view lost ground and it is now believed that the condition appears in later weeks of pregnancy affecting a vulnerable liver of pregnant woman, trophopathic type, by an infective virus or some toxin. Probably it starts as acute infective hepatitis of pregnancy, rapidly entering a stage of acute hepatic necrosis.

Two cases were successfully treated with corticosteroids, intravenous glucose saline therapy, and antibiotics.

Amongst 2100 deliveries, 14 cases of pregnancy with jaundice were admitted, out of which 2 cases went in for acute hepatic necrosis.

Case History

(1) Mrs. S. K., aged 30 years, was brought to the hospital on 1-1-62. She delivered at home and had a postpartum haemorrhage. The delivery took place 24 hours earlier. She had fever and vomiting since the last three days. On admission, her main complaint was inability to see. Clinical findings revealed the presence of jaundice. The conjuctiva was markedly yellow and the liver area was tender. Her pulse was weak and fast, temperature was 100°F. Urine examination showed the presence of bile pigments and bile salts.

At about 4.30 p.m., she developed the symptoms of cerebral irritation and at about 6 p.m. she became rowdy, talking irrelevantly. The temperature was the same. Convulsive movements of lower extremities appeared and both the planters were extensor. She became semi-conscious and next day went into a state of "hepatic coma". She was completely unconscious, the corneal reflex was sluggish, the pupils sluggishly reacting to light, there was flaccidity of limbs and retention of urine. The amount of urine was scanty and dark coloured. The area of liver dullness was diminished. She was very toxic and the general condition was poor with bilateral basal pulmonary congestion. She remained unconscious for three days after which she started improving.

Movements of the extremities returned, patient answering the questions, temperature under control, planter reflexes now flexor, pupils normally reacting to light, pulse volume improving and urine increasing in quantity.

On admission she was given 50 c.c. of 50% glucose, which was repeated every six hours. Routine treatment for jaundice was given. She received 100 c.c. of Peristan-N slowly intravenously. Streptomycine and crystalline penicillin were given as routine. On the next day she was put on 5% glucose saline infusion, 550 c.c., twice a day with broad spectrum antibiotic, Tetracycline 250 mg., intravenous in the saline drip. The specific therapy with cortisone was started, 50 mg. intramuscular to start with, repeated 25 mg. every four hourly. The

* *Medical Officer, General Hospital & Maternity Home, Patan (N.G.)*

glucose saline drip, corticosteroids and broad spectrum antibiotic and Peristan-N were continued till the patient became conscious. When she was able to take by mouth, she was put on glucose lemonade water, sugarcane juice, sweetlime juice and plenty of honey water. Intramuscular cortisone was replaced by oral prednisolone, 5 mg. three times a day. Vitamin B Complex and vitamin C, vitamin K and mixture containing potassium salts were routinely given.

On the 11th, day the patient developed generalised anasarca with oliguria, the amount of urine passed was hardly 4 to 6 ozs. in 24 hours. Urine examination, in addition to bile salts and pigments, showed the presence of epithelial and granular casts with albumin ++. On the fifteenth day the urine increased in amount to 30 ozs. and started steady recovery. After one and half months the patient was discharged cured.

(2) Mrs. D. O., aged 20 years, was admitted in the hospital for treatment of pregnancy with jaundice. She was in the ninth month. Jaundice was noticed for the last fifteen to twenty days. On the fourth day of admission the patient delivered a macerated still-born baby. The liquor amnii was yellowish, so was the placenta. There was excessive bleeding of third stage. On the sixth day, i.e., on the third day of delivery, the patient became drowsy and developed oedema on the feet. There was bradycardia, itching of body, the urine was scanty. At about 2-40 p.m. she became semi-conscious, the temperature was 100°F, pupils sulggishly reacting to light. There was rigidity of lower extremities and planters were extensors on both sides. With catheterisation, the urine was 4 ozs. only. Next day the patient became completely unconscious and temperature shot up to 104°F (probably saline rigors). All the time the degree of jaundice was deepening and there was demonstrable redutcion in liver dullness area.

After a period of four day's comatose stage, the patient showed signs of recovery, the urine increasing in amount and gradually becoming free of bile salts. She received the same line of treatment as mentioned in case No. 1.

On the twelfth day the patient developed generalised anasarca with oliguria with only 3 to 4 ozs. of urine passed in twenty-four hours. Urine examination was exactly the same as in the first case. On the sixteenth day diuresis occurred. The urine output increased to thirty ozs. and then the patient showed steady recovery. The patient was discharged cured after one month.

Points for consideration in both the cases are: (1) Jaundice occurred in later weeks of pregnancy and deepened and went on to acute hepatic necrosis. (2) The period of comatose condition lasted for 3 to 4 days with neurological signs present in both cases. (3) Both the patients came from poor and ignorant class, having a large family. Temperature was not above 100°F in both cases. (4) In both cases liver dullness was reduced. (5) During the recovery period on the tenth day, both the patients developed generalised anasarca with oliguria, urine examination showing presense of albumin, epithelial and granular casts.

Discussion

Formerly acute hepatic necrosis was believed to be due to some specific toxin and was regarded as one form of toxaemia of pregnancy. At present, it is believed that hepatic necrosis occurs in two forms: (1) Toxipathic hepatitis, and (2) trophopathic hepatitis. The first condition occurs due to noxious agent like infective virus, or chemical agent, or chloroform, etc., directly affecting the liver cells. In the second type, the liver cell is deprived of essential factors and directly or indirectly is affected by some toxin. The starving

pregnant woman, due to vomiting of pregnancy or malnutrition, probably suffering from the trophopathic type of hepatitis, the essential factors being diverted to the foetus and not replaced by good diet or treatment, is probably more prone to infective hepatitis and is likely to go in for acute hepatic necrosis. Himsworth has pointed that "there are many records of families developing infective hepatitis with pregnant individual of family dying from acute hepatic necrosis, the inference being that the pregnant woman, under certain conditions, is only marginally protected by her aminoacid intake. Women, whose protein intake is inadequate due to poverty or ignorance or who are starved under conditions of prolonged vomiting, have some degree of fatty infiltration and are thus very likely to be severely affected by noxious agent such as virus".

The clinical picture is typical and Alan Brews describes the condition as occurring in the last month of pregnancy, where the jaundice deepens, stupor progresses to coma, and after 7 to 12 days a macerated still-birth occurs and about 3 days later the patient dies. Eastman regards the condition as severe form of hepatitis, clinical picture of which is one of profound prostration, mahogany jaundice and coma.

The prognosis is grave and Eastman states that it is necessarily fatal, despite all therapy, but intravenous glucose is the standard method of treatment. Alan Brews believes that the early treatment should consist of continuous drip of intravenous glucose, at first 50% solution is given, reduced to 5% solution. The salient points in the treatment given in above two cases are: (1) Administration of corticosteroid parentarily in the beginning, and orally in reduced doses when the patient is able to take by mouth. (2) Intravenous administration of glucose 50% solution in the beginning reduced to 25% solution later on, with the simultaneous drip of 5% glucose saline till the patient was able to take by mouth, then she was given glucose lemonade water, sugarcane juice, sweet lime juice and plenty of honey water. Later on, gradually, she was taken on a diet consisting of millet bread with gur, skimmed milk, buttermilk, ground nuts, rice and fruit. Oil and ghee are omitted for a further period of one to two months. (3) Detoxicating agents like Peristan-N were given during the period of comatose condition with an idea to reduce the degree of toxic state. (4) Broad spectrum anti-biotics, like Tetracyclin, were given for first three days and later on were substituted by crystalline penicillin twice a day. Even though their anti-virus action in infective hepatitis is disputable, we have found them valuable in all cases of infective hepatitis, especially in the way of reducing the recovery period and controlling the secondary complications that might develop. (5) Vitamin B Complex and vitamin C in high doses are given with a view to their metabolic and anti-infective action. Vitamin K is routinely given. Calcium gluconate is also routinely given.

Three factors were considered in the above treatment: (1) Prevention of further cellular damage and maintaining the metabolism of the

liver cell, (2) prevention of toxaemia and controlling of infection, and (3) maintaining the general condition of the patient. Aiming at the first two, the administration of the Corticosteroids was thought of and accordingly the out-lined treatment was given.

The interesting point developed during the treatment and during the recovery period in both cases was development of generalised anasarca. It was difficult to attribute this condition only to one cause. First it was thought that it might be due to over-fluid therapy, but this was not so as the intake of fluids was guided by output of urine and other channels of excretion. The total intake was from 1400 c.c. to 1800 c.c. Then it was attributed to cortisone therapy, but this may not be the only factor causing the salt and fluid retention as the cortison administration was continued even during this phase of anasarca. Considering the fact that in this condition of hepatic necrosis, liver function tests are severely impaired and there is a progressive decrease in blood urea, and that the hypoproteinaemia, with depression of albumin fraction and inversion of albumin-globulin ratio as reported by Zondek and Boomberg, and in view of the urine picture examined, during this phase showing the presence of albumin and epithelial and granular casts suggestive of kidney damage, it was thought that the anasarca might be due to renal damage, either anoxic, toxic or due to blockade of minute glomerular tufts or a tubular necrosis. However discussion on the point is welcomed.

Poverty and ignorance handicapping taking of early treatment and malnutrition, due to economic crisis, should be considered as predisposing factors to this condition, eradication of which can save many lives as suggested by Himsworth.

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