ACUTE RENAL FAILURE

(Report of 5 Cases)

by

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This serious complication of pregnancy was first described by Bradford and Lawrence, Sheehan and Moore, Bull and Joekes and Kolff contributed to the diagnosis and management of this condition. Darmady reported 72 cases and Duff and Moore studied 71 cases. The incidence was reported to be 1 to 2 cases per year (Stallworthy) and noted in 1% of cases of accidental haemorrhage (Eastman) and in 0.3% of labour cases (Blagg and Parson). During the period 1963-1966 five cases were treated at Government General Hospital, Kurnool, giving an incidence of 1 in 1613 deliveries. Because of their rarity these cases are being reported.

Case 1

Mrs. K., age 20 years, primigravida, was admitted on 21-3-63 with labour pains of 24 hours' duration. The uterus was full-term, with vertex presentation and an unengaged head. Foetal heart sounds were present. On pelvic examination cervix was fully dilated, membranes absent, with marked caput over the head. Temperature 101°F, pulse 120 per minute, and blood pressure 130/100 mm Hg., Hb% 5.8 gm%.

Lower segment caesarean section was done and a live female baby (deeply asphyxiated) was delivered. Blood pressure fell to 80/50 mm. during operation. Postoperatively nor-adrenaline drip, 4 mg, I.V. and hydrocortisone 100 mg eight hourly in glucose saline were given to combat shock as blood was not available for transfusion. Two ounces of blood-stained urine was drawn at the time of operation and from 23-3-'63, 2 ozs. of blood-stained urine, with plenty of R.B.Cs. and no casts, was secreted daily.

Bull Joekes line of treatment was started with intravenous cortisone 50 mg., eight hourly, achromycin 250 mg six hourly, and maintenance of fluid and electrolyte balance. Temperature ranged between 100-103°F till death, pulse rate 100 to 130 per minute. Blood urea was 186 mg% on 23rd March, '63, 246 mg on 24th and 303 mg on 26th, 428 mg. on 28th. CO_2 combining power was 35 vols% on 24th. Serum sodium was 300 mg% on 25th and serum potassium was 25 mg%. Diarrhoea set in on the 26th. Drowsiness was present on the 28th. She had delirium on 29th and generalised oedema on the 30th with epistaxis, tendency to diffuse bleeding and haemoptysis. She expired in uraemic coma on 31st March '63. The urinary secretion was 2 to 3 ounces daily till death. Packed cells transfusion was given on the 30th to combat haemorrhagic tendency.

Case 2

Mrs. A., age 25 years, gravida 4, para 3, was admitted on 15-7-'65, with history of labour pains since 13½ hours and cessation of pains since 7½ hours. On admission the patient was in shock with B.P. 90/60 mm., pulse 120 per minute. Abdomen was distended with free fluid. Uterus was full-term, not acting, L.O.T., head not engaged but deflexed. Foetal parts were easily

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palpable and foetal heart sounds absent.

Emergency laparotomy was done 1½ hours after admission, with diagnosis of rupture of uterus and the same was found to be in the lower segment in an oblique direction. The rent in the uterus was sutured and excision of tubal loop done on both sides. Postoperatively blood transfusion was given twice — 300 cc each and dextraven later. On 17th July mild icterus was present and urine secretion was 3 ounces during 24 hours. Blood urea was 168 mg on 19th, 120 mg on 20th and 252 mg on 29th. Haemoglobin was 6 grms%. Serum Van den Bergh was positive, serum bilirubin 10 mg% and thymol turbidity test 1 unit on 17th. On 20th CO_2 combining power was 34 vol% and serum Van den Bergh test was negative. The urine secretion was 3 to 5 ounces, daily till 24th (9th postoperative day) and 18 ounces on 25th and 27 to 36 ounces from 26th. Vomiting was present from 20th to 26th and intravenous glucose 25% with saline was given during that period. She was treated by modified Bull Joekes line of treatment with penicillin 4 lakhs daily and Durabolin 25 mg. intramuscularly was given on 20th, 25th and 30th July. She was conscious throughout and was discharged cured on 17th August.

Case 3

Mrs. M., aged 35 year, gravida 6, para 5, was admitted on 27-8-'65 with history of labour pains since 14 hours. The height of the uterus was 36 weeks. Presentation was extended breech and foetal heart sounds were present. Per vaginam, membranes were absent with cervical dilatation of 2 cm and adequate pelvis. Hypotonic uterine inertia was present and pitocin drip 1-5000 dilution was given on 29th and 30th and a dead female foetus weighing 2.9 Kg. was born on 30th by assisted breech delivery. Manual removal of placenta was done due to its retention, the liquor amnii being purulent and foul smelling at the time of delivery. The patient collapsed and got into shock 70 minutes after delivery, with B.P. 70/40 mm and pulse 76 per minute, low volume and tension. The diagnosis of endotoxic shock was made and treated by administration of nor-adrenaline drip 2 mg intravenous, cortisone 100 mg. and Reverine.

On the 31st the urine secretion was 10 ozs for 24 hours and B.P. was 90/60 mm. On 1st September the urine secretion was 5 ounces with pus cells 10-12 per field and R.B.Cs. 25 per field, the patient was boisterous and restless. On 2nd September the patient was conscious, with incoherent talk and on the 3rd stomatitis and glossitis set in. Her general condition improved on the 5th but dysphagia and sore throat were present.

Treatment given was Steclin 250 mg. six hourly orally for one week, paraldehyde intramuscularly till 4th September. Intravenous glucose, 1 to 2 pints daily and Durabolin 25 mg on 1st, on 5th and 10th September. Blood urea was 100 mg% on 2nd, 138 mg. on 6th. The urine secretion was 8 ounces on 3rd and 30 to 54 ounces from the 5th (6th day postnatal). Serum potassium was 31 mg% on 7th; Blood urea 162 mg. on 10th and 23 mg% on 13th. She was discharged cured on 29th September.

Case 4

Mrs. J., aged 25 years, gravida 2, para 1, was admitted on 31-3-'66 with labour pains. Uterus was full-term, vertex presentation and a live female baby, weighing 3.6 Kg., was delivered naturally. Profuse postpartum haemorrhage followed soon after delivery of the placenta and oozing continued for 3 hours in spite of Methergin intravenously and a firm uterus. She had haemorrhagic shock with air hunger and profuse sweating, and her blood pressure was 50 mm Hg. in spite of intravenous glucose saline with nor-adrenaline, 4 mg. per pint and cortisone 100 mg intravenously. Blood transfusion was given 3½ hours after the start of bleeding and a total of 1200 cc was given during 24 hours. The blood pressure was 90/60 mm Hg. and six ounces of urine were passed for 24 hours. Drugs given were nor-adrenaline 44 mg., hydrocortisone 800 mg and blood transfusion 1200 cc and glucose saline with (15 units) pitocin drip 1500 cc in 2 days. She was drowsy on the 2nd and 3rd and the urine secretion was 1 to 6 ounces up to 4th April, and 27 to 33 ounces per day from 5th April. She had modified Bull Joekes

line of treatment during the oliguric phase and was discharged cured on 21-4-'66.

Case 5

Mrs. E., aged 28 years, was admitted on 19-9-'66 with pain in the lower abdomen, bleeding per vaginam since 8 days and no history of amenorrhoea. Bimanual examination revealed a normal uterus, with a tender mass in the right fornix. Emergency laparotomy, done on the 20th, revealed diffuse blood in the peritoneal cavity due to rupture of pregnancy in the right fallopian tube. Right salpingectomy was done and the condition of the patient was satisfactory. Group 'O' blood 300 cc was given postoperatively as the patient was anaemic (Hb 7.5 G%) and her blood group was 'O'. Deep jaundice was noticed the next day, and urine secretion was 4 ozs. Serum bilirubin was 20 mg% and jaundice subsided during the next 3 days. Vomiting was present, 3 to 5 times per day, and the patient was excited and restless on the 23rd. Fluids were restricted to 1000 cc per day, 5 to 10% intravenous glucose saline, and sequil 10 mg intramuscularly twice a day was given to reduce vomiting and excitement. Her general condition improved on 4-10-66 with no vomiting and the urine secretion daily was 4 to 10 ounces till the 10th postoperative day when diuresis started. Durabolin 25 mg. intramuscularly was given on 3rd and 8th day. She was discharged cured on 19th Oct., '66. Her blood urea was 114 mg% on 21st, 178 mg% on 26th, 216 mg% on 29th September, 204 mg% on 5th and 33 mg% on 18th October and serum potassium was 20 mg% and sodium 230 mg%.

Comments

In the present series the aetiology was (a) profound and sustained shock following caesarean section (b) rupture of uterus treated by repair of rent in the uterus, (c) endotoxic shock following assisted breech delivery, with manual removal of placenta, and intra-uterine sepsis, (d) haemorrhagic shock following severe postpartum haemorrhage and (e) blood transfusion incompatability after laparotomy for tubal pregnancy. No case of acute renal failure was recorded in 188 cases of eclampsia, 116 cases of accidental haemorrhage and 110 cases of septic abortion, treated during this period, 1963-66. The duration of shock was 12, 24, 20 and 36 hours in the four cases and prompt treatment of shock and haemorrhage could not be given by blood transfusions due to its non-availability in time in one case.

Treatment

Profound shock with dehydration or haemorrhage was treated by blood transfusion when available, and glucose saline or dextraven intravenously, supplemented by noradrenaline and cortisone, in the precipitating phase. In the oliguric phase the principles of Bull Joekes were followed, namely fluid restriction to 700-1000 c.c. for 24 hours, maintaining the electrolyte balance, diet containing mainly glucose, use of anti-biotics and Durabolin. In the diuretic phase a liberal diet with addition of protein and enough fluids to replace the loss (fruit juice and milk) and sodium and potassium were given.

Prognosis

The mortality was 25 to 40% in the reported cases and higher (75%) in cases of septic abortion. In the present series there was 1 death in the 5 cases i.e. 20% mortality. Death usually occurs on the 10th or 11th day, as in this series. The case was probably one of renal cortical necrosis as 2-3 ozs of blood-stained urine was secreted daily till death and uraemia

was present (423 mgs% of blood urea with average daily increase of 45 mgs%). In the surviving cases the daily rise of blood urea was 10 mg, 8 mg and 18.5 mgs% (i.e.) the mild and moderate types described by Parson and McCracken. The use of dialysing apparatus might have saved the life of the fatal case but it was not available.

Summary

Five cases of acute renal failure encountered at Government General Hospital, Kurnool, are reported, together with case notes. The aetiology was mainly profound shock with inadequate treatment in three cases, due to incompatable blood transfusion in one case and endotoxic shock with uterine sepsis in one case. Four out of the 5 cases were saved with the modified Bull-Joekes line of treatment.

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