MALIGNANT HYPERTENSION—A CASE REPORT

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Case report

A 61 year old white woman first presented in 1941 at the age of 20 years when, during a routine medical examination in the third month of her first pregnancy, she was found to be hypertensive. Blood pressure was 215/130 mmHg supine and she had ankle oedema and proteinuria. She had previously been well and had no family history of hypertension. Due to increasing blood pressure, the pregnancy was terminated at 26 weeks gestation by Caesarean section. Early in 1942 she was admitted to the London Hospital under the care of Dr Donald Hunter for investigation of 'persistent hypertension following toxæmia of pregnancy'. Renal function was normal. She spent a month in hospital during which time her blood pressure varied between 190/135 and 215/140 mmHg. She was discharged home on a small dose of phenobarbitone which she discontinued several months later because of the sedation produced. In 1945 she was investigated for infertility at the Westminster Hospital. At that time BP was recorded as 210/140 mmHg and blood urea and intravenous pyelogram were normal. Cervical dilatation, uterine curettage and tubal insufflation were performed and she was advised to attempt pregnancy again. She became pregnant in 1946 and spontaneously aborted a macerated foetus at 24 weeks gestation. Blood pressure was 230/180 mmHg. In 1947 she became pregnant again and miscarried at 7 weeks. She had a cervical polyp avulsed as an outpatient in 1948 and was then lost to follow up for 3 years.

In October 1951 she was referred to Mr C.D. Read at Hammersmith Hospital as she wished to conceive again. At that outpatient visit the systolic BP was not registrable on the sphygmomanometer and the diastolic reading was 190 mmHg. She was offered and refused a renal sympathectomy. It was decided that she should try for another pregnancy and she continued to work as a hairdresser. However in the autumn of 1952 she developed persistent occipital headache, dyspnoea on exertion, paroxysmal nocturnal dyspnoea, recurrent palpitations and

blurring of vision in the right eye. She was admitted as an emergency to the Hammersmith Hospital under the care of Professor John McMichael and here her association with the Hammersmith Hypertension Clinic began (Table 1).

On examination she had a tachycardia, gallop rhythm, bilateral crepitations in the pulmonary mid-zones and grade IV retinopathy with haemorrhages, small soft exudates and papilloedema. Supine BP was 230/160 mmHg and she had proteinuria. Routine haematology, plasma urea and serum albumin were normal. Chest X-ray confirmed cardiomegaly and pulmonary oedema and electrocardiogram showed left ventricular hypertrophy. Creatinine clearance was reduced at 35 ml min⁻¹. She was treated initially with a low salt diet, digoxin and once weekly injection of 2 ml of mersalyl. The blood pressure showed little response to hexamethonium bromide and she was started on subcutaneous pentolinium with gradual improvement in the diastolic pressure to 110–120 mmHg. Side effects included dry mouth, constipation and postural dizziness. Over the next month, however, the signs of congestive cardiac failure cleared. She was taught to inject herself subcutaneously with pentolinium and was discharged on 50 mg at 07.00 h, 60 mg at 15.00 h and 70 mg at 23.00 h. In February 1953 she was readmitted for stabilisation of pentolinium dosage as supine blood pressure was 225/140 mmHg, while erect it was 135/90 mmHg. At that time she was free of failure, there was some diminution of cardiac size and the papilloedema had regressed. She had, however, lost 4 stones in weight as the dryness of her mouth prevented her chewing and swallowing food properly. The pentolinium dose was adjusted and phenobarbitone 30 mg three times daily was added. In 1954 she was changed to oral pentolinium in the morning with subcutaneous pentolinium at night. Following this bilateral excision of bunions was performed under general anaesthesia. In 1955 oral reserpine became available and this was added to her regime.

In 1956 at the age of 35 she became pregnant again. At 16 weeks gestation blood pressure was 204/140 mmHg supine falling to 200/115 mmHg on standing.

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Table 1 Therapeutic milestones over 40 years in a patient with severe essential hypertension. She has attended Hammersmith Hypertension Clinic since 1952.

Date	Age (years)	Blood pressure (mmHg)		Therapy	Clinical event
		Erect	Supine		
1941	20	—	215/130	None	First pregnancy. LSCS at 26 weeks
1942	21	—	215/140	Phenobarbitone	Investigation of hypertension
1945	24	—	210/140	None	Investigation of infertility
1946	25	—	230/180	None	Second pregnancy. Stillbirth at 24 weeks
1947	26	—	220/160	None	Third pregnancy. Miscarriage at 7 weeks
1951	30	—	? /190	None	Investigation of infertility
1952	31	225/140	135/90	Hexamethonium— ineffective Pentolinium Digoxin Mersalyl	Investigation and treatment of malignant hypertension
1956	35	204/140	200/115	Mecamylamine Reserpine	Fourth pregnancy. APH at 34 weeks. Live male infant 1.8 kg.
1959	39	200/140	206/136	Mecamylamine Reserpine	Fifth pregnancy. Therapeutic abortion and sterilisation
1960	40	175/120	170/116	Mecamylamine Reserpine Hydrochlorothiazide	Congestive cardiac failure
1963	43	220/130	224/132	Methyldopa Hydrochlorothiazide	Poor control
1976	56	140/100	132/86	Methyldopa Bendrofluzide Digoxin	Onset of angina Atrial fibrillation
1981	61	118/82	110/80	Methyldopa Bendrofluzide Digoxin	Asymptomatic

The fundi showed only a small old exudate at the left macula. Pentolinum was stopped and oral mecamylamine 10 mg twice daily substituted. Reserpine was continued in a dose of 0.25 mg three times daily. In November 1956 she delivered spontaneously a male infant, weight 1.8 kg, following a small antepartum haemorrhage at 31 weeks gestation. The baby thrived and is now a physicist. Blood pressure following delivery was 170/125 mmHg. She was discharged well on mecamylamine, reserpine and digoxin.

Between 1956–59 blood pressure control was unsatisfactory, ranging between 170–230/110–150 mmHg supine. In 1959 she became pregnant for the 5th time. Therapeutic abortion and sterilisation was undertaken at 12 weeks gestation. In 1960 at a routine clinic visit she was noted to have ankle oedema and hydrochlorothiazide was introduced. In 1963 as blood

pressure control was still poor, mecamylamine was stopped and methyldopa substituted. Prior to this she had diastolic readings of around 130 mmHg. On methyldopa 250 mg three times daily together with hydrochlorothiazide 50 mg twice daily the pressure fell to 150/90 mmHg supine and 140/90 mmHg erect. She continued to do well until 1976 when she developed several episodes of retrosternal chest pain. Cardiac enzymes were not elevated and electrocardiogram showed atrial fibrillation but no evidence of infarct. The fast ventricular rate was controlled with digoxin. Following this she remained asymptomatic. She is normotensive and free of failure. She has normal renal function. Chest X-ray shows only cardiomegaly and electrocardiogram only atrial fibrillation and left ventricular hypertrophy. Presently she is maintained on methyldopa 250 mg twice daily, digoxin 0.25 mg daily and bendrofluzide 10 mg daily.