

Essential Hypertension During Pregnancy

By

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MANY a time essential hypertension accounts for various complications during pregnancy in a hypertensive woman, and as such, a basic knowledge of hypertension and its predominant features will be appreciated before the clinical course of essential hypertension in pregnancy is discussed.

The blood pressure is the force exerted by the circulating blood on the walls of the vessels. During the ventricular systole of the heart the pressure is the highest and during the ventricular diastole the pressure tends to fall reaching a minimum. These are termed as systolic and diastolic pressure respectively. In healthy individuals the blood pressure widely varies from 100 to 140 mm hg systolic and 60 to 90 mm hg. diastolic. The average normal is estimated to be about 125/75 mm hg. 140/90 mm hg. is considered as the upper limit of normal in an otherwise healthy adult. Emotional factors, muscular activity, fatigue, cold and smoking may bring about transient variations in blood pressure. A constant systolic pressure above 140 mm hg. is indicative of hypertension.

One of the commonest type of hypertension is the essential hypertension, the cause of which is yet unknown. This is usually unassociated with discoverable causes related to renal and endocrine diseases. The episode is more common in women than men. It presents itself in two phases namely the benign hypertension or the mild one, and the malignant hypertension or the severe form. In the former type, no primary cause can be discovered, the onset being insidious and asymptomatic. The blood pressure is often fluctuating in the early stages and later becomes permanently raised. After a few decades of life it may become symptomatic. The malignant type appears with or without a previous

history of long-standing benign hypertension. It is characterised by marked arteriolar degeneration prominently in the kidneys and retinae. Symptoms such as headache, palpitation, irritability, giddiness, lack of concentration, and mental confusion are more pronounced. Occasionally cerebral haemorrhage, convulsions and cardiac failure may be seen. The rise in the blood pressure is rapid and in majority of the cases the pressure remains as high as 220/120 mm hg. or above. The general condition of the patient progressively deteriorates if timely treatment is not rendered.

Having glanced into the main characteristics of essential hypertension, it is but justified to explain how the pregnancy takes its course when combined with this condition.

As already mentioned a hypertensive woman is prone to culminate an eventful pregnancy incorporated with obvious complications such as super-imposed toxæmia ranging from pre-eclampsia to eclampsia, intra-uterine death of the foetus, accidental haemorrhage etc. There are instances when a few of the patients with hypertension may go through an uncomplicated pregnancy and deliver normally, producing healthy living babies without exhibiting much side effects of hypertension. Perhaps the only possible explanation to the advent of complications in a number of patients due to hypertension is that younger group of hypertensive women show a greater tendency to develop toxæmia and majority of them are multiparae. Heredity and obesity are undoubtedly predisposing factors to this condition.

Diagnosis of Essential Hypertension

In a pregnant woman essential hypertension is believed to exist when blood pressure is observed to be above 140/90 on more than one or two occasions before the

twentieth week of pregnancy. The family history is of great importance in diagnosis, and this can be ascertained by proper method of taking history from the patients. The presence of hypertension existing in the family confirms the Mendelian dominant. It is difficult to assess at the same time that the case is not one of early pre-eclampsia unless the patient's blood pressure before pregnancy is known. Therefore differentiation between essential hypertension and pre-eclampsia often poses a problem during pregnancy. However in cases of pre-eclampsia blood pressure recedes to normal within a few weeks of delivery, whereas in cases of essential hypertension the blood pressure continues to persist. If the presence of blood pressure prior to the arbitrary period of 28th week of pregnancy is accompanied with proteinuria, the possibility of chronic nephritis must be ruled out by detail examination of the urine for haematuria, and urinary casts and also the kidney function tests undertaken. In a few patients when the blood pressure is over 160/100 enlargement of the heart and the evidence of renal impairment with retinal involvement are diagnostic of hypertension. Often there is a drop of about 10-20 mm hg. in the systolic pressure during the middle of second trimester in hypertensive pregnant women. But the pressure may rise again in the third trimester. Nevertheless, in a few cases there appears to be steady rise throughout the course of pregnancy. It is possible that a patient may first be seen with normal blood pressure due to fall of the pressure during the mid-term pregnancy and a subsequent rise may be mistaken as due to pre-eclampsia. In such a case the diagnosis can be confirmed by the observation of the patient post-partum. Persistence of hypertension following a toxæmic pregnancy is mostly due to existence all the time of essential hypertension

and this fact has been widely agreed. It is to be emphasised here that there is normally a slight fall in the blood pressure in antenatal mothers about the middle of pregnancy, despite the increase in the volume of blood and cardiac output, the cause being attributed to the relaxing effect of progesterone on the walls of the arteries.

Course of Pregnancy and Prognosis

The pregnancy is usually uneventful in an uncomplicated case of essential hypertension. If the blood pressure rises to higher levels the patient is subject to various undesirable complications which may be described as follows :

Superimposed Pre-eclampsia : It has been established that a pregnant hypertensive woman has specific tendency to manifest pre-eclampsia. A rise in the blood pressure by 20 mm hg. with appearance of albuminuria and oedema is suggestive of superimposed pre-eclampsia. In a few, condition of pre-eclampsia may advance and end in eclampsia. Albuminuria may develop at any degree of hypertension, although the incidence is more when the pressure is over 160 mm hg. The dangers of the superimposition of pre-eclampsia are manifold. Besides eclampsia, there is an increased risk of accidental haemorrhage and intra-uterine death of the foetus apart from permanent aggravation of hypertension ; and also the patient's expectation of life is comparatively shortened.

Intra-uterine death of the foetus : This event depends on two factors, namely, the degree of the blood pressure at the onset of pregnancy and the presence of toxæmia. The chance of intra-uterine survival of the foetus is remote when the blood pressure is above 150/100 at the beginning of pregnancy.

Accidental Haemorrhage : This occurs in a small group of patients, the condition often accompanying superimposed toxæmia. Many a time it manifests itself in the form of concealed accidental haemorrhage which is serious in nature.

Management of Pregnancy in the Hypertensive Patient

Careful observation is required throughout pregnancy for these patients. It is wise to hospitalise

them for a detail survey and frequent checkups. The patient should be advised to take as much rest as possible. In a milder case she has to confine herself to bed every afternoon even though she does not sleep, the rest being an essential part of the treatment. In severe cases absolute rest should be adhered to. Sound sleep at night must be encouraged and administration of sedatives in required dosage may be considered, if necessary. Blood pressure should be checked periodically depending on the severity of the condition. Use of hypotensive drugs in appropriate dosage is helpful in cases with tendency for a steady rise in the pressure. The psychological aspect also should be attended to by reassurance and avoidance of emotions and stresses. Examination of urine at frequent intervals is vital in these cases to detect presence of albuminuria and maintenance of accurate fluid intake and output record is invaluable.

Attention to regular evacuation of bowel and bladder should not be neglected. Undue gain in weight should be discouraged and the same may closely be watched throughout pregnancy. Dietetic alterations are important as a prophylactic measure against the occurrence of toxæmia. In case of obesity weight should be reduced by instituting a low calorie diet until satisfactory weight is reached and then the required calories of about 1,800 to maintain the same weight. As a rule, a diet low in fat and carbohydrate, at the same time complete in all of the essentials for body building is justifiable for these patients in order to prevent abnormal weight gain. It is well to avoid excesses in protein preferably limiting to 65-75 grams per day. A restriction on salt, condiments, and stimulants like tea, coffee, cocoa and alcohol with addition of more fresh fruits and vegetables in the diet is valuable against progressive hypertension. If there are no signs of toxæmia supervening and the blood pressure is not increasingly high, the pregnancy can safely be prolonged to term with adequate care. Should signs of pre-eclampsia be found developing the patient is to be promptly treated for pre-eclampsia. Further management of pregnancy will be based on how remarkably

the pre-eclampsia is brought under control. In cases with period of gestation over 36 weeks and the respond to the treatment is unsatisfactory, with deterioration in general condition, delivery should as far as possible be effected either by puncture of the membranes or caesarean section if need be. An episiotomy enables to reduce the effort of "PUSHING" in the mother and lessen the risk of intracranial injury in the infant during the perineal phase in a vaginal delivery, which is promoted by premature induction of labour. These patients demand comprehensive medical and nursing attention during labour and puerperium too. It should be borne in mind that services of a paediatrician in conjunction with skilful and intelligent nursing care may be required to rear these small and often sickly babies.

Sympathectomy in Hypertension

This operation has not been suggested as a part of the treatment of hypertension in pregnancy. It is useful in selected cases with high blood pressure and low pulse pressure. This is advantageous if the prospect for a successful pregnancy is determined to be very poor. The usual operation is bilateral lumbo-dorsal sympathectomy with removal from 8th dorsal to 3rd lumbar sympathetic trunk. Such surgery helps in removing the sympathetic vasomotor tone from a large segment of the systemic vascular system, resulting in a diminished peripheral resistance with an increased capacity of the vascular bed. Lapse of one year after the operation is advisable before a pregnancy. Generally it is noticed that pregnancy is safe in a patient who has undergone successful sympathectomy for hypertension. Since this operative procedure does not offer more satisfactory results than the medical treatment, the popularity for this line of treatment has waned.

In brief, essential hypertension being an odd and unfavourable condition when associated with pregnancy, it is proper for those actively engaged in the field of practical midwifery to be aware of this particular condition which occasionally manifests its adverse effects on the pregnant woman. Bearing in mind the utmost importance
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