Current Practice

MEDICINE IN THE TROPICS

Problems of Antenatal Care in the Tropics

S. HAROON,* M.R.C.O.G.

Obstetricians are familiar with the high standard of routine antenatal care given to pregnant women in western countries. Those of us working in the tropics and developing countries adopt the same principles of routine care. For antenatal care to be adequate the socio-economic conditions of the patient and the country must be borne in mind, for without this appropriate remedies cannot be applied to medical diseases. In textbooks published in the West there is little emphasis on poor socio-economic standards, unhygienic environments, malnutrition, and tropical diseases. The newcomer to obstetrics may therefore be bewildered and depressed when confronted with what he considers to be insurmountable problems, especially if he is working single-handed or on an isolated station. Nevertheless, adequate antenatal care is possible if patience, sympathy, ingenuity, and skill are brought jointly to solve the problems. In developing countries antenatal care is a challenge to the practitioner which taxes his resources to the utmost, but a healthy mother and child finally reward his efforts for the care given during this period.

Socio-economic Problems

In underdeveloped countries the income of the average man is under £5 per month. The immediate family as well as one or two relatives will be supported on this income. This factor must be kept in mind in prescribing so that drugs which are both efficacious and cheap should be selected. Distances may be long and transport infrequent and expensive, so sufficient quantities of drugs with necessary instructions should be given to cover long or irregular absences from the outpatient clinic. It is difficult to contact patients once they leave hospital because social services, voluntary organizations, and almoner services are negligible in number, and at times postal services are ineffective in crowded slums and isolated areas. A short talk to cover the whole period of pregnancy should be given, therefore, at the first visit, as patients frequently default or absent themselves completely until delivery is imminent.

Generally patients are illiterate, so all instructions regarding attendance, diet, and drugs need repetition. At times it is necessary to talk to the husband or relations regarding treatment. In most Middle Eastern and some Eastern countries patients are not familiar with the Gregorian calendar but are conversant with the Lunar calendar. In order to elicit the expected date of delivery it is advisable that the two calendars be correlated annually by the doctor (see Table).

Correlation of Calendars

Gregorian Calendar	Lunar Calendar
13 December 1966	1 Ramzan 1386
13 January 1967	1 Shawal 1386
11 February 1967	1 Zeqad 1386

Diet

Owing to economic problems a normal nutritious diet is often impracticable. The doctor should know the type of food available, its nutritional value, and cost. For example, while pregnant women in the West are advised two pints (1.1 l.) of milk daily, in view of the cost a quarter- or half-pint (150–300 ml.) of milk daily should be advised. Fresh vegetables are at times scarce or unavailable, and their value is usually destroyed by overcooking. Raw tomatoes and carrots provide some intake of vitamins and are cheap. First-class protein is expensive, but an egg and liver soup can be taken on alternate days. To get the optimum nutritional content of liver it is prepared as follows. A quarter-pound (120 g.) of liver is chopped. On this is poured three-quarters of a cup of boiling water. The whole is sieved and salt and pepper added to make it palatable. This ensures some intake of protein and contains iron, folic acid, and intrinsic factor. In season fruit is cheap and a small portion is advisable.

In many developing countries aid-giving organizations supply iron, calcium, multivitamin tablets, and other drugs. These should be dispensed with instructions for a specific period of time, as patients take a sceptical view about the efficacy of free drugs.

Admission to Hospital

Owing to transport problems a patient may need admission to hospital before delivery. Extra beds in hospital may be needed, or patients may be advised to move to accommodation with relations nearer the hospital. There are few Government or voluntary organizations to give help in the home, and often the husband gives up work to stay with the children. Loss of income may compel patients to refuse hospitalization. Problems that would normally require inpatient treatment may have to be treated and supervised by frequent visits to the clinic. Insistence on admission to hospital may drive the patients away from the outpatient department. A more lenient and compassionate attitude is necessary to accommodate these patients.

Medical Diseases

Anaemia.—Anaemia is the most important and commonest medical disease in pregnancy, and in most hospitals the major cause of death. The haemoglobin level of the average hospital patient is around 8–9 g./100 ml. A check should be made at every attendance so that attendants are alerted and an early diagnosis made.

Anaemia may be of a minor, moderate, or severe form. It is not rare to see patients with a haemoglobin level of 2 g./100 ml. The history and the appearance of the patient are helpful in diagnosis. The Talquist method of estimating the

* Medical Superintendent, Lady Dufferin Hospital, Karachi.

haemoglobin has an error of 5 to 15% but the method is simple and cheap. A more accurate estimation is obtained by Sahli's method, but as this requires some skill and time it should be reserved for moderate and severe degrees of anaemia. If facilities are available a detailed blood examination and marrow biopsy should be undertaken. A moderate degree of anaemia, below a level of 8 g./100 ml. haemoglobin, merits intensive treatment. Severe forms require admission to hospital. The underlying cause of the anaemia may be malnutrition, malaria, helminthiasis, dysenteries, tuberculosis, or tropical fevers. A careful history will reveal most of these diseases but the patient rarely volunteers information, and it is necessary to ask leading questions.

Malnutrition.—The diet should be discussed by the doctor. The limitations of a nutritious diet owing to economic problems have been mentioned and supplementation of diet is generally necessary. If cost is not a consideration, supplementation is on the same lines as in advanced countries. For the lowest economic group aid-giving agencies supply powdered milk, wheat, cooking fat, and drugs in the form of tablets of multi-vitamins, calcium, and capsules of vitamins A and D.

Malaria.—The patients should be questioned about intermittent fever. The presence of malarial parasites in the blood film and chronic enlargement of the spleen are rare.

Helminthiasis.—About half the hospital patients in the tropics suffer from worm infestation. The common ones (depending on the locality) are round-, thread-, hook-, and tapeworms. A history of tapeworms or roundworms is generally forthcoming, but threadworms are considered to be of minor importance and are not usually mentioned. In moderate and severe cases of anaemia a stool examination is essential and it is necessary to be familiar with the various forms of ova. Roundworm infestation presents at nausea, anorexia, vomiting, abdominal pain, diarrhoea, and even intestinal obstruction. Occasionally roundworms are ejected in vomits after a general anaesthetic. Treatment of worm infestations is discussed by Davidson.[1]

Dysenteries.—Amoebic dysentery usually runs a chronic course with a history of abdominal pain and loose stools alternating with constipation. Examination of the stools will reveal mucus in which microscopy shows amoebic cysts to be present. Treatment is by diloxanide furoate tablets in ambulant patients (500 mg. three times daily for 10 days) and side-effects are few. Acute attacks require inpatient treatment. Bacillary dysentery is characterized by large loose stools with a purulent exudate. Mild forms respond to phthalyl-sulphathiazole tablets 2 g. initially followed by 1 g. four-hourly ; oral fluids only are given until improvement occurs. More severe forms with dehydration require admission to hospital for intensive therapy and electrolyte balance.

Tuberculosis.—Pulmonary tuberculosis is common in the tropics. Although the modern trend is to *x*-ray the chests of all pregnant women, this may not be possible owing to pressure of work on free radiographic units. It is essential to arrange with a radiographic unit to *x*-ray suspicious cases. Often after diagnosis is confirmed the patient volunteers information that she is under treatment. Concealment is due to the impression that tuberculosis carries a social stigma.

Liaison with a Government centre for routine treatment is helpful, as sensitivity tests of organisms to drugs are usually not possible elsewhere.

Treatment of Anaemia

For prophylactic treatment throughout pregnancy, the cheapest preparation of iron—ferrous sulphate—should be chosen. The dose is 180 mg. three times daily, but few patients tolerate this dose of iron initially and our policy is to start with one tablet a day, gradually increasing to two to three tablets. To improve absorption of iron, vitamin C 100 mg. t.i.d. should be prescribed. To ensure a regular intake of iron patients must be questioned at every attendance as often the drug is discarded because of side-effects.

A moderate degree of anaemia exists at a haemoglobin level below 8 g./100 ml. The form of treatment will depend on the duration of pregnancy. In patients already under treatment persistent anaemia may be due to non-absorption of iron in the small intestine or intolerance of oral iron. Parenteral iron may then be necessary. Intravenous infusion of iron by the total dose technique[2] is rapidly effective and time saving and is used frequently, but the cost to the average patient is prohibitive. Recourse must then be had to intramuscular iron.[3] Folic acid is required in pregnancy,[4] and 5 mg. daily should be given to all patients with anaemia in pregnancy. Pernicious anaemia in pregnancy is extremely rare in our area.

Severe anaemia is present when the haemoglobin level is below 7 g./100 ml. It is still the commonest cause of maternal mortality in most developing countries. The patient should be admitted to hospital and investigated, and rest and adequate diet provided. Treatment of a patient with a haemoglobin level below 7 g. is by blood transfusion, and those below 4 g. in pregnancy or 6 g. in labour are treated by exchange transfusions. We have not had the laboratory facilities of Philpott, Foster and Crichton[5] and have relied on clinical judgement and supervision during the procedure. The results have been extremely satisfactory over a period of six years.

Diseases of Pregnancy

Pre-eclamptic Toxaemia.—About 18–20% of patients in hospital practice suffer from this complication. When feasible these patients should be admitted to hospital and treated conservatively. In minor forms of pre-eclamptic toxaemia when socio-economic conditions prohibit admission to hospital this rule must be relaxed. The patient should be treated conservatively in her home, and instructed to attend the clinic twice a week. Frequent visits to the doctor alert the patient and admission will then generally be accepted should the response to home treatment be poor. In multiparae with hypertension only, we have relaxed the criteria for admission to hospital till the blood pressure rises to 150/90 mm. Hg. These patients are seen more frequently than the average patient and results to the mother have been satisfactory in the past six years.

Antepartum Haemorrhage.—As radiography for localization of the placenta is a highly skilled procedure and unavailable in most developing countries, conservative treatment becomes a problem. Patients who bleed early in the third trimester object to prolonged stay in hospital. A large number leave hospital against advice, and explanation and persuasion proves ineffective. All that can be done for these women is correction of the anaemia and investigation of blood group and Rh factor. This advice may seem superfluous to those working in the West ; but in developing countries because of cost the procedure is confined to patients in whom complications may ensue. Patients leaving hospital against advice should be warned against permitting internal examination outside hospital. These patients should be instructed to return to hospital when bleeding recurs. Nearer term a clinical diagnosis to exclude placenta praevia may be made, by making the foetal head descend into the pelvis. Finally palpation of the foetal head in the four fornices may be used to exclude the presence of the placenta.[6]

Multiple Pregnancy.—Multiple pregnancy is always associated with premature births and neonatal deaths. During antenatal care the necessity of rest should be emphasized to the patient, who should be instructed to avoid manual work. Pre-eclamptic toxaemia is not uncommon in multiple pregnancy, and these patients should attend antenatal clinics more frequently so that toxaemia can be detected early. The necessity for hospital delivery should be repeatedly stressed.

Unstable Lie.—This is commonly seen in grand multiparae. It may be necessary to admit such patients if the hospital is at

a distance from the home. When an unstable lie is recurrent and the patient refuses admission she should be instructed to report in early labour. Careful explanation will avoid cases of obstructed labour and ruptured uterus in labours conducted outside hospital.

Breech Presentation.—When facilities are available *x*-ray pelvimetry should be done for primigravidae, though the results should not have precedence over clinical assessment and a short trial of labour.

Previous Caesarean Section.—Early in pregnancy the need for hospital confinement should be stressed, with the explanation that a section is not necessarily repeated. It is not unusual for patients to be misled by friends who insist that confinement is a natural process and in the home will invariably result in spontaneous delivery. Some patients therefore attend antenatal clinics regularly but avoid admission until obstructed labour or rupture of the scar occurs.

Uncertain Dates.—A large number of patients do not remember the date of their last menstrual period. Others conceive during lactational amenorrhoea, as breast feeding is often prolonged for one to two years. Unless the weight of the foetus can be assessed with some accuracy, induction for obstetrical complications may result in premature birth. Induction for postmaturity is therefore rarely undertaken. If a patient is seen in early pregnancy the fundal height should be carefully assessed so that the expected date of delivery can be evaluated with as small a margin of error as possible. Mistakes in dates are so common that clinical assessment is preferable.

Bad Obstetrical History.—Grand multiparae with no living children are not uncommon problems. In giving their history some patients do not differentiate between stillbirths and neonatal deaths: a stillbirth is often considered a miscarriage and frequently only live births are mentioned. Infant mortality in the tropics is high, and this, too, is frequently confused with a bad obstetrical history. It is often found that the bad history can be related to factors such as multiple diseases, malnutrition, and employment in manual work until term.

The treatment is eradication of disease and advice on complete rest. Admission to hospital should be recommended when rest is impossible at home.

Grand Multiparae.—The incidence of grand multiparae is in the region of 20% of all obstetrical admissions. As in the West the grand multipara is at greater risk during pregnancy and labour. To the recognized complications must be added malnutrition, tropical diseases, osteomalacia, and manual work. Unless due attention is given to these women the risk of mortality is high.

In a busy outpatient clinic osteomalacia may not be diagnosed if the patient is first seen on an examination table. Pain in the back and limbs is so common in pregnancy that the complaint may go unheeded. Muscular weakness and incoordination become evident if the patient walks to the examination table in the presence of a doctor. In established cases the pelvis is of a triradiate shape. The disease generally affects multiparae and is due to the deficiency of vitamin D so that calcium absorption is poor, or to a deficiency of calcium in the diet. Prophylactic treatment is given by supplementation with both calcium and vitamin D during the antenatal period. In established cases cephalopelvic disproportion may lead to obstructed labour. Towards term grand multiparae should be carefully assessed for disproportion.

The *place of confinement* should be discussed early in pregnancy. Multiparae tend to avoid hospital delivery because it entails an absence from the home of several days. As home deliveries are often conducted by quacks, the rate of complications in labour and puerperium is high. Experience shows that hospital delivery with a postpartum stay of even 24 hours is preferable to home delivery. Instruction regarding rest and elementary hygiene in the puerperium should be given to patients returning home early. This is satisfactory, and readmission to hospital for puerperal complications is uncommon.

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FORENSIC MEDICINE AND TOXICOLOGY

Mental Disorder and Delinquency

JOHN S. BEARCROFT,* M.D., M.R.C.P., D.P.M.

General practitioners must frequently encounter disturbed patients who are delinquent or potentially delinquent. Medical advice on abnormal behaviour may be sought by many social agencies, including the police and probation officers, and it may obviate needless and wasteful litigation as well as alleviate human distress and expedite essential treatment. Too many mentally sick are remanded in custody for trivial offences when their need is for hospital treatment rather than prison. Earlier diagnosis and psychiatric assessment of abnormal behaviour would remedy this. A therapeutic and preventive attitude towards the mentally abnormal offender is now readily acceptable to the courts, under the terms of the Mental Health Act of 1959, and treatment is increasingly ordered for those suffering from one of the many types of personality disorder and for psychopaths.

Extent of Problem

In a study of habitual criminals in prison West[1] could find only 12% who were psychologically normal, and from other evidence we know that the size of the prison population and the number of available psychiatric beds tend to be inversely related. Criminals who demonstrate abnormal behaviour suggesting a need for psychiatric assessment may have committed any crime from wandering to murder. Every category of mental disorder may be found among delinquents, though some forms of mental abnormality and certain types of delinquency are frequently associated. Most schizophrenics, for example, who have been brought before a magistrate will either have stolen a small item of food, such as a bottle of milk, or have been found wandering.

Offences such as wandering, begging, repeated drunkenness, or being in possession of dangerous drugs entail medical and social problems. Recognition of the existence of a mental illness or of mental subnormality in an offender is essential in the interests of the patient and of justice. In certain parts of the country as much as 5% of the total number of adult offenders are referred to a psychiatrist because of abnormal behaviour. Abnormal behaviour due to mental disturbance is

* Consultant Psychiatrist, Kingston and Long Grove Hospitals.