

General Practice Series

THE PUERPERIUM AND ITS COMPLICATIONS

L. J. ABRAMOWITZ, M.B., CH.B. (CAPE TOWN), M.R.C.O.G.,

Department of Obstetrics and Gynaecology, University of Cape Town and Cape Provincial Administration

The puerperium is defined as the period which extends from the end of the third stage of labour until the complete return of the genitals to the non-pregnant state. Its length is from 6-8 weeks. However, there is never an absolute return to the exact pre-pregnant state, for there are permanent changes in the uterus, cervix and perineum. In common usage the puerperium refers to that period of readjustment and rest after the birth of the baby which extends over the first 2-3 weeks.

THE PHYSIOPATHOLOGY OF THE PUERPERIUM

Following normal uncomplicated labour, the general condition of the mother is good. (After complicated labour there may be varying degrees of shock, anaemia and fatigue, depending on the type of complication.) The patient is delighted with the arrival of her baby; the trials of the late first and second stage have been left behind, and there is visible delight on her countenance. A short period of apyrexial shivering often occurs. In many cases, as the days go by, emotional instability follows the mental exhilaration of childbirth. The 'maternity blues' is a well recognized entity. Patients may worry excessively about the baby. Insomnia may develop, which requires prompt attention, for the mental state may progress to one of puerperal insanity. Should the depression not respond to treatment, and become intractable, breast feeding should be discontinued.

After delivery the temperature and pulse are normal. There may be a slight rise of temperature in the first 24 hours. A further rise may occur with engorgement of the breasts, but this generally settles in 24-36 hours. Apart from this a raised temperature must be considered abnormal.

Changes in the Blood

The physiological anaemia of pregnancy is corrected and a stable haemoglobin level is reached by the 5th-7th day. In the under-privileged classes anaemia is common. This should be treated in the antenatal period, and also by prescribing a liberal iron intake in the puerperium. In severe grades of anaemia blood transfusion will be necessary. In the moderate grades iron may suffice, but in the presence of sepsis it is wiser to enhance the patient's resistance by blood transfusion. The latter carries a small risk *per se*, and it should not be given casually without a definite indication.

The leucocyte count, which may rise to 20,000 per c.mm. during labour, returns to normal within a few days.

Gastro-intestinal Tract

After prolonged labour there may be some distension. Constipation is common in the puerperium and during

lactation. In the early days it is probably due to birth trauma, and thereafter it may be caused by loss of fluids by the skin, the urinary system and the breasts. Mild purgatives and glycerine suppositories produce satisfactory results in the vast majority of patients. In extreme cases enemata are necessary.

Urinary Tract

Micturition is often difficult and painful after delivery. This may result in incomplete emptying of the bladder, and a favourable environment for infection thus arises. Repeated catheterization during labour and in the puerperium also favours infection and, as always, strict aseptic precautions must be observed. If there is doubt about the complete emptying of the bladder the amount of residual urine should be assessed. If it is more than 2 oz. a self-retaining catheter should be inserted and left *in situ* until the amount of residual urine is reduced to 2 oz. or less. Urinary infection was responsible for 18 of 202 cases of puerperal morbidity which occurred in the maternity hospitals under the aegis of the University of Cape Town in 1956. This low incidence is no doubt due to a large extent to prophylactic chemotherapy. The treatment of urinary infections has been greatly simplified by antibiotics, and sensitivity tests should be performed in cases which do not respond to simple measures such as sulphonamide therapy. Stress incontinence should be treated by perineal exercises. It is often of a temporary nature and disappears with involution. In cases in which vaginal delivery has been very difficult, or where it is feared that the blood supply to the bladder may have been impaired by prolonged pressure of the foetal head, it is wise to insert an indwelling catheter for 5-7 days to prevent possible fistulae.

Genital Tract

The changes, which during pregnancy were progressive, are now retrogressive and are known as involution. Immediately after delivery the level of the fundus of the uterus is slightly below the umbilicus. It is a globular organ and it can be moved freely in the abdomen because of relaxation of the ligaments. On the first day the uterus rises slightly owing to filling of the rectum and bladder. Thereafter the level of the fundus falls so that by the 12th day it is no longer palpable per abdomen. Subinvolution occurs if placental products are retained, and in the presence of infection. The placental site decreases markedly with contraction of the uterus after delivery. Its nodular, irregular surface is virtually an open wound and may easily become infected. The tissues at the placental site exfoliate and the

surface is gradually covered by endometrium from the surrounding basal layer.

The *lochia*, which contains red blood corpuscles, leucocytes, fibrin, degenerate decidual cells and after a few days mixed organisms, are red for the first 3-4 days, and then become paler and later yellowish. Not infrequently there is a recurrence of red lochia in the first few weeks. With decomposition the lochia have a characteristic odour, and in cases of infection may become offensive.

The *cervix* is frequently lacerated during labour, and it can be seen or felt hanging loosely in the vagina after delivery. For the next few days it will admit 2 fingers and it becomes less congested. The squamous epithelium may not grow completely over the external os and frequently a cervical erosion may be found at the post-natal examination. The vagina gradually regains its tone and rugae reappear in about 3 weeks. The perineum may be lacerated and oedematous after delivery. The original tone of the perineal muscles is rarely regained completely, and there is some degree of laxity of the tissues, which may be improved with post-natal exercises.

The major complications in the genital tract in the puerperium are haemorrhage and infection.

Postpartum haemorrhage following delivery of the placenta is generally due to an atonic uterus with or without placental remnants. It may also be due to lacerations of the uterus, cervix or vagina, and rarely to afibrinogenaemia following accidental haemorrhage. The placenta must be inspected in every case to ensure that it is complete and that the possibility of placenta succenturiata does not exist. The bladder must be emptied by catheterization because uterine contraction is much improved in the presence of an empty bladder. Oxytocic drugs such as ergometrine, 0.5 mg. intravenously and pitocin, 2.5 units intramuscularly or 2.5 units given intravenously in a vacolitre of glucose water over a period, are invaluable. The uterus must be 'rubbed up' and constantly palpated to ensure that it does not relax. In the vast majority of cases the above treatment, with intravenous infusion or blood replacement, will suffice. Should they fail, or should there be evidence that the placenta is not complete, the patient should be anaesthetized and manual exploration of the uterus should be carried out, for there may be placental remains or the uterus may, in fact, be ruptured. The cervix and vagina must be inspected under a good light for possible sources of the bleeding. Bimanual compression may be of temporary value. Should the bleeding continue in the absence of any obvious cause, an intra-uterine plug (6 feet of 6-inch gauze) should be inserted and left *in situ* for 48 hours under prophylactic chemotherapy. The blood-clotting time should be noted. If one is dealing with a case of afibrinogenaemia the treatment is to administer fibrinogen or fresh blood. In very rare cases the bleeding may be so intractable as to make hysterectomy a life-saving procedure.

Secondary haemorrhage (i.e. after 24 hours) is not common. Mild cases may be treated by oxytocic drugs and careful observation. In cases of recurrent or moderate bleeding the uterine cavity must be explored.

Infection. Semmelweis, as one of the early fighters in the war against puerperal sepsis, would be most impressed if he could see the progress that has been made in the battle. In 1956 there were only 105 morbid cases with genital

infections among 6,898 deliveries in the maternity hospitals under the aegis of the University of Cape Town. Amongst these there were no maternal deaths. Much can be done to prevent puerperal sepsis by careful aseptic technique and prophylactic chemotherapy where it is thought to be indicated. Whatever the pathology of puerperal sepsis, all forms are treated by isolation and chemotherapy, either oral, intramuscular or in severe cases by intravenous infusion. A cervical or high vaginal swab should be taken and the organism isolated so that its drug-sensitivity can be assessed. The very rare cases of gas gangrene must be treated with antiserum and large doses of penicillin (in the region of 8-10 million units per day). It should be borne in mind that even though puerperal sepsis is now a rare cause of death, it may lead to impaired fertility and chronic pelvic invalidism.

Venous Thrombosis

Among 6,898 deliveries in 1956, there were 3 cases of venous thrombosis and 1 case of pulmonary embolism. Predisposing factors are said to be anaemia, sepsis and previous phlebothrombosis. It is highly probable that early ambulation and leg exercises reduce the incidence of thrombosis. Apart from these measures the clinician should be on constant guard for the earliest signs of the condition. Sometimes the diagnosis may be difficult. Inflation of a blood-pressure cuff to 40 mm. of mercury on the thigh may produce acute pain in the phlebotic vein of the calf. With release of the pressure the pain should dramatically disappear.¹ In the established case anticoagulant therapy should be instituted. When the calf tenderness has disappeared the patient is allowed out of bed, but anticoagulant therapy should still be continued for a number of days.

Embolic phenomena very rarely follow superficial thrombophlebitis. The response to the application of heat in one form or another and chemotherapy is excellent.

Care of the Breasts, Lactation and Breast Feeding

Attention should be paid to the breasts during the antenatal period. If the nipples are flattened or retracted, 'Woolwich' nipple shields may be worn with good effect during the last few months of pregnancy.

Shortly after delivery the baby should be placed at the mother's side. If the uterus is atonic, contraction may be stimulated by putting the baby to the breast at this early stage. Provided that the mother and baby are both well, the baby should be put to the breast once or twice on the first day, 2-3 times on the second day (for not longer than 2 minutes on each side), and thereafter 3- or 4-hourly according to the weight of the baby. Prolonged feeding on the first 2 days may result in cracked nipples since only small amounts of colostrum are present. After 48-72 hours the breasts become engorged and milk is secreted. Excessive engorgement may be very painful, and it may be relieved by the administration of stilboestrol (5 mg. twice a day for 1-2 days) and analgesics, and a comfortable brassière.

A poor milk supply may be stimulated by encouragement, a large fluid intake, the administration of Lugol's iodine, and expression of the breasts after feeds.

Cracked nipples are a trying problem in the puerperium. Apart from causing mental anguish and much physical discomfort, the condition may progress to mastitis and breast abscess. A most important aspect of treatment is the diminution of trauma to the injured nipple. For 24 hours

the baby should not be put to that breast, which should be manually expressed. Applications such as gentian violet and Friar's balsam may prove helpful. A most useful aid is the application of lead nipple shields. Occasionally the condition is so severe that breast feeding must be discontinued.

Mastitis must be recognized early and treated by chemotherapy. Once an abscess has developed, breast feeding should be discontinued and the abscess incised.

Degrees of fanaticism vary greatly with regard to breast feeding. I do not agree with the maxim, 'Breast feeding at any cost'. Difficulties do arise, and if they cannot be overcome after a fair trial, there are excellent substitutes for breast milk.

SUMMARY

Many of the physiological changes of the puerperium are discussed, in relation particularly to the mental state, changes in the blood, the gastro-intestinal and urinary tracts, the genital tract, and the breasts.

Although the fluid emotional states of the puerperium

remain physiological in the vast majority of cases, the early diagnosis and treatment of psychopathic states is important.

Anaemia may result in much chronic ill-health.

The common urinary complications are, as a rule, easy to treat. One should be aware of the occasional over-distended bladder, and fistulae are more easily avoided than treated.

The causes and treatment of postpartum haemorrhage in the puerperium are discussed. The treatment of puerperal infection has been greatly simplified except with resistant organisms.

Venous thrombosis, though rare, remains a serious problem. The incidence is probably decreased by early ambulation and the prevention of infection and anaemia. anticoagulant therapy is recommended in the established case.

The problems of breast feeding such as agalactia, engorgement, cracked nipples and breast abscess are discussed.

REFERENCE

1. Marino, D. J. and Fuchs, M. (1958): *S. Afr. Practit.*, 3, 47.