EMERGENCIES IN GENERAL PRACTICE

EMERGENCIES IN THE PUERPERIUM

BY

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When the third stage of labour is safely over and the mother rests happily with her babe, the fears of past months are forgotten. No hint of danger should mar her peace, but both doctor and nurse must be aware that emergencies may still arise. Sorrow can replace joy all too swiftly. Complications of the third stage have been described elsewhere in this series.* Here I shall deal only with puerperal emergencies occurring during the 14 to 21 days after delivery. Appropriate treatment is suggested and where possible an indication given of how the emergency could be avoided. Toxaemia, haemorrhage, and infection, the redoubtable trio of pregnancy, are also major causes of puerperal complications.

Toxaemia

Eclampsia, vascular accidents, anuria, and acute yellow atrophy can all occur in the puerperium. Hypertensive encephalopathy is a rare complication which may be confused with eclampsia, but fits occurring for the first time more than 24 hours after delivery are unlikely to be eclamptic. Toxaemic complications are usually due to inadequate antenatal care.

Post-partum eclampsia seldom occurs later than 12 hours after delivery, and every hour thereafter reduces the danger. Headache, rising blood pressure, and restlessness usually herald convulsions, but they can occur with little warning. Sedatives should be given immediately, and paraldehyde, 5 ml. intramuscularly, is safe and rapid in action. The airway must be kept clear and the patient should be turned gently from one side to the other every two hours to reduce the chance of basal congestion. Specialist advice is advisable and special nursing essential to ensure the avoidance of light, noise, and other fit-provoking stimuli, as well as to report the earliest signs of returning restlessness and to record the pulse rate and blood pressure at least every half-hour. Intramuscular phenobarbitone, 0.2 g., sodium amytal orally, 0.25 g., or intramuscular paraldehyde, 5 ml., can be repeated as necessary. Hypotensive drug therapy is valuable but can be dangerous. It requires hospital supervision and will not be described here. The eclamptic patient is safer in hospital than at home, but transfer at the wrong time or under unsuitable conditions can be fatal. The emergency obstetric services operating from many of the hospitals in Great Britain have proved life-saving in these cases and should be summoned if available.

Hypertensive encephalopathy requires immediate and prolonged control of the blood pressure. Hypotensive drugs or conduction anaesthesia are indicated but require hospital supervision and do not come within the scope of this article. The hypertensive patient is not suitable for domiciliary confinement. Vascular accidents include haemorrhage, thrombosis, and emboli, and, of these, haemorrhage and thrombosis are often associated with toxaemia. Cerebral haemorrhage can be fatal in eclampsia (imminent or actual), and cerebral thromboses are likely to occur if there is a sudden fall of blood pressure associated with shock, anaesthesia, or hypotensive drug therapy. To be forewarned is to be forearmed.

Acute yellow atrophy is a rare and usually fatal complication, characterized by rapidly progressive jaundice. It can

occur in association with severe toxaemia but is particularly apt to follow repeated chloroform anaesthesia. Chloroform should never be administered to a toxaemic patient. It is comforting to remember that more women are jaundiced in the puerperium because of gall-bladder disease or infective hepatitis than from acute yellow atrophy.

Anuria is particularly apt to follow accidental haemorrhage and severe toxaemia, but can occur in association with shock in a traumatic labour, after incompatible transfusions, in clostridium septicæmia, and with adrenal haemorrhage. Catheterization differentiates anuria from acute retention. Whatever the cause, it is essential to obtain the best available second opinion. The primary cause demands urgent treatment, and intravenous fluids should be administered only under carefully controlled conditions. The necessary fluid and nourishment can be given by a gastric drip or, if this cannot be tolerated, by a "polythene" cannula passed through the saphenous vein into the inferior vena cava. The special supervision and nursing required† demand hospital treatment. Recovery can follow many days of complete anuria, but successful treatment necessitates skilled teamwork and biochemical control. With modern transport it is hard to imagine an area in Britain so isolated that this could not be arranged.

Acute Retention

The more traumatic the labour the more likely is retention of urine to occur. The puerperal bladder holds 40 or more ounces (over a litre) without discomfort, and it is important that distension should be avoided. It is easier to lose bladder tone than to regain it. A puerperal diuresis is usual and many litres of urine may be excreted in a day. It is therefore essential to catheterize if the patient cannot void her urine. If there should be any doubt that the bladder is not being completely emptied it is wise to catheterize each evening after spontaneous micturition until the residual urine is less than 2 oz. (57 ml.). The administration of a urinary antiseptic such as sulphadimidine or sulphafurazole, 0.5 g. four-hourly, is also wise.

Haemorrhage

Haemorrhage may occur at any time in the puerperium but is most common during the first ten days. Bleeding is usually due to retained placental tissue or separation of healing cervical, vaginal, or perineal tears. Retention of placental tissue is the most common cause. The retained tissue may be an accessory lobe or only a fragment of placenta. Severe haemorrhage can be caused by a piece as small as a fingernail. Careful inspection of the placenta at delivery, and immediate exploration of the uterus if it is not complete, would avoid this complication. Sponge forceps, used gently so as to avoid perforation, are excellent for exploring the uterus. Subinvolution, uterine tenderness, and periodical hypogastric pain, with increased lochia, all suggest that the uterus is not empty.

Bleeding may be sudden and severe, and occurs typically on or about the tenth day. Intravenous ergometrine, 0.25 mg., is usually effective in stopping the haemorrhage. A heavy loss demands transfusion with suitable rhesus-compatible blood and the prevention of further bleeding

*"Post-partum Maternal Collapse," by Miss Josephine Barnes (*British Medical Journal*, May 28, 1955, p. 1333).

†For details see G. M. Bull, A. M. Joekes, and K. G. Lowe, *Lancet*, 1949, 2, 229; and G. M. Bull, E. G. L. Bywaters, and A. M. Joekes, in *Modern Trends in Obstetrics and Gynaecology*, p. 275. 1950. Butterworth, London.

by evacuation of the uterus. Dextran infusion should be used only if the patient's condition is serious and blood is not available. Serum for cross-matching should be collected before the infusion is begun. As soon as interference is justified (systolic pressure of at least 100 mm. Hg and a pulse rate of less than 100 a minute), intravenous ergometrine, 0.25 mg., is repeated, a catheter passed, and under light anaesthesia the uterus is explored with a sterile gloved finger or sponge forceps. The danger of the patient inhaling vomit must be remembered, and where possible operation should be deferred if fluid or food has been taken recently. A low spinal anaesthetic is safe under such conditions. Cervical dilators are seldom necessary, but if required should be used to size 20 Hegar to make adequate digital exploration possible. A hot douche of "dettol" (temperature 118° F. (47.8° C.) in the can) with a flushing curette washes the cavity clear, promotes uterine contraction and retraction, and will prevent further blood loss. The risk of perforating a soft uterus makes extreme gentleness essential. Iron should be given subsequently until the blood picture is normal.

Secondary haemorrhage from lacerations can be alarming, particularly from cervical tears. The careful inspection necessary to establish the site of bleeding requires a good light, a speculum, and sometimes an anaesthetic. If the haemorrhage permits it is wise to postpone examination until facilities are available for packing, ligating, or underpinning the bleeding point. Oedematous and infected tissue can make suturing difficult, and an emergency measure is to give a hot vaginal douche (temperature 118° F.—47.8° C.) and intramuscular morphine, $\frac{1}{2}$ to $\frac{1}{4}$ gr. (11–16 mg.). These will usually arrest bleeding, at least temporarily, and allow the necessary plans to be made for more effective treatment should it recur. Sometimes haemorrhage is associated with the breakdown of an episiotomy or a perineal tear. It is commonly held that the wound should be left to granulate and a secondary repair be performed, if necessary, months later. But this condemns the mother to endure discomfort, and possibly loss of anal control, for many months, and makes it necessary for her to leave her baby at a later date, when it may be difficult to do so. All this is unnecessary. A secondary repair should be performed as a planned procedure at the time of the initial breakdown or within a few days of it.

Technique of Secondary Repairs

Before operation the lower bowel is emptied by an enema. The wound is opened widely and any remaining suture material removed. If the wound is obviously infected a swab is taken to discover the infecting organism and the drugs to which it is sensitive, local eusol dressings are applied, and operation is deferred until the wound is clean. The essential points in the repair are to define clearly the various layers—vaginal mucous membrane, anal sphincter, and anal and rectal mucous membrane, if these have been damaged. Oedematous tissue tears easily, but if handled gently can be mobilized freely to expose the upper limits of an anal or rectal tear.

The wound is then resutured in layers, using No. 1 chromic catgut on a fully curved round-bodied needle. The bowel mucous membrane is closed with interrupted Lembert figure-of-eight sutures, and it is essential that the first stitch should begin above the upper angle of the tear. The submucosal layers are joined in this way, inverting the actual mucosa into the lumen of the bowel. Failure to place this stitch above the upper angle of the tear is the usual cause of the primary breakdown and of the development of a recto-vaginal fistula after the repair of a third-degree tear. If the sutures are tied tightly they will cut out. The external sphincter is secured with at least two interrupted sutures, and three more are used to bring the levator muscles together to obliterate the space between the bowel and vaginal suture lines. The vaginal mucous membrane is then sutured from above down. In a secondary repair the skin edges are best

approximated by deep nylon sutures, tied just tightly enough to approximate the skin edges. They are removed on the tenth day.

Fistulae

Fistulae are uncommon complications of the puerperium, but if they arise they can cause acute distress. Rectovaginal fistulae are more common than vesicovaginal ones, and they are usually caused, as described above, by the inadequate repair of a third-degree tear. The passage of flatus, faeces, or urine *per vaginam* is most likely to occur about the tenth day owing to separation of sloughs. Careful examination is necessary with a good light and adequate exposure. Severe stress incontinence or retention with overflow may be mistaken for leaking due to a fistula unless this examination is made.

The treatment of fistulae is not an emergency procedure. Small wounds will heal spontaneously, and the repair of those that do not should be entrusted to a gynaecological surgeon.

Urinary Tract Infections

A typical cystitis raises few problems in either diagnosis or treatment, but in the refractory case a catheter specimen should be investigated bacteriologically and the sensitivity of the organism determined before prolonged treatment is given. Although usually due to *Bact. coli*, the infection may sometimes be caused by other organisms, including streptococci and staphylococci. A more difficult emergency to diagnose can be an acute puerperal pyelitis. In its early phase there may be no pain, no urinary symptoms, and only rigors with or without clinical shock, suggesting an acute catastrophe. This is a contrast to the classical picture of pyelitis of pregnancy. The pulse rate is elevated less than one would expect from the recurring hyperpyrexia and may be no higher than 100–110, even with a temperature of 104° F. (40° C.) or more. The urine is strongly acid, and even in the early stages a specimen viewed in a test-tube has an opalescence due to heavy invasion of coliform organisms. There may be only an occasional pus cell. The pulse-temperature relationship helps to differentiate the condition from puerperal septicaemia, in which the same hyperpyrexia and rigors may be found but with a greatly elevated pulse rate. Response to adequate treatment is good. Sulphonamide therapy with a liberal fluid intake can be expected to control the pyrexia within 48 hours. With preparations such as "sulphatriad," sulphadimidine, or sulphafurazole, an initial dose of 2 g., followed by 1 g. four-hourly until the temperature is normal, and then 0.5 g. three times daily for five days, is usually sufficient.

Mammary and Genital Infections

Acute engorgement of either a sector or the whole of the breast may occur during the first 72 hours. It causes pain, pyrexia, and axillary adenitis. If not relieved infection and abscess formation may follow. Codeine or its equivalent and the local application of heat relieve the pain, after which the breast or the affected sector should be gently emptied. Massage towards the nipple is usually adequate, but if there is difficulty in emptying a blocked duct 2 units of posterior pituitary extract, injected intramuscularly, will produce the necessary relaxation. Care must be taken to avoid intravenous injection, as this can produce severe and even fatal collapse. If lactation is profuse and the same sector becomes recurrently engorged it is not necessary to wean the child. Small doses of stilboestrol, beginning with 0.5 mg. daily, will control breast activity and permit feeding without undue engorgement.

If infection develops, as shown by the characteristic signs of pain, redness, and oedema, penicillin, one million units daily, should be given. This may abort the attack. If it fails the affected breast should not be used for feeding; it should be supported by a well-fitting brassière, and analgesics given to relieve pain and encourage sleep. Local heat, by kaolin application or by exposure to a lamp or short-wave

diathermy if this is available, will hasten recovery. The unaffected breast can still be used for feeding, but supplementary feeds will probably be required. If necessary stilboestrol, 5 mg. twice a day, or an intramuscular injection of hexoestrol, 15 mg., will suppress lactation. To avoid recurrent abscess formation early drainage should be avoided. Until the abscess is clearly localized and fluctuant it should be left alone, but when ready it should be opened adequately by an incision over its most dependent part directed towards the nipple. A finger is used to break down loculi and a drainage tube inserted for 24 hours. A well-planned incision leaves little scarring.

Severe infections of the genital tract may be associated with no vaginal discharge, while local lesions can produce a considerable purulent loss. The organism responsible should be determined by taking a high vaginal swab, where possible its drug sensitivity established, and the appropriate therapy begun. In the meantime penicillin, one million units daily, with either streptomycin, 1 g. a day, or a sulphonamide, 1 g. four-hourly, should be given. Streptococcal infections are occasionally associated with extensive pelvic cellulitis. This causes board-like induration of the parametrium, often with surprisingly little pain. After the temperature has subsided it may take weeks for this induration to resolve. In all infections the importance of treating anaemia should be remembered.

Vascular Complications

Thrombosis and emboli are likely vascular causes of puerperal emergency. Anaemia, trauma, and lack of movement are predisposing factors. Deep femoral thrombosis can occur as an acute episode, with great pain in the thigh and considerable shock. The pain is caused by vascular spasm, and a sympathetic block given at this stage produces dramatic relief and hastens recovery. Anticoagulant therapy should be begun with an initial intravenous injection of 10,000 units of heparin. It is wise to transfer the patient to hospital, where the blood picture can be carefully controlled during treatment. If transfer is not possible a preparation such as phenindione, 50-100 mg. twice daily orally, should be administered and adjusted according to the prothrombin time. It is wise to have expert supervision of these cases whenever possible.

Pulmonary embolism, like femoral thrombosis, is becoming less frequent in obstetrics. The dramatic case can result in immediate death, the less severe may be mistaken for a coronary occlusion, but a second opinion is likely to be requested. The immediate administration of heparin, 10,000 units intravenously, will give some relief. If a case of suspected pneumonia fails to respond to modern therapy the possibility of thrombosis should be remembered, as response to anticoagulant therapy can be dramatic.

Mental Disturbances

One of the most distressing of puerperal complications is insanity. Either mania or depression can occur, and restlessness, insomnia, and unhappiness usually precede an acute phase. The emotional tensions which may be associated with pregnancy and parturition are too often forgotten by relatives and friends, and their thoughtlessness in the early days after delivery can produce alarming repercussions. Attention to the mother's happiness and assurance of adequate sleep would prevent many serious breakdowns. Once the acute emergency has arisen expert psychiatric guidance is essential, and a safe sedative until this can be obtained is paraldehyde, 5 ml. intramuscularly.

Conclusion

Most of the emergencies of the puerperium, be they due to toxæmia, haemorrhage, infection, or mental causes, can be avoided by careful antenatal, intra-partum, and post-partum care; by the early recognition of danger signals; and by taking appropriate action when these arise.

Next article on Emergencies in General Practice.—“Acute Meningitis,” by Dr. J. Hamilton Paterson.

SUPPLY OF GAMMA GLOBULIN IN BRITAIN

The following note has been provided by the Ministry of Health.

Gamma globulin, prepared from pooled plasma from normal healthy adults by the Lister Institute for the Ministry of Health, is distributed to doctors in England and Wales through laboratories of the Public Health Laboratory Service. Requests for supplies should be made to the director of the nearest constituent or associated laboratory of the Service. Correspondingly, in Scotland gamma globulin prepared at the Edinburgh Blood Products Unit for the Scottish National Blood Transfusion Association is distributed through regional transfusion centres. In Scotland, requests for supplies should be made to medical officers of health.

So far as supplies allow it is issued for the protection of susceptible contacts of measles, rubella, and poliomyelitis as shown below.

Disease	Available for	Usual Dosage
Measles ..	(1) Control of hospital and institutional outbreaks (2) Persons suffering from intercurrent illness or living in a poor environment for whom an attack of measles would be dangerous (3) Children under 3 years of age	<i>Prevention</i>
		3 years and over .. 750 mg.
		1-2 years .. 500 mg. Under 1 year .. 250 mg.
Rubella ..	Women exposed to infection in the first 4 months of pregnancy	<i>Attenuation</i>
		All ages .. 250 mg.
Poliomyelitis	(1) Nurses and medical students who are to be closely associated with the care of early cases and who so far as is known have not been in contact with the infection previously. It is intended that only one injection should be given and that prior to their going on the poliomyelitis wards (2) Babies in a hospital or maternity home exposed to infection soon after birth (3) Children in a hospital ward in which a case develops—especially children who have recently undergone tonsillectomy	<i>Prevention</i>
		7 years and over .. 1.5 g. 1-6 years .. 1.0 g. Under 1 year .. 500 mg.

In addition, a small stock of gamma globulin prepared from the blood of persons recently vaccinated against smallpox is held for the treatment of cases of generalized vaccinia, accidental vaccinal infections endangering the eye, and, in special circumstances, for the protection of unvaccinated smallpox contacts.

Just over 1,000 almoners are now working in British hospitals. Public health departments employ a further 61. These figures are given in the recently published annual report of the Institute of Almoners for 1954-5. The report refers to the development at two universities—Edinburgh and London—of courses which equip students to practise as medical social workers. Until recently the institute was solely responsible for the training of almoners, but there are inherent difficulties and dangers in a course of training being provided by the professional organization concerned, and the new university courses are greatly welcomed by the institute, “whose declared policy is ultimately . . . to hand over full responsibility for the training of medical social workers to the universities, or to a body of equivalent standing such as the school of social work envisaged in Miss Younghusband's report on social work in Britain.”