SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

ACUTE INFECTIONS OF THE BREAST

BY

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The ideal management of any disease is its prevention. Acute mastitis and its possible sequel, acute mammary abscess, occurring in the period of lactation, are often preceded by conditions the suitable treatment of which may have a preventive effect. Lack of care of the nipples in the later weeks of pregnancy and during lactation, inadequate treatment of a cracked or sore nipple, and failure to prevent stasis within the breast may all contribute to the production of those infections; but it should be added that in spite of every care they may occur, sometimes in epidemic-like form in institutions.

While such infections may occur apart from lactation, the great majority arise during that period, and it is these which will be considered here. The infection is associated with a cracked or sore nipple in probably less than half the cases. In the others it is presumed usually to have passed directly along the milk ducts from the nipple. It may be that infection has been blood-borne in some instances. The *Staphylococcus aureus* is the usual organism found—far less commonly the streptococcus. While the organism may gain access through it, a cracked or sore nipple is of much greater importance in that stasis occurs, because of the mother's inability to allow suckling on account of the pain. The retained milk then provides a suitable medium for the multiplication of organisms.

Cleanliness of the nipples, the avoidance of cracks and sores, their efficient treatment if they occur, and, above all, avoidance of stasis within the breast, then, are all of prime importance in the prevention of conditions which, if rarely dangerous to the life of the mother, are productive of much pain and discomfort, are a source of keen disappointment, and may have lasting effects on the health of the child. Efficient prophylaxis requires unremitting care on the part of the mother, the nurse, and the medical attendant.

Care of the Breasts in Pregnancy and During Lactation

Obstetricians are divided in opinion on the need for active treatment of normal nipples in preparation for pregnancy. Some consider that any such treatment is useless; others advise that in the last few weeks the mother should draw them out and cleanse them with soap and water twice daily, and massage them between thumb and forefinger with a little lubricant such as lanolin. The fashion of hardening the nipples with spirit or spirituous preparations has been falling into disuse as likely to favour the occurrence of cracks. The depressed nipple must of course be drawn out, and it is well treated by the measures related; but if for nothing else than instilling in the mother's mind the need for scrupulous cleanliness which will be required in the puerperium, it seems sensible to advise washing with soap and water twice daily during the last few weeks of pregnancy.

By far the greater number of breast infections occur in the first few weeks after parturition. A drill-like routine in the matter of cleanliness is required, therefore, right

from the outset. Before feeds the mother should thoroughly cleanse her hands in soap and water, paying particular attention to the finger-nails, which should be kept short. The nipples should be washed with warm boric solution and care taken that neither nightdress nor bedclothes touch them. After the feed they are again washed with the solution, thoroughly dried, and covered with a piece of sterile gauze or gamgee pad held in position by the breast binder.

Night and morning in these first weeks the nurse should inspect the breasts with a view to the early detection of such conditions as may favour infection, since by their adequate early treatment such may be avoided. Any residual milk after feeds should be expressed manually or by the breast pump. Such a procedure prevents blockage of ducts with consequent future stasis. Again, the appearance of a cracked or sore nipple calls for immediate attention. The application of cold cream or of glycerin and borax in conjunction with the use of a nipple shield usually suffices to heal this condition. If stronger measures are needed, the application of a little friars' balsam effects a cure in most cases. A nipple shield should be employed where there is pain on suckling, whether a lesion be visible or not. Nipple shields should preferably be of the all-rubber type: glass shields tend to constrict the erectile nipple. As has already been said, not only is there the danger of infection passing by means of the crack, but the pain on suckling usually results in inefficient emptying, and therefore even more thorough precautions must be taken to express residual milk. Should the pain be too great to allow of suckling even with a nipple shield, direct feeding from that breast should be temporarily suspended, the milk being removed by manual expression by the mother and fed to the child through a bottle. Later, direct feeding is resumed.

Occasionally the nurse's inspection will reveal hardened tender nodules in the breast unaccompanied by any great constitutional disturbance. These are probably small areas of retention, and because of the possibility of their becoming foci of infection they require treatment. The breast should be completely emptied after each feed, manually or by breast pump. Light massage, working from the base of the breasts up to the nipple, should follow, the idea being to free any blocked ducts. Between feeds the breast should be supported in a raised position by brassière or bandage.

Acute Engorgement and "Breast Flush"

Two conditions occurring in the early puerperium require mention because of the necessity for differentiating them from acute pyogenic conditions. The physiological milk engorgement of the breast which takes place about the fourth or fifth day may in some patients, particularly elderly primiparae, be so severe in symptoms and signs as to suggest acute inflammation. The breasts are tense and flushed, with pronounced veining, there is a transient rise of temperature and the patient feels "seedy." Relief is afforded by the use of a saline aperient night and morning and the use of a breast pump after the feed; in persistent cases fomentations will help.

About the tenth day there may occur what is known as a "breast flush." This is a sector- or quadrant-shaped

flush of the surface of the breast accompanied by marked constitutional disturbance. The patient often expresses the idea that she is going to have influenza. Starting commonly with a rigor, the temperature reaches 103° to 104° F. The breast is hot rather than tender, and there is no underlying induration of the sector. Most important of all, little breast pain is complained of. "Breast flush" only very rarely passes on to suppuration, and usually subsides in forty-eight hours. It is regarded by some as streptococcal in nature, and by them treated with 15 grains of sulphonamide eight-hourly. By others it is regarded as a local acute engorgement. There is no need to use fomentations, and these conceivably might tend to produce suppuration.

Acute Mastitis

Human breast milk in a proportion of cases contains organisms, not infrequently the *Staphylococcus aureus*. Any condition of stagnation, therefore, will offer a chance of multiplication of these organisms. Such stagnation may occur by the blocking of ducts from inspissated milk. Stagnation, again, may be the result of the inflammation of the wall of a duct or ducts by organisms that have gained entrance by the nipple. A local engorgement is thus the forerunner of an acute mastitis, and there is no clear dividing-line between the two. Severe pain within the breast, often preceded by a shiver or rigor, is the most characteristic early symptom. The breast is tender, locally or diffusely. In the case associated with a cracked nipple a lump is usually palpable early—not always so in other cases. About twelve hours after the onset of pain a cellulitic appearance of the breast, local or diffuse, appears. The temperature is raised and keeps swinging up to about 100° F.

At this stage attempts to aid resolution constitute the line of treatment. The application of heat by antiphlogistine or linseed poultices, leaving the nipple clear, is

The tight figure-of-8 bandage.

helpful and comforting. Any attempt at massage now is contraindicated. The child may still be suckled unless pain be caused, but the breast pump should be employed to extract any more milk possible. Resolution may then be accomplished.

Where the symptoms become more severe in spite of treatment, it is likely that the condition is to pass on to abscess formation. The application of large fomentations

should now be employed to aid the process of localization. The vexed question of whether or not to wean the child then arises. There is no doubt that infection subsides much more quickly after weaning, and therefore in severe and moderately severe cases this should be done. There are, at the other extreme, mild cases in which feeding may still be carried on from one or both breasts. If the affected one is not used, the milk is extracted by the breast pump. Each case must be considered on its merits. The mother's milk is the best for the child, and there are economic considerations against its lightly being abandoned. Weaning is satisfactorily accomplished by the use of magnesium sulphate crystals, a tablespoonful each morning in half a glass of warm water, followed by hot tea. There is no need to diminish the intake of fluids. A supporting dressing is applied to the breast. This is well accomplished by a figure-of-8 five-inch calico bandage, running over both breasts but not over the shoulders, put on while the arms are extended above the head. This bandage should be applied so tightly as to make the patient complain of slight constriction of the chest (see figure). The amount of magnesium sulphate crystals is gradually diminished. Weaning should thus be satisfactorily accomplished within a week.

Acute Mammary Abscess

Although it is usual to describe three types of acute breast abscess—the subareolar, the intramammary, and the retromammary—the intramammary is by far the commonest and most important. The retromammary form in lactation is almost invariably secondary to a deep intramammary abscess: its importance, apart from lactation, is concerned with its differential diagnosis from abscesses arising in the breast wall. The subareolar abscess is a small superficial collection unrelated to any deep process, and fluctuation and the time for a small incision are early determined.

What is the correct time for incision of an intramammary abscess? There is no doubt that many, possibly the majority, are prematurely incised. The temptation to insert a knife into any cellulitic area seems irresistible to some people. Incisions in the various forms of milk engorgement and acute mastitis are a disappointment to both patient and doctor. This practice, often associated with the making of counter-incisions for so-called dependent drainage, is utterly to be condemned. Not only is further incision likely to be needed later, but by cutting through normal breast tissue in making counter-incisions the infective process at this diffuse stage is allowed to spread further afield. A well-localized acute abscess opened fully by a single incision at a point nearest the surface, whatever its position in the breast, will discharge its contents freely without the need for counter-incision. (The latter should be reserved for the very rare cases which go on to a sort of chronic diffuse suppuration throughout the breast.)

In the determination of the optimum time for incision let it be said that there is little hurry. It is not a matter only of being sure, from the symptoms and signs, that pus is present: pus may be formed at several points in the involved area. Given time, these will coalesce and tend to form an abscess which, although loculated, is only poorly so, and which can be dealt with thoroughly through a single incision. By daily inspection of the breast it will be seen that in the average case the cellulitic appearance of the skin lessens and becomes more circumscribed, in some deep cases practically disappearing. The underlying indurated area gradually becomes more defined

and somewhat spherical in shape. Where the abscess is not situated very deeply the overlying skin begins to become a more pronounced red and to pit on pressure. This—and it may take a week or more—is the time for incision. Left a little longer the pus would burrow through the covering fascia of the breast and point on the surface as the smaller portion of a collar-stud abscess. There is no need to wait for this. Where, however, the abscess is situated deeply, apart from an actual retro-mammary abscess, the time for incision is not so obvious. The pus, however, tends to gravitate to the apex of the breast, and in time a break in the fascia underneath the corresponding segment of the areola can be felt by the tip of the finger. This is the premonitor of a collar-stud abscess, and an incision at this time will allow complete evacuation.

Incisions into the breast should be radial from the nipple over the swelling. Much has been needlessly written on the subject of planning incisions for cosmetic effect. The ordinary radial incision made at the right time leaves surprisingly little trace. The operation is easily carried out under gas or gas-and-oxygen anaesthesia. The length of the incision will vary in different cases, but it should always be ample. After the abscess has been incised, a finger is introduced and free communication established between the loculi, which, if the proper time has been allowed to elapse, are already communicating. No undue force should be employed in doing this. Stout strands passing across the cavity should not be torn, for within them are intact ducts and blood vessels; and the breasts should not be squeezed roughly. A drain is now introduced. This is best made of soft corrugated rubber dam or rubber glove material. Where the child has been weaned it is not desirable to use rubber tubes (and indeed they should never be necessary), since the figure-of-8 bandage could not be applied tightly enough. This bandage, over gauze and wool, obviates also any need for packing the wound on account of haemorrhage, which, however, should not occur to any alarming extent if the abscess has been opened at the right time. Assuming still that the child has been weaned, this tight bandage should not be moved for forty-eight hours, and subsequent dressings, except in cases with very copious drainage, should be done at the same interval. The glove drain is removed at the first dressing. Irrigation with antiseptics is unnecessary. When the child has not been weaned and the condition does not clear up readily, weaning is usually followed by rapid cure.

After constitutional symptoms have abated the patient should be kept in bed until progressive healing is taking place. Ambulatory treatment, except in the mildest of cases, is unsatisfactory and prolongs convalescence.

There are rare forms of acute pyogenic infection in which either the whole breast becomes the seat of diffuse suppuration or there is a slow-spreading cellulitis which keeps breaking down at various points. Such conditions require the full scope of hospital treatment, and need not be considered here.

O. W. H. Mitchell, T. L. Bryant, and O. D. Chapman (N.Y. *St. J. Med.*, 1938, **38**, 1022) record 135 cases of gas gangrene which occurred in New York State, exclusive of New York City, in the years 1932 to 1936 inclusive. The predisposing factors were as follows: trauma ninety-one, clean amputations thirteen, pregnancy seven, gunshot wounds five, and miscellaneous nineteen. Eighty-four patients were treated with specific serum (*perfringens* antitoxin) with twenty-nine deaths, and fifty-one without serum with thirty-five deaths.

GROUP PSYCHOLOGY AND SOCIAL POLICY

[FROM A CORRESPONDENT]

The era which has seen the greatest advances in medicine has witnessed two highly significant social trends. In economic life the old cohesion of groups has broken down, leading to more individualistic behaviour and greater mobility of labour. At the same time, medicine has learnt to serve the individual by studying the needs of the group to which he belongs. Both tendencies have worked to form a somewhat impersonal attitude towards the motivations behind social life. No one will deny that man is wise to seek the highest economic status open to him or that money is an urgent incentive, but there is something more. Professor E. P. Cathcart recently referred to "malnutrition of the spirit." This is no sentimental evasion but rather a profound and neglected truth.

"There is a social motive in economic activity so that routine which first develops as a technical convenience grows into stable custom and becomes shot through with sentiment." These sentiments have been analysed by Professor T. North Whitehead of Harvard,¹ and the conclusions he reaches are of considerable importance at a time when social and economic custom the world over is literally in the melting-pot. You cannot break up social groupings in factories or industrial areas, you cannot remove skilled men into new environments, and you cannot play fast and loose with the inner disciplines of established forms of life solely for financial or economic ends without grave risk unless a vital prophylaxis is established. There must be a new form of emotional satisfaction ready to take the strain the moment the old ties are slackened or broken unless there be a continuity of emotional satisfaction over and above these. Medicine, which has with such success studied the group needs of man in regard to physical hazards, has failed, however, to take full account of these aspects of group psychology, with a result that much of the individual emotional disturbance of men and women is incompletely diagnosed.

Spiritual and Emotional Unity

Professor Whitehead has much to say on group ways and sentiments, and though it is addressed mainly to industrial administrators it would be well if doctors and statesmen paid heed to his advice. He makes it clear that a financial and an emotional incentive are necessary for healthy and effective work, and that it is no use strengthening the former at the expense of the latter unless we wish to produce serious imbalance and breakdown in social and economic life. It is no secret that democracy has given such rein to free economic development that the financial aspect of industrial life has run away with itself, and that, whether we like it or not, certain other forms of government have concentrated on giving scope for an overriding emotional outlet which has offset to a large extent the discontents that would otherwise have become manifest. Hence we find our own statesmen suddenly waking up to a realization that some form of spiritual or emotional unity is necessary in this country: something which will hold men and women on their course, despite breaks in their more immediate personal systems; something which will cause them to hope and live for a greater end than that which lies close to them. If this unity is

¹ *Occupational Psychology*. Vol. xii, No. 4, Autumn, 1938. National Institute of Industrial Psychology, Aldwych House, London, W.C.2. 5s.