SURGICAL PROCEDURES IN GENERAL PRACTICE

This is one of a series of articles contributed by invitation

CHRONIC MASTITIS

BY

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The condition generally known as mastitis, chronic interstitial mastitis, or cystic mastitis—to mention the most common names by which it is recognized—would be a relatively insignificant and unimportant disease were it not for the fact that in some of its manifestations it so closely mimics cancer of the breast, and that, furthermore, there is a widespread belief that it may be the forerunner of a malignant change in the affected organ.

Whatever its type and whatever its origin mastitis is almost invariably painful—not the severe throbbing pain associated with pyogenic infections of the breast, but a minor though none the less steady, nagging, neuralgic pain aggravated by movement or exercise, and influenced to some extent by the menstrual cycle. It is the pain that brings these patients to the doctor and not the accidental discovery of a painless lump, as is so often the case in cancer of the breast.

Mastitis is so varied in its manifestations, and the different types merge so gradually one into another, that it is very difficult to provide any satisfactory classification; but careful consideration of a large number of cases does permit some sort of selection of comprehensive clinical groups.

Subacute Mastitis

The best-defined group consists of cases of what should properly be described as subacute mastitis, characterized by painful swelling of a sector of the breast. The affected sector becomes tender, hard, and heavy, and acquires a cake-like rigidity, so that on manipulation it moves as one piece on the chest wall. A large part—as much as half—of the breast may be affected in these cases. This particular type of mastitis is generally unilateral; it is apparently more common on the right side than on the left, and is met with especially in women whose breasts are somewhat pendulous and who have recently engaged in some unaccustomed effort such as the first game of tennis of the season, spring-cleaning or similar strenuous exercise. In fact, it is pretty obvious that trauma is the determining cause in most of these cases; but trauma cannot be the whole story, for it is significant that the kind of mastitis met with in the tiny breasts of little girls just before puberty, and in boys too, closely resembles the type just described.

Pubescent Mastitis

These puberty cases provide an interesting and typical clinical picture, for here also the breast tissue becomes firm, tender, and rigid; but there is this difference—that the whole breast, such as it is, is involved, with the result that a little tumour is produced in the form of a flat disk with rounded edges and a thinner centre which closely resembles the shape of a nux vomica bean. It is characteristic of these cases that both sides tend to become affected, the second breast enlarging as the first gets better.

Mastitis in the Male

This bilateral involvement at puberty gives strong support to the suggestion of hormone imbalance as an aetiological factor in the disease, and stands in sharp contrast to the state of affairs in the adult male, where mastitis would appear to be almost invariably unilateral and almost invariably the result of trauma. Here also the clinical signs are striking and definite, for again the whole breast is involved, with the production of the bean-shaped mass already referred to. The shape of the swelling affords a useful diagnostic distinction from cancer of the male breast, which at any rate begins as an asymmetrical tumour of only a portion of the breast tissue.

Treatment of Subacute Mastitis

Subacute mastitis occurring in any of these forms tends to get well in a few weeks, but its progress may be aided by local applications of heat and belladonna and by firm support and pressure by brassière, bandage, or elastoplast. Protection from further direct trauma and limitation of use of the arm on the affected side are obvious adjuvants that should not be omitted. In cases where the breasts are large or pendulous it is important to insist upon a well-fitting brassière if recurrence of the trouble is to be avoided, and it is well to remember that these patients may be greatly helped by wearing a brassière in bed as well as on all occasions in the daytime.

These subacute cases are relatively uncommon types of mastitis that are comparatively easy to diagnose and to deal with, and they afford a striking contrast to the more common and the more difficult problems presented by the chronic cases.

Chronic Interstitial Mastitis

What are the predominating symptoms in this group? Unlike the adult subacute variety, chronic mastitis is often bilateral—a very important point when it is remembered that cancer is almost always unilateral; and more than one area of the breast may be affected—again a matter of importance when compared with cancer, which almost invariably starts as a single focus. The age distribution is fairly wide, for it is commonly met with from the early thirties until well after the menopause. It is not, however, seen in old age, and it is a fairly safe rule that after 65 or 70 most lesions of the breast are malignant.

Breasts which are the seat of chronic mastitis are in the main soft and pendulous, and it is the exception to find the disease in firm, well-preserved, and shapely organs. I have the impression that cancer shows no such discrimination. Enlargement of the axillary lymph glands is sometimes seen, but they are of the normal soft consistency, unlike the inelastic hardness resulting from cancerous infiltration.

Discharge from the nipple is not infrequent, and occasionally a small amount of yellow or greenish fluid may be expressed from both nipples although only one breast has given rise to discomfort.

Pathological Anatomy of Chronic Mastitis

For a clear comprehension of the problems occasioned by mastitis, a mental picture of what is going on or what may be going on in the affected breast is essential. This is, of course, not the place for a lengthy consideration of the pathological anatomy of chronic mastitis, but very broadly it may be stated that it is characterized by the formation of an excess of interstitial fibrous tissue and a tendency to cyst formation in the affected portions of the breast. At one end of the scale we see cases in which the development of fibrous tissue may entirely overshadow the cyst formation: the cysts are there but are few in number and microscopic in size, and the affected breast tissue is then a smooth homogeneous mass. At the other end of the scale are cases in which cyst formation predominates, and the clinical picture will merely present one or more simple cysts of any size between a pea and a golf ball.

Most common are cases in which fibrous tissue and cysts are more or less balanced, and the picture will be an irregular, shotty, and occasionally very hard mass which is made up of innumerable tiny cysts embedded in dense fibrous tissue. It is clear, too, that it is possible for this process of cyst-fibrous tissue formation to be present in more than one portion of the affected breast and to be at a different stage in each.

This thumbnail sketch of the pathological processes underlying chronic mastitis will serve to indicate how varied may be the clinical manifestations of the disease, and how difficult may be the task of the practitioner who is faced with the responsibility of deciding whether in fact it really is a case of chronic mastitis with which he has to deal, or whether it is something more serious. And a decision must be made at once, for it cannot or should not be deferred in order to await the effects of a period of tentative treatment.

Diagnosis of Chronic Mastitis

The finely nodular or shotty cases are generally easy of diagnosis: the patch tends to be sector-shaped, it is tender on manipulation, there may be more than one patch in the breast, and both breasts may be affected. The cystic cases, too, are often easily recognized; but there are wide variations, and whereas the true nature of a large, simple thin-walled cyst may be at once detected by its spherical shape, by its elasticity, and by the fact that the posterior hemisphere of the cyst may sometimes be felt bulging through the deep aspect of the breast, it is quite otherwise with solitary cysts firmly embedded in a thick mass of tissue in cases of fibrous mastitis. It may be impossible to distinguish these from carcinoma until after removal.

When fibrous tissue is predominant a hard mass develops which merges imperceptibly into the surrounding breast tissue, and gives, when grasped between the fingers and thumb, the impression of a definite tumour, but when palpated with the flat of the hand may not be apparent as a tumour at all. Great stress has been laid upon this last sign, but it is unsafe to attach too much weight to it, as certain cancers of the breast starting on the deep surface of the organ may present the same elusive characters.

It is when a nodule is of quite small size in cases of fibrous mastitis that the greatest difficulties in diagnosis are met with; indeed, there is no ordinary method of examination by which a very small cancer, a very small

cyst, and a very small mass of fibrous mastitis can be differentiated: and owing to the influence of widespread propaganda we are getting more and more of these early cases. Puncture with a fine hypodermic needle may demonstrate the fluid contents of a cyst; but the tiny ones are not easy to hit off in this way, and in doubtful cases our only resort is diagnostic removal of the suspicious mass followed if doubt still exists by histological examination.

Biopsy of Doubtful Breast Tumours

There are wide differences of opinion as to the wisdom of this procedure; indeed, many go so far as to lay down the rule that all suspicious breasts should forthwith be removed. This is surgery on totalitarian lines, and puts at a discount the long years of careful training with which most surgeons endeavour to prepare themselves. There is no convincing evidence which clearly indicates that there is danger in establishing the diagnosis by careful preliminary excision. It will be generally agreed that the patient should be spared if possible the ordeal of two visits to the operating table, and it is clear, therefore, that the diagnostic excision of breast tumours is best confined to those who have the knowledge necessary to enable them to recognize immediately the nature of the tissue removed, and the capacity to proceed with suitable operative treatment should the case prove to be malignant.

I recognize that this is a counsel of perfection and that those without much surgical experience must from time to time be faced with the necessity for removing one of these small masses for subsequent pathological examination. It is not always easy, particularly in large fat breasts; and a little practical point that I have found to be of great value is to fix the small tumour with a fine needle thrust into it through the skin before the incision is made. It is not easy then to lose one's way and to spend a long time searching for a little mass which can be strangely elusive in the surrounding fat.

In case the condition should prove to be malignant the gentlest possible handling is essential in order to avoid the possibility of squeezing cells into the neighbouring lymph or blood channels. Damage to the tissues also militates against that perfect healing of the wound which is so important if the preliminary excision is to be followed by a major operation at a later date. The most meticulous precautions should be taken to avoid infection of the wound, and it is well to adopt the additional safeguard of drainage in order to minimize the possibility of haematoma formation.

Treatment of Chronic Mastitis

To turn now to the treatment of chronic mastitis. It is obvious that in many cases it is necessarily surgical, because doubt as to the diagnosis imposes the necessity of removing the offending mass and thereby curing the disease or, at any rate, curing the symptoms and relieving the mind of both doctor and patient. While it is wise not to be niggardly in removing the portion that is under suspicion, there is no need at all in most cases for resection of wide areas of the breast.

Aspiration of Simple Cysts

In dealing with cases characterized by cyst formation it is always possible by aspiration through a stout hypodermic needle to empty individual cysts with a fair assurance that if the cyst be completely emptied it will not refill. Why, I do not know, but the fact is indis-

putable. But other cysts may develop, and although it may be possible to keep up with them by this procedure, the patient may become so distressed by the recurrent necessity for aspiration that it may be desirable to advise a limited amputation of the breast. If desired, this can be performed subcutaneously through a circumferential incision, leaving the nipple *in situ*; but I am bound to confess that the resulting area of depressed scar with the nipple perched somewhat precariously in the middle is to my mind more unsightly than the deformity left by a simple amputation with elliptical incisions which come neatly together in a linear scar. Complete symmetry is necessarily often obtained owing to the fact that multiple cystic disease of the breast tends to be bilateral and both sides may require amputation.

I am aware that I embark on somewhat controversial ground in advising the aspiration of simple cysts of the breast, but I have done it now so many times and for so many years with complete immunity from any kind of difficulty that I am convinced it affords a simple, safe, and effective method of dealing with them. There are two safeguards, however, that must be emphasized: first, the cyst must be completely emptied so that it collapses and entirely disappears, for if only half emptied it will return in a few weeks; moreover, if it is not possible to obtain complete collapse of a cyst by this means it indicates that there is something more than a simple cyst, and surgical exploration must be employed. The second safeguard is a most careful scrutiny of the fluid withdrawn. It may look like clear serum, it may be yellowish, or it may be green and turbid. None of these variations is of any significance, but if the fluid is blood-stained, then it means, or it may mean, an intracystic growth, and immediate surgical excision is indicated. In my experience this occurrence has been exceedingly rare.

One naturally asks oneself whether any treatment is possible that will stay the progress of multiple cyst formation, and I know of none when the cysts have achieved what one may term "clinical dimensions." But it is otherwise with cases of chronic mastitis where the cyst aspect is not clinically obvious; for there are two lines of attack which appear to hold out some hope of arresting what is, after all, a progressive disease. The first is the application of x-ray therapy, which does seem to be of value: it certainly diminishes pain, I think it softens the thickened tender masses, and I believe that it stays the progress of the disease. The second line of attack is based upon what would appear to be a well-founded view that all forms of chronic mastitis are to some extent dependent on hormone disturbance. The administration of hormone preparations such as theelol cannot at present be regarded as anything more than experimental, but it is obviously worthy of the detailed and extended trials that will be necessary before it is possible to come to any definite conclusion on the efficiency of the method in staying the progress of the disease.

Finally it should be emphasized that chronic mastitis is a relatively uncommon disease; or perhaps it would be more accurate to say that women present themselves for the treatment of chronic mastitis relatively seldom. It is less than half as common as cancer of the breast. Of any hundred women who come for treatment of chronic breast conditions sixty have cancer, ten such miscellaneous diseases as adenoma, lipoma, fat necrosis, and so on, and the remaining thirty have one or other of the manifestations of mastitis. It is a safe and wise rule, therefore, to regard any breast tumour as a carcinoma unless or until it has been proved by aspiration or biopsy to be innocent.

THE STATE OF THE PUBLIC HEALTH CHIEF MEDICAL OFFICER'S REPORT*

[SECOND NOTICE]

A summary of the earlier chapters of Sir Arthur MacNalty's Annual Report for 1937 as Chief Medical Officer of the Ministry of Health appeared last week at page 957.

Medical Intelligence and Research

A list is given of over fifty committees on public health and medical questions on which members of the Ministry's staff have served. Fourteen reports and memoranda of special medical interest have been issued during the year. Attention is also drawn to certain expansions in the work of the Medical Intelligence Section. The chief of these relates to the recently established liaison between the Ministry and the Central Council for Health Education, a body which was founded in 1927 to co-ordinate the work of health publicity, etc.

Research in medical statistics has revealed, among other things, that simple violence killed more than half as many males as all the infectious diseases taken together, that a very large proportion of these violent deaths occurred on the roads, and that just as there are accident-prone persons so there are sickness-prone persons—that is, persons for whose abnormal sickness rate no merely physical grounds can be assigned and malingering can be excluded. Other matters dealt with in this chapter range from an account of rat destruction on ships, docks, quays, etc., and rat-flea surveys at ports to the problems dealt with by the International Sanitary Convention for Aerial Navigation. Full particulars are also given of port health administration during the year and of international health work.

Tuberculosis in 1937

Though there was a slight increase in the number of deaths from all forms of tuberculosis the standardized death rate for 1937 remains the same as for 1936, when the figure of 657 per million was the lowest ever recorded. It is the most striking example known of reduction of the mortality of a disease in our own time.

There were 28,529 deaths from tuberculosis certified in 1937—261 more than in 1936. The slight rise in mortality from pulmonary tuberculosis was directly associated with the epidemic of influenza at the beginning of the year. There was also some increase in the mortality from non-respiratory forms of tuberculosis. During the year 59,918 new cases of tuberculosis (all forms) came to light in England and Wales as compared with 59,269 in 1936. The number of new cases and contacts examined for the first time by tuberculosis officers in England and Wales was 161,382, an increase of 6,158 over 1936 and 12,444 over 1935. These figures probably indicate that greater use is being made of the service for suspected cases. It is hoped that the intensive educational campaign carried out under the auspices of the Ministry early in 1938 will result in patients seeking advice at an early stage of the disease when recovery is most probable. The chapter ends with a brief note on the surgical treatment of pulmonary tuberculosis and a discussion of bovine infection.

Venereal Diseases

There is evidence that measures taken under the Venereal Diseases Regulation are lowering the incidence of fresh infections with syphilis in this country. Cases of congenital syphilis among infants show a further reduction, and deaths from such late effects of syphilis as general paralysis of the insane and locomotor ataxia show,

* *On the State of the Public Health.* Annual Report of the Chief Medical Officer of the Ministry of Health for 1937. H.M. Stationery Office. 3s. 6d.