CLINICAL LECTURES ON THE DIAGNOSIS OF CARCINOMA OF THE BREAST IN ITS EARLY STAGES.

(Delivered at St. George's Hospital.)

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LECTURE I.

THE FREQUENCY OF MAMMARY CANCER IN HOSPITAL PRACTICE.

THE frequency of mammary cancer is very serious and remarkable, yet in comparison with other breast maladies cancer, on account of its gravity, is admitted into hospitals far more frequently than mastitis, abscess, or the more simple growths. Accordingly when we find that cancer of the breast forms nearly one-half of all hospital cases of breast disease we are probably a little overstating the mark. Out of 1,017 cases of all sorts of diseases of the breast I have collected from the *Middlesex Hospital Reports*, 790, or over one-half, were those of cancer. At this hospital, however, cancer cases are unusually numerous, owing to the special provision for their relief. At St. George's Hospital, out of 750 cases of all kinds of breast diseases between the years 1875 and 1895, 353, about one-half, were carcinomatous. These figures and facts, subject to the above criticism, are sufficiently accurate to warrant you in giving very serious attention to a malady as frequent as it is formidable.

MODE OF EXAMINATION.

The thorax should be quite undressed and covered loosely with a towel or handkerchief. Look critically at the affected organ, at the amount of retraction of the nipple, at the presence or absence of dimples in the skin over the supposed growth, at the colour of the integument, the presence or absence of enlarged veins. Examine the pectoral regions closely to see if there be any "fulness," as though the muscles were pushed forwards by glands beneath them. You will at the same time glance at the patient, and you will do well to dismiss from your minds any preconceived ideas as to typical facial appearance. Some of the patients may look florid, others emaciated, and, as may be expected, many of them appear "anxious," but in my judgment the majority are much like women of their age, whether they have breast affections or not. When handling the part always observe the utmost gentleness, and examine with the flat of the fingers, not by roughly pinching up a portion of the gland. It is well for the patient to be lying upon a couch, and then this all-important examination with the flat of the fingers can be the better conducted. To examine the mobility of the lump palpate it beneath the flat fingers, and here you must not fail to carefully discriminate between mobility in the breast substance and mobility of the breast substance. In the first case the tumour slips about beneath the fingers within its capsule; in the second, the breast substance moves with the tumour which the latter infiltrates, though the whole mass slides about upon the pectoral muscle beneath, if taken between the fingers and thumb and moved from side to side. The final examination of the tumour is to feel carefully its degree of hardness and outline, and especially to press firmly with the pulp of the index finger upon the centre so as to estimate any sense of elasticity or approach to fluctuation. While so doing keep a watchful eye on the nipple, and if a little fluid oozes forth you will at once suspect the presence of some kind of cystic formation, though carefully recollect this does not of necessity exclude cancer. So, too, in examining the axilla for enlarged glands, you must proceed methodically, and always do it with the arm brought towards the side to relax the fascia; you can then pass your fingers deeply under the pectoral muscle, where cancerous glands are apt to lurk. Yet I may positively tell you that unless the patient be very thin, the only certain method of detecting enlarged glands is by making an incision through the skin and fascia, and thus examining for

them. The glands above the clavicle must be carefully palpated. Finally, recollect that you must not let your detection of one tumour prevent you from feeling another if it exists, and an examination of the opposite breast must always be included. The whole of the tissue of both breasts must be carefully and methodically examined. This will save you the great embarrassment and confusion and loss of credit occasioned by finding for the first time at operation conditions you did not primarily appreciate, and perhaps necessitating measures the exact contrary of which you had previously explained to the patient and a large circle of critical relatives. A short general examination of the urine, the heart sounds, and the condition of the lungs should never be omitted. These points have important bearings on the question of operation. The possibility of secondary formations should be present in your minds, and the liver and abdomen should be carefully examined.

THE SYMPTOMS IN TYPICAL CASES.

I have treated several cases of scirrhus of the breast in this hospital during the past few months, but hardly one of them has been in all respects typical. I will try to relate the symptoms of an illustrative case of early cancer, and we will take each symptom I mention and discuss its diagnostic importance, and what weight we ought to attach to it in coming to an ultimate opinion.

A woman, aged 45, has one day, quite by accident, noticed a small lump in the breast, and at the same time comes to the conclusion that her nipple on the affected side is drawn inwards. She has never well been able to suckle with this breast, the nipple often having been sore and "cracked." There is no particular pain about the tumour, but since she has noticed it and handled it excessively, and rubbed the part with "embrocations," shooting pain, like neuralgia, is felt about the side and down the arm. The family history shows no history of "cancer" or "tumour." On examination a stony, hard, indurated tumour, the size of a walnut, is readily felt beneath a retracted nipple. It is somewhat disc-shaped in contour, not perfectly rounded. The skin is adherent and faintly puckered like coarse "pig-skin" leather," and the growth is not encapsuled, but moves the surrounding breast tissue with it. There is an enlarged gland the size of an almond beneath the pectoralis major. The patient looks anxious, but is well nourished and in fair health.

If you read the notes of cases of scirrhus cancer admitted to hospitals, much the same history and description as you find above will be written; and, indeed, it is true that in quite a number of cases of carcinoma mammae the evidences are clear enough to enable you to speak at once, very decisively and plainly. On the other hand, it is well for you to know that those who speak the most positively upon these and kindred matters merely lack the caution given by experience, and some of you will be very surprised to learn that there is hardly a symptom of scirrhus cancer of the breast which may not be closely, very closely, simulated by less grave pathological conditions.

AGE.

Hospital records abundantly show that the most likely age for cancer is between 40 and 55. I have considered 2,531 cases of carcinoma of the breast, and out of these 927 occurred at this period or within a few years of it.¹

Of 353 cases of primary scirrhus of the breast admitted into St. George's Hospital between 1875 and 1895 inclusive the ages were as follows:

Between 25 and 40	...	...	50 cases.
" 40 and 50	...	...	143 "
" 50 and 60	...	...	93 "
" 60 and over	...	...	67 "

The oldest patient was 79, the youngest only 19.

Bryant² has seen a case in a woman aged 25, and refers to another by Henry (of Breslau) in a patient aged 21. There is some doubt in my mind whether cases reported at an earlier age than this are not really examples of soft sarcomatous tumours. This was probably the true nature of a mammary tumour reported as having been operated upon by the late Sir George Porter in the Meath Hospital in a girl aged only 13.³ A large mammary tumour removed by Barton from a

¹ Middlesex Hospital reports 831 cases; Bryant's tables, 600 cases; case of Firk tt 453; cases of Gross, 642; total, 2,531 cases.

² *Diseases of Breast*, p. 148.

³ *Med. Times*, November 3rd, 1893.

girl aged 12, was shown at a meeting of the Academy of Medicine of Ireland.⁴ This tumour was sarcomatous. The same may be said of a case reported by myself of tumour of the breast in a girl aged 16, which was removed by Sir George Humphry.⁵ The case reported by Bransby Cooper⁶ is open to the same criticism.

Bryant also states that a specimen of mammary carcinoma exists in the Museum of St. Bartholomew's from a girl aged 16, but on inquiry I am inclined to believe that this was also of a sarcomatous nature. Personally, I have never seen an undoubted case of scirrhus under 20.

The oldest patient, with mammary cancer that has come under my immediate notice was 78. Bryant has seen cases at the ages of 86 and 96.

The practical conclusions to draw from these perhaps somewhat dry details are as follows: A tumour commencing in the breast of a woman under the age of 20 or over the age of 80 is not likely to be a cancer. The likelihood increases from 30 up to the age of 60, and then gradually lessens. Next you will note that the patients usually discover that they have a tumour quite accidentally; and in truth I may venture to give you this general rule, that anything like severe pain is quite an exceptional feature in very early cancer of the breast. Pain, if present, is of a neuralgic type, and not associated with throbbing, or especially tenderness on pressure, heat, and redness—symptoms which are far more characteristic of a deep abscess, an inflamed cyst, or interstitial inflammation of an area of breast substance, than of cancer in its early stages.

INSIDIOUS ONSET.

It is especially in very fat women that carcinoma of the breast is apt to remain unnoticed in its earlier stages, and indeed the dimple in the skin over the growth may first attract the attention of the patient. The consideration that early carcinoma may escape detection explains those most important cases in which the secondary effects of the disease, in producing deposits of growth in other parts, become more noticeable and prominent than the primary. Thus a case of pleurisy in an elderly woman, coming on insidiously, may be due to a deeply-seated nodule of cancer in the breast, and the same may be said of pains about the thorax or bones, often supposed to be "rheumatic." Of still greater importance are the phenomena of spontaneous fracture, especially of the femur, or severe pains in the spine terminating in paraplegia, and the sudden and rapid appearance of innumerable disc-shaped nodules of cancer over the skin of the thorax and abdomen. In all such cases as these I would advise you to examine the breasts, and in a certain proportion of them a nodule of deeply-seated carcinoma will explain a very mysterious illness. The brief notes of the following cases will illustrate these points, which are of the utmost importance in clinical medicine and surgery, better than I can express them.

Scirrhus in the Breast of a very Fat Woman merely marked by a Dimple in the Skin.—This patient formed the subject of consultation at St. George's Hospital on June 15th, 1894. On the inner side of the left nipple was a deep dimple or pucker in the skin of an enormously fat mamma. There was an ill-defined swelling deep beneath, which, however, lacked the peculiar hardness of scirrhus. The nipple was not retracted, and there were no enlarged axillary glands. The patient stated that she had noticed the dimple in the skin for about three months, having previously struck the part against a chair. Great differences of opinion were expressed as to the true nature of the case, owing to the amount of fat preventing the proper palpation of the deeper parts. An exploratory incision, after dividing much fat, revealed a definite nodule of scirrhus the size of a haricot bean, and the whole mamma was removed.

Paraplegia due to Atrophic Cancer of the Breast.—A woman, aged 45, was admitted into the medical wards of St. George's Hospital in May, 1883, for paraplegia. For three months she had complained of severe "catching" and "gripping" pains in the hypochondrium, and soon she lost power over the legs, which became quite motionless. It was noticed that the woman looked sallow and excessively ill, and then it was discovered that she had disease of the left breast. There was a hard, shrunken, lobulated cancer of the left mamma, which had existed without inconvenience for no less a period than fourteen years. This patient lost control over the bladder and rectum, bedsores formed, and she ultimately died. At the post-mortem examination secondary masses of growth were found in both lungs. The fourth and fifth dorsal vertebrae were implicated in a new growth, which also affected the fourth and fifth ribs close to their heads on the left side. The spinal cord was compressed at this point.

Scirrhus of Breast: Secondary Growth of Spine.—A woman, aged 56, was admitted into St. George's Hospital on June 27th, 1894, under Mr. Bennett's care. Six months before admission she felt pain and stiffness in the lower part of the back, also severe pains in the knees, supposed to be due to "rheumatism." For the last month she had suffered from agonising "girdle pains," and could hardly be moved without excessive suffering. Two months only before admission she noticed a retraction of the right nipple, and thus her attention was first called to a tumour growing in the breast. In the right breast there was a scirrhus cancer, with the usual clinical characteristics. There was great pain and tenderness over the lower dorsal spine, but no motor or sensory paralysis of the legs. The urine had to be drawn by a catheter, and was alkaline. She remained in the hospital for about four months, emaciating rapidly, and pain being relieved with morphine. She died apparently exhausted on November 18th. No post-mortem examination was made.

A case is also related in vol. xiii of the Pathological Society's Transactions, where a lady, aged 55, suffered severe pain in the lumbar region and in the knee of a very excruciating nature, with retention of urine and faeces. She was seen and examined by at least ten physicians and surgeons, but none of them suspected the true nature of her case until five months before her death, when scirrhus cancer was found in the breast.

Multiple Cancer of the Spine and Ribs Secondary to Scirrhus Cancer of the Breast.—A woman, aged 54, admitted for progressive emaciation with shooting pains in left shoulder and down arm, and enlarged glands on both sides of neck. Sharp pains were experienced in the back between the shoulders, and the arms were excessively weak; she could stand only when supported. Salicylates were freely given and she somewhat improved. After being an in-patient for a month, a tender swelling was observed over the left seventh rib, and other anomalous symptoms had meanwhile been observed, as dyspnoea, thickening about the cervical spine, with signs also of impairment of breathing, the air entering the right lung with difficulty. The lump on the left seventh rib drew attention to the mamma, when the nipple was found retracted, with a mass of cancer in the substance of the breast about the size of a walnut. Finally, multiple deposits of malignant disease formed in the ribs, and the patient died with increasing dyspnoea and exhaustion. The details of the necropsy will be omitted. Deposits of malignant disease were extensively found in the spine and ribs. Dr. Taylor remarks, "The above case tells its own tale." A primary scirrhus carcinoma of the breast was followed by deposits in the cervical vertebrae, the ribs, sternum, lung, and falx cerebri.

Malignant Disease of Mamma in a very Fat Woman: Unexplained Hydrothorax: Death.—A cook, aged 52, was admitted into St. George's Hospital on November 29th, 1865, under Dr. Fuller's care. She was found to have left hydrothorax and considerable dyspnoea; but, as she was excessively fat, the mammary affection was not noted. She died on December 28th from exhaustion. At the necropsy a scirrhus nodule was found in the left mamma, and the parietal layer of the pleura was also studded with small, hard, malignant deposits, most abundant on the surface of the diaphragm. It was obvious that the primary infection was in the breast. This is a matter of great importance in the causation of unexplained pleurisy in an elderly woman.

Cancer of Liver: Concealed Cancer of Breast.—A woman, aged 60, consulted a physician of repute for hepatic pain, and a hard nodulated tumour could be felt in the liver, with oedema of both ankles and ascites. The patient died in about a month. At the necropsy carcinoma of the liver was discovered, and to the surprise of friends and medical attendants it was found for the first time that the patient was also suffering from cancer of the breast, which she had successfully concealed, even from friends and relatives.⁹

LOCALITY IN BREAST.

As regards the locality in which cancer of the breast in its early stages is apt to occur, the records of 353 cases in St. George's Hospital show that there is no essential preference for one side more than the other, and both breasts are affected simultaneously in only about 3 per cent., a lower average by far than noticed by many other observers. Most of the growths seemed to have occurred near the nipple, and in far the larger proportion of them the important phenomena of retraction of the nipple was observed. A favourite site is the upper and outer quadrant, though you may rely upon what I now tell you that cancer may originate in any portion of the breast substance; and if it lies very deep, or far away from the centre, retraction of the nipple need not be observed.

I have been struck by the observation, founded on the notes of four cases, of the occasional very peculiar occurrence of cancer in what I may well term the thoracic mammary junction, and when the breast is lifted up the cancer will be found to be rather in the skin of the thorax than in the breast, which, indeed, appears to be quite free of it. A patient exemplifying this very interesting condition was operated upon by me in this hospital recently.

The essential diagnostic points to recollect concerning the early diagnosis of this apparently superficial form of scirrhus is as follows: In the few cases I have observed the women asserted that a little pimple had existed under the breast; they could not state how long. Then this had become sore and the present condition of affairs resulted. The ulcer has

⁴ Lancet, January 17th, 1885.

BRITISH MEDICAL JOURNAL, vol. 1, 1883, p. 965.

⁶ Bransby Cooper's Lectures on Surgery, 1851.

⁷ Frederick Taylor, *Guy's Hospital Reports*, vol. xlix, p. 140; abstract of case.

⁸ Post-mortem and Case Book, 1865.

⁹ Path. Soc. Trans., vol. xxvi.

always been round and small, about the size of sixpence on an average. The edges have been red and exceedingly hard, and the infiltration has extended around over an area the size of a florin or a half-crown. The axillary glands have been unaffected.

Many authorities would say that these cases owe their origin to cancer beginning in an accessory mamma. I believe that they are rather examples of the disease originating in an outlying lobule of breast substance, and that as the growth begins very close under the skin the integument soon becomes involved and the curious little circular ulcer above described occurs. It is exactly like a cutaneous cancer or epithelioma, but scirrhus has been found in all the four cases I have seen. I cannot to-day deal with the treatment of this affection, but would remark in passing that you must look upon cancer occurring below the breast in the skin of the thorax with great suspicion, because, though the little ulcer looks small and superficial, so that you say, "I could easily cut that thing out," the cancer is often really deep, and unfortunately usually infiltrates the intercostals and thoracic fascia in a very serious and irremediable manner. The reason is obvious: the cancer does not overlies a thick pectoral muscle and fascia, and is thus in absolute continuity with the thoracic parietes proper.

The conclusions to draw from the above remarks are as follows: Cancer may occur in any portion of the breast, even in its most peripheral lobules, which extend irregularly into the tissues round, far more than you are apt to imagine. The phenomenon of retraction of the nipple is only found when the growth is sufficiently near it to include in its contraction the milk ducts and processes of fibrous tissue which drag the nipple inwards.

THE FAMILY HISTORY.

There is generally some amount of truth in popular beliefs, and no idea is more strongly rooted in the public mind than the hereditary nature of cancer. Now statistics can be made to prove anything, and I do not believe that because one of a woman's near relatives has happened to die of a cancer of the breast she is likely to succumb to the same complaint. I do believe, however, and I think it can be demonstrated, that in certain individuals peculiarities of structure or of growth may be sufficiently pronounced to become hereditary. If a parent has one sebaceous cyst upon the scalp, it does not follow that the children are in like manner affected; but if a parent has multiple sebaceous cysts the offspring will very likely also have them—indeed, there is no class of growths more strongly hereditary. Again, a single exostosis is seldom or ever hereditary, but multiple exostoses are very commonly so; and so in some few cases a remarkably strong proclivity to the development of malignant growths is observed,¹⁰ and it is only in this way that we may explain those remarkable instances, familiar to all practitioners of experience, when cancer hunts down members of a certain family with relentless certainty. On the whole I may, however, confidently advise you to look upon the family history of cancer, so far as breast disease is concerned, as of no great value in aiding you to arrive at a right and certain conclusion.

Nunn found hereditary history in 29 per cent. of his cases, Paget in 33 per cent., while Bryant only estimated that there was a family history in 12 per cent. In the cases at our own hospital, the question has hardly been pressed with sufficient care and accuracy to warrant me in drawing conclusions. This subject has been treated in the strangest possible way. Hospital patients are not noted for accuracy or high intelligence, and their statements as to what their relations died of are far from reliable. Furthermore, not only the history of parents has been taken into account, but uncles, aunts, and even cousins. In the collective inquiry into facts concerning cancer, a summary of which was published by Butlin in the *BRITISH MEDICAL JOURNAL* for 1887, the proportion of inheritance of cancer is stated to be about one in three, which was what was observed by Paget from the results of his private cases. Several instances were quoted of many individuals of the same family dying of cancer. A very important case which may be easily quoted against the inheritance of cancer

is given by Roper, of Exeter.¹¹ "Mr. D. was one of twenty-two children. He married. Neither himself nor his wife, nor any of this extensive family suffered from cancer. Seven children were born of the marriage, and of those no fewer than six died of cancer, the females of cancer of the breast."

It has been well said that statistics can be made to prove anything, and this is well shown by a paper by Mr. Cripps in the *Bartholomew's Hospital Reports*, vol. xiv. Of 168 cases of cancer in St. Bartholomew's Hospital between June, 1869, and October, 1878, where the history of cancer in the parents seemed reliable, 12 parents among the 336 have the disease, or 1 in 28. According to Baker's statistical papers from Sir James Paget's practice, the proportion is about 1 in 24. Taking the Registrar-General's reports for ten years, there are 81,699 deaths from cancer out of 2,379,622 in persons over 20 years of age, or about 1 in 29; that is to say, that the death-rate from cancer is about equal in the whole community to the death-rate from cancer in the parents of those who are cancerous.

HARDNESS AND CONTOUR.

Hardness is one of the most striking and reliable characteristics of scirrhus cancer. On placing the fingers "flat," upon a breast tumour, if the latter feels like a piece of wood or stone let into the tissues, it can hardly be anything but carcinoma. The contour is rarely perfectly globular, more often it is obtuse or irregular, and any distinct demarcation from the surrounding mammary tissue cannot be demonstrated. Although hardness is so characteristic of scirrhus, this must be often felt to be properly appreciated, and I would here specially point out to you that a dense, thick-walled cyst, a chronic abscess tightly distended and surrounded by inflammatory tissue, or an area of breast tissue thickened by chronic inflammation, may all be exceedingly hard, indeed so hard as to deceive even expert observers. At my next lecture I will read you cases to prove what I say regarding this all important point.

MOBILITY.

A carcinoma of the breast is very seldom encapsuled, and never moves about freely, but the surrounding breast substance moves with it. Innocent tumours through inflammatory changes may in truth lose their mobility, but carcinoma never becomes mobile. A perfectly movable tumour, slipping about within its capsule, is never carcinoma. I must here most strongly draw your attention to a little-noticed fact of much interest. In cases of women with very fat mammae a deeply-seated nodule of cancer may be strangely mobile, owing to the softness and semi-fluidity of the medium by which it is surrounded. Furthermore, the skin may not be implicated in the least, owing to the depth of the cancer from the surface. One of the accompanying illustrations is

Fig. r.—Deeply seated nodule of scirrhus in a fat mamma. The skin is not puckered, the nipple is not retracted.

drawn from a case of this nature, and the tumour you see depicted gave rise to all sorts of opinions, but most of them

¹⁰ Space forbids me entering into the question of infected cancer houses or localities, or whether, in cases of hereditary cancer, a vulnerable condition of the tissues to infection is transmitted, or a tendency to strange errors of cell growth.

¹¹ *BRITISH MEDICAL JOURNAL*, 1887.

were erroneous, stating positively that the disease was not cancer owing to its apparent mobility. This was apparent, not real, and merely due to the quantity of oily fat which surrounded the little hard growth. Some years ago I saw a case very similar to this one in the practice of my colleague, Mr. G. R. Turner, where a deeply-seated nodule of scirrhus in a fat mamma gave rise to great differences of opinion.

RETRACTION OF THE NIPPLE.

This most important symptom is brought about by the contracting growth drawing upon the larger milk ducts and fibrous tissue, but it may be entirely absent in cancers at some little distance from the nipple. If a hard lump forms near the nipple, and goes on increasing progressively, while the nipple *pari passu* with the increase of the growth becomes retracted more and more towards it, this is the strongest evidence of carcinoma that it is possible for any one symptom to present to you.

In addition to the contraction of a carcinoma, the nipple may be contracted from the following reasons:

1. The appearance of retraction may be closely simulated by a congenitally imperfect nipple.
2. Chronic inflammatory contraction, especially when associated with chronic abscess.
3. Retraction may be associated with a cyst which has discharged its contents and is shrivelling.
4. Operations, as incisions of cysts, or for abscess may be followed by retraction of the nipple.
5. Retraction is not observed in a rapidly growing carcinoma with sparse fibrous tissue.

PRECANCEROUS CONDITIONS.

It has been asserted by the best authorities that many chronic inflammatory affections of the breast are precursors of cancer. Such are areas of chronic inflammatory tissue which pass under the ill-defined name of chronic mastitis, old abscess scars, and inflammatory conditions of the nipple. If we allow the fact that chronic irritative affections of the epithelium of the breast are potent causes in the production of cancer, we must reflect that, considering the life-history of the mammary gland, its constant congestions and alterations, its liability to duct-obstruction, injuries, local inflammations of all kinds, hardly a woman can reach 50 but she must have an area of mammary tissue, prepared, as it were, for cancerous change. Such areas may be, indeed, of microscopical dimensions, yet, are they the less capable of mischief? In calculating statistical details, the error seems to have been committed of supposing that only cases where damaged areas apparent to sight or touch had to be considered. You may safely draw this conclusion, that women who have had sore and troublesome nipples, or who suffer from chronic inflammations of the breast substance in the neighbourhood of the nipple, are more liable to cancer than others. Beyond this you cannot go.

Personally, I have serious doubts as to the generally received connection between cancer and chronic inflammations of the breast substance itself. If we look for analogous conditions through the body, we are struck by the fact that it is irritation of surface epithelium that is so generally followed by cancer. Such are cancers of the gall bladder or ducts from the fretting of a stone, irritations of the surface of the tongue, of the os uteri, of the glans penis. I do not know of any instance of interstitial inflammations of glands being followed by malignant growth. We may inquire how it is that the epididymis is not more often affected, considering the large number of men who carry in this locality areas of chronic inflammation. Yet primary carcinomas of this part are almost unknown. I have never seen carcinoma of the liver develop in consequence of cirrhosis, or in the areas of indurated tissue left by gummatous disease.

It is otherwise with constant irritation of the larger milk ducts. These are really surface irritations, or infectious for those who hold the latter theory. I should look upon constant and abiding irritation of the nipple in an elderly woman as a far more important precancerous condition than an induration deep in the breast.

And here I may with propriety speak strongly against the practice of treating all chronic diseases of the breast as though they were sure to become cancer. As an instance of the too prevalent doctrine of dealing with every case of disease of the breast as though it were certain to develop into carcinoma, I

need only refer to the remarks of a speaker at a meeting of the Medical Society of London, reported in the BRITISH MEDICAL JOURNAL of December 14th, 1895: "In patients over 34 years of age he held that every tumour of the breast, whether cyst, fibroma, or what not, sooner or later underwent malignant development in one form or another."

If this be correctly reported, I can only say that with all allowance for the opportunities for observation enjoyed by the speaker, I must with diffidence dissent from such sweeping assertions regarding a class of disorders of which we still know so little, and which are so variable in their course and termination. Mr. Bryant's paper at the same meeting abundantly proved how simple cysts could be dealt with, and the breast saved from amputation.

ECZEMA OF THE NIPPLE.

Any abiding soreness and inflammatory irritation about the nipple may worry the epithelium of the adjacent ducts, and so predispose to cancerous change, whether by infection or mere error of growth. The peculiar form of disease I am now about to mention is, as well pointed out by Thin, not true eczema at all, and the term "malignant dermatitis" is far more appropriate to it. While chronic eczema, generally associated with lactation, will get well under appropriate remedies, the malignant dermatitis generally persists in spite of all remedies short of extirpation. This curious affection is found in elderly women, and is characterised by a raw kind of redness of the areola, exactly like an acute

Fig. 2.—Chronic dermatitis of areola, with scab formation early carcinoma beneath.

balanitis, to which Paget, in 1874, so well likened it. The raw surface weeps a watery and viscid discharge, and is the seat of itching or burning pains. On taking a portion of it between the finger and thumb, a distinct thickening of the tissues is appreciated. Sometimes the surface is covered with white scales, and patches of a like nature are seen on the integument around, in scattered, livid, reddish blotches. This affection is at first essentially an inflammatory one associated with marked infiltration of the corium, and deeper tissues with small cells.

Great stress has been laid by Wickham and Darier on the intensity of the process in the papillary layer. I need only

mention that many observers assert that they have detected encapsuled coccidia in these cases, and the dispute as to the existence of these bodies and their relation to cancer must be fresh in your minds.¹² Paget met with fifteen instances of it affecting the areola, all of which seemed to be ultimately followed by cancer. The growths are said to be generally of the ordinary scirrhus variety, though some are of the nature of that peculiar disease of the breast known as "duct cancer," and others appear to have originated actual epithelioma of the nipple, with ulceration and destruction of it. I may add that the affection is an uncommon one, and by no means invariably followed by scirrhus of the breast. I was quite surprised to find notes of only five undoubted instances of it out of the 353 cases of carcinoma at our hospital. Finally, I may add that (1) the disease is variable in its progress; (2) that it is not in a few months, or even of necessity at all, followed by cancer of the breast. You may conclude, if you meet with such a case, that you are justified in looking upon it as a most important predisposing cause of carcinoma; and if it resists the ordinary remedies for eczema, and especially if you feel thickening of the skin or subjacent parts, you are justified in advising removal of the whole breast and affected integument.

Ulceration and Destruction of the Entire Nipple from Chronic Malignant Dermatitis (?)—A married woman, aged 62, who had nursed and suckled a numerous progeny, was admitted into St. George's Hospital on April 21st, 1885, suffering from ulceration of the left nipple. The nipple and parts around it had been sore and painful for over four years. The left nipple had entirely disappeared, and in its place was a circular ulcer about 2½ inches in diameter, with a circular slough at the bottom of it. The edges of the ulcer were very hard and indurated, and there were hard and enlarged glands in the axilla. The whole breast was removed when it was found that the disease was typical carcinoma. It is questionable whether in this case the ulceration preceded the cancer or was caused by the contraction and pressure of the scirrhus beneath, cutting off the blood supply to the nipple.

AFFECTION OF THE SKIN.

Implication of the skin in early carcinoma, if properly weighed and appreciated, is of the utmost value and importance. First, you must carefully discriminate between the puckering and dimpling of the skin caused by the contraction of the cancer pulling upon the fibrous suspensory bands which pass from the gland septa to the integument, and that peculiar coarse puckering of the skin which is seen when the cancer is close to the integument and commencing to infiltrate it. The French authors term this latter appearance *peau d'orange*, and in this country writers on surgery have well likened it to the dimpling seen upon a coarse pigskin saddle. So far as I have seen, this kind of appearance of the skin, with adhesion to the tumour below, is not found in anything but scirrhus cancer. But authors of repute describe it in chronic mastitis and in gummata. It is otherwise with the deep dimple or pucker of early carcinoma.

While this, especially in fat mammae, may be the earliest sign of the disease, you must remember that a very similar appearance is found in an old abscess which has burst and discharged, in shrivelled cysts, or as the result of operations for removal of small adenomatous tumours. If a hard tumour forms in the mamma, and is early associated with a dimple or 'pucker' in the skin, it is almost certain to be carcinoma. Lastly, I will draw your attention to the all-important fact that rapidly-growing cancer may not pucker the skin over it in the least, for it contains but little contracting fibrous tissue. This is well illustrated by the following case:—

A woman, aged 63, was admitted into St. George's Hospital on June 5th, 1895, and was the subject of consultation, on account of a deeply-seated tumour the size of a walnut in the right mamma. She was the mother of four children, but could not suckle with the right breast on account of a poorly-developed nipple. She had noticed the tumour for five or six weeks. The growth was deeply situated in the upper part of the right breast. The nipple was not retracted; the skin was not implicated in any way. On pressure over the growth a sense of elasticity was elicited, and most of the opinions were rather in favour of it being a cyst. On June 6th an exploratory incision was made by Mr. Pick. The tumour was a firm carcinoma, but devoid of the hardness and contraction of scirrhus. It lay upon the pectoral fascia in the deeper layer of mammary tissue.

ENLARGED GLANDS.

Hard, stony glands are common in scirrhus, yet in early cases they are often absent. Do not look upon their absence as proof that the disease is innocent. Hard glands in the

axilla are present in a variety of breast affections, especially tuberculous disease, syphilitic chancre, and some cases of inflammatory mastitis. In obese individuals you may easily miss enlarged glands, hence the importance in operating upon such cases of opening the fascia and carefully examining for them. I would even go farther, and say that to be accurate the microscope can only determine whether glands are affected or not by carcinomatous deposit.

EXPLORATORY INCISION.

When you make an exploratory incision, you will at once appreciate the sudden hardness and resistance offered by even a small nodule of scirrhus to the scalpel; you will see the section is white and glistening, like a section of unripe pear, that the hardness fades off into the surrounding tissues, which are drawn together and contracted. The surface is sometimes covered with little yellowish puncta, from which, on squeezing, accumulation of *débris* of cells emerges, with abundant juicy exudation. There are often small hæmorrhages. "Creaking" of the tissue on section, and concavity of the cut surface, can hardly be appreciated in a nodule of scirrhus the size of a nut embedded deeply in mammary tissue. I would urge you to make yourself thoroughly acquainted with the appearance of freshly cut scirrhus. You will soon learn that exploratory incision is far and away the most reliable guide in cases of doubt, but unless you know what you see, it will avail you little. Never turn to a friend and say "What do you think of that?" Act entirely upon your own responsibility and knowledge. Do not be content with a timid and insufficient incision. Cut well into the suspicious part, and let your assistant evert the wound; sponge away blood from the cut surfaces, and examine the area carefully and deliberately.

CONDITIONS LIABLE TO BE CONFOUNDED WITH EARLY CANCER.

Such being the estimation you should hold of the various diagnostic points connected with early cancer, you will have gathered that there are a variety of affections you may easily confound with it. These may be tabulated as follows:

1. Inflammatory conditions, chronic mastitis, acute mastitis.
2. Abscess.
3. Cysts of various kinds.
4. Other tumours, as fibro-adenoma, sarcoma, or gummatous formations.
5. Phantom tumours.
6. Some rare conditions of the skin of the breast, as keloid and syphilitic affections.

HÆMORRHAGES: THEIR RELATION TO BAROMETRIC PRESSURE.

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My object in this article is to draw attention to a symptom that in diseased conditions of the system may appear coincidently with an abnormally high barometric pressure.

We have had many contributions to the literature bearing upon health as it is affected by the weather; but there is, perhaps, none of more scientific value than that which appeared in the Scottish Meteorological Society's *Journal* of April, 1874, by Mr. Alex. Buchan and Dr. Arthur Mitchell on the Influence of Weather on Mortality from Different Diseases and at Different Ages. Though this paper is beyond praise, there is yet no allusion to the influence exerted by the atmospheric pressure upon the course of disease. In the same Society's *Journal* of April, 1891, there is an article, *Death-rate and Temperature*, by Mr. Gibbins, of Kettins, but no reference to the readings of the barometer. In the most recently published book on meteorology with which I am acquainted, *Meteorology, Practical and Applied*, by Dr. J. W. Moore, there are several chapters on the relation of weather to disease, but there is silence in regard to the state of the barometer as affecting disease, except at p. 364, where the author says: "The coincidence of a high barometer with a great development of cholera has often been remarked, but striking exceptions are also on record." In the course of this writer's introductory remarks on "Acute Infectious Diseases," he states at p. 358, "In my remarks on the influence of season and weather on disease, I shall confine myself almost exclusively to those meteorological factors—mean temperature, rainfall, and humidity; of these, the first

¹² This disease is, in exceptional cases, observed on the scrotum, and I saw a case of this nature at the Dermatological Society some years since, under the care of Dr. Crocker.