ON TWO CASES
OF
CARCINOMA OF THE BREAST,

PRECEDED BY SO-CALLED
ECZEMA OF THE NIPPLE AND AREOLA.

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(Received October 15th.—Read December 10th, 1879.)

SINCE the appearance of a short paper by Sir James Paget in the 'St. Bartholomew's Hospital Reports' for 1874, "On Diseases of the Mammary Areola preceding Cancer of the Mammary Gland," two contributions on the same subject by Mr. H. T. Butlin have been made to the 'Transactions of the Royal Medical and Chirurgical Society.' Mr. Butlin's first paper, contained in the 59th volume of the 'Transactions,' gives a description of the minute anatomy of two breasts, the areolæ of which had been the seat of long standing eczema, and which were removed complete on account of the disease of the areola, the breasts themselves being unaffected with cancer. The second paper, contained in the 60th volume, gives a description of two breasts in which carcinoma had actually occurred, preceded by eczema of the nipple and areola.

During the discussion which followed the reading of this latter paper, I exhibited a drawing of the breast of a woman who came under my observation in the summer of 1876, the nipple and areola of which were affected in a similar manner to, but more severely than those described by Mr. Butlin. The deeper seated changes in this breast were such that several competent microscopists who examined

them hesitated to pronounce them cancerous. This I ventured to state in my remarks at that time. Malignant, however, the disease proved to be, and in eighteen months from the time of the removal of the breast, the woman died of widely disseminated secondary cancer. In the early part of the present year another very similar case came under my care. This patient also died having secondary cancer in various internal organs.

These two cases I have thought worthy of being brought under the notice of this Society for three reasons. *First.* The supervention of cancer upon eczema of the nipple and areola is, I believe, at present unknown except in London, though it is now more than five years since Sir James Paget's paper appeared. The cases mentioned by Sir James Paget and Mr. Butlin are, so far as I know, the only ones as yet published.¹ *Second.* In no previously reported case have the complete clinical history and the post-mortem conditions been described. *Third.* Both these cases differ in some important clinical points from Sir James Paget's description of the cases seen by him, and as the association between so-called eczema of the nipple and cancer of the breast is as yet imperfectly understood, and but little recognised, any marked differences in the general characters of the affection deserve to be made known. Further, both my cases have furnished Dr. Thin with material for working out his views on cancerous growths generally, which he has explained in a paper read before this Society.

CASE 1.—*So-called eczema of the nipple and areola followed by ulceration of the nipple and carcinoma of the mamma. —Recurrence in the peritoneum, liver, and cicatrix.—Death.*

Dinah L—, æt. 40, applied at the cancer out-patient

¹ Since this paper was sent in to this Society, my colleague, Mr. Lawson, at a meeting of the Clinical Society, on October 24th, 1879, read the report of a somewhat similar case.

department of the Middlesex Hospital on July 20th, 1876, for disease of the left breast.

A needlewoman by occupation, she had been married fifteen years, and was the mother of seven children, the youngest of whom was two years old. She had also had two miscarriages. Her catamenia had ceased to be regular since the previous December. She had suckled five of the children with both breasts, but the last two with the right breast only. She had weaned her last child five months before coming under observation, but there was still some milk in the left gland. There was no history of cancer in her family; both father and mother had lived to a good old age, being seventy-three and eighty-four respectively, and her brothers and sisters were all in good health. She herself had suffered from small-pox when seven years old, rheumatic fever when twenty, and an abscess in the patella bursa six months ago.

For six years the nipple of the left breast had been sore. It commenced with a small blister on the summit of this nipple, which, after a time disappeared; then the nipple became red and moist until it gradually melted away, leaving a hole or depression in its place. All this had happened about four years ago, but there was no increase in the size of the hole till six months before, when it began to enlarge and was surrounded with a raised edge; during the whole of the four years there was a weeping eczematous condition of the surface around the hole which had become much worse of late.

When I first saw her there was in the site of the nipple a depressed and foul ulceration bathed in a thin and rather glutinous pus, and having an irregular sinuous border. The upper portion of the border was raised and everted, and consisted of hard, coarse, pale, granulating tissue, the hardness not extending much beyond the edge. At the lower and outer side the margin was neither raised nor indurated.

Beyond the ulceration, and spreading over the skin of the breast in an annular manner for about one inch and a

quarter in all directions, was a purplish-red and weeping surface quite soft to the touch, and showing at places a disposition to be covered with new cuticle.

In the substance of the breast beneath this ulceration, there was some ill-defined hardness, but the ulcer was not fixed or tied down to the underlying tissues. A small warty growth existed a little way from the ulcer. One of the axillary glands was slightly enlarged. The right breast was marked by the scar of an abscess which burst five months ago, and the areola of this gland was a good deal retracted.

She was admitted into the hospital on August 21st, and by this time the ulceration had extended both in area and in depth; the edges were more raised, and some slight hæmorrhage frequently occurred from its surface. The eczematous condition had spread to the skin beyond the areola.

On August 30th, the left breast and the enlarged axillary gland were removed through one wound; on the third day afterwards the sutures were removed, and on the nineteenth day the whole of the wound, except a small spot in the axilla, was soundly healed. She left the hospital well on October 3rd.

From this date till January 27th, 1878, a period of nearly one year and four months, I heard nothing of her. I was then asked to visit her as she was extremely ill, when she gave the following account of herself:

Shortly after leaving the hospital the catamenia, which had ceased for eight months, reappeared; a little later and she became pregnant, and in August 1877, she was delivered of a healthy-looking child. Two months afterwards she was taken ill with sickness, giddiness, and faintness, quickly followed by a severe pain in the pit of the stomach. Three days afterwards she felt a lump in the belly, near to the pit of the stomach, from which sharp penetrating pains shot across the body and through to her back. The lump increased rapidly in size; she frequently vomited a greenish fluid, occasionally tinged with blood;

and had repeated attacks of diarrhoea, attended with a bearing-down pain in the rectum. During the last week both the severity of the pain and the size of the tumour had much increased. The general surface of her body was slightly jaundiced—the face and conjunctiva still more so. As she lay on her back a large tumour, intensely hard to the touch, was seen extending across the right hypochondriac and the umbilical regions, the border of which projected very prominently against the abdominal walls. Some nodules of bony hardness could be felt over other parts of the abdomen, and a wave of fluid was distinctly displaced by the fingers from between the abdominal wall and the surface of the enlarged liver. The cutaneous veins of the abdomen were much enlarged. A flat, indurated growth, the size of a crown piece, occupied the middle of the scar in the left mammary region.

The axillary glands were unaffected. Large internal hæmorrhoids projected beyond the sphincter ani. She was again admitted into the hospital, and died seven days afterwards.

At the post-mortem examination, which was made by Dr. Coupland, the peritoneum was found extensively studded with firm cancerous nodules. Much bile-stained fluid in the peritoneal sac. The liver was enormously enlarged, especially its right lobe, and weighed 108 ounces; its surface was uneven and nodulated, and its capsule thick, rough, and opaque. On section the tissue was extremely firm, of the consistence of gristle, and was pervaded by tough, gristle-like nodules, whitish, ill-defined, and mottled with patches of orange-coloured pigment. Spreading out in all directions around the nodules similar material infiltrated the hepatic tissue, the lobulation of which was very ill-defined. There were some hard, whitish, flattened nodules in the falciform ligament.

The various diseased parts, both those removed at the time of the operation, and subsequently at the post mortem, were examined microscopically. The following is a report of the same made by Dr. Goodhart :

"In the region of the nipple was a rather deep excoriated or ragged-looking ulcer with but little thickening of the edges or evidence of any new growth. At another spot, not far off, on the free surface of the skin, was a small warty projection about the size of a pea, and 2''' high. The rest of the skin had a peculiar milky-white marking over it, as if there had been a good deal of superficial ulceration now healed.

"On section the ulcer described does not go deeply, and the vertical tubes constituting the nipple look uninjured as they run in the fat. The wart-like projection is quite cuticular, and no tendency to infiltration can be seen anywhere. The breast itself is much atrophied, being merely represented by straggling fibrous bands in the substance of the fat. These are usually mere fibres, but in some part they attain considerable thickness.

"The skin appears to me everywhere of rather unusual thickness.

"Sections of the warty growth of the skin ; of the tubuli recti of the nipple ; of the ulcer ; and other deeper parts of the breast, were examined microscopically, and with the following results :—The wart had a rather alveolar structure, and was composed of large mononucleated cells in places tending towards angularity of outline, and of glandular or epithelial appearance. They closely corresponded with those found elsewhere in the deeper layers of the skin. Underneath the ulcer the whole thickness of the skin (Plate II, Fig. 1) was densely infiltrated with cells, but elsewhere, though all the sections that were examined were considerably affected in the same way, the distribution was more partial, and it was in these places that the mode of extension of the disease was seen. Small groups of cells were seen, generally speaking, round gland tubes (Figs. 3, 4, 6), but occasionally round small vessels, and in all cases having a suspiciously close resemblance to the epithelial type. In only one or two places did these foci extend beyond the true skin, but, as will be seen in the drawings (Fig. 2), they extended to its very limit.

"The gland-tubes themselves (Pl. II, figs. 4 and 5), were crowded with epithelium in an abnormal manner, but this is an appearance so apt to be produced in preparation of the slides, that though it may have been morbid, we shall not insist upon it. The adipose tissue, which to a casual examination looked healthy, was in all probability also diseased, as cells, sometimes single, sometimes in twos and threes, of appearance similar to those before described, were seen in many places. It seems probable that they would have proceeded to the formation of foci as others had done in the skin, and this makes me think that ere long there would have been a wide-spread infiltrating growth throughout the entire gland.

"The appearances described appear to me to indicate that some chronic overgrowth of the glandular epithelium was occurring; that the cells thus produced had appropriated tracts in the cellular tissue outside their proper tubular confines, had made that tissue their home, and were thus spreading without limit. This and the fact that the interstitial cells are not small like those of a chronic inflammation, but large and angular, make it clear that if wanting at present in the aggressive character of a malignant growth, though this may well be doubted, the microscopical features show it to be really of that nature.

"I have subsequently had an opportunity of examining parts of the liver and the scar from the breast of this patient. The liver contained firm white nodules of ordinary carcinoma, and of the appearances under the microscope it will be enough to say that there is a wide-spread alveolar growth, the stroma of which, composed of hyaline bands of moderate thickness, forms spaces of regular size filled by clusters of small round cells. The portal canals are evidently the route by which it spreads into the liver. The earliest stage is not at all unlike an ordinary cirrhosis; the fibrous tissue of the portal canal being thick and studded with small round cells. There is also in many places a formation of wide spaces (? lymphatic or cavernous) at the circumference of the portal canals,

and thence the hepatic lobules are attacked. The liver cells appear to atrophy rather than to take any active part in the growth. The bile ducts are not easy to detect, but they do not appear to participate in the disease. With regard to the scar in the breast it is densely infiltrated with small round cells."

CASE 2.—*So-called eczema of the nipple and areola, followed by cancer of the mamma and lymphatic glands.—Recurrence in lungs, bronchial glands, liver, and suprarenal capsules.—Broncho-pneumonia.—Death.*

Emma H—, æt. 33, first applied to me on February 20th, 1879, for treatment of a small inflammatory swelling at the junction of the third left costal cartilage with the sternum. Whilst examining this swelling, which was trivial in character and disappeared altogether in a few days, I was struck with an eczematous condition of the areola of the left breast. To this I paid the most attention, much to the surprise and disappointment of the patient, who remarked that the nipple had been a little sore between four and five years,¹ but she thought nothing of that. Nor was she aware of the presence in the breast itself of an indurated nodule the size of a hazel-nut. She was a single woman, engaged as an ironer, but she had had two children, one when seventeen years, and the other when twenty-five years old. She had suckled both the children at both breasts without any complication; both nipples being then prominent. She had always had good health, and there was nothing in either her previous or family history of any importance except that she admitted being a free drinker, and her aspect confirmed this.

Between four and five years ago a little scale appeared on the summit of the nipple, which after a time either fell

¹ She had been seen at the hospital on July 26, 1877, and there is a note in the hospital case-book of that date to the effect that she had then chronic eczema of the nipple and areola; but no other mammary affection.

off, or was picked off, leaving exposed a moist surface. The scale reformed and was shed again and again, and the nipple became more and more flattened up to two years ago, when what remained of it was on a level with the areola. At this stage, on one occasion, she poulticed the breast on account of the discharge from it, and a "core" came away as from a gathering. This left a hole in the place of the nipple, which gradually healed up, but since then the slightly weeping eczematous area has gone on spreading circumferentially until the whole of the areola was involved. A depression still marks the immediate site of the nipple, and forms nearly the centre of a circle, one and a half inches in diameter, of superficial chronic eczematous inflammation, the base of which is thickened and a little indurated, so that the whole forms a slightly elevated disc about the thickness of an old-fashioned penny. The colour is mostly brownish-red, but violet-red in some parts. The margin is somewhat sinuous. The circumferential part of the area is partly moist and superficially abraded, and partly covered with very thin yellowish scabs. The central, which is also the violet-coloured part, is covered in a rather irregular manner with a new epithelium, which here and there extends in patches towards the circumference. The whole area is perfectly flat without any granulation on the surface.

The discharge from it is very scanty. It is but little or not at all tender, and free manipulation causes no pain. The rest of the skin of the breast is quite natural, but there is a small cord-like projection below the xiphoid cartilage, situated immediately beneath the skin but quite unconnected with the breast, which has been present for several months. In the breast tissue, besides a small hard nodule above and to the inner side of the nipple, there is beneath and below the areola another nodule, the size of a cob-nut, continuous with the under surface of the eczematous disc; and between the upper nodule and the disc there is a linear tract of condensed tissue in the gland. The nodules are not sharply defined, and the

breast generally has a firmer feel than the opposite mamma. There is an enlarged gland in the axilla, of which the patient has been aware, eight or nine months; it has never caused much pain.

The woman was admitted into the hospital, and on March 1st I removed the breast, but left the gland in the axilla untouched. On section the breast was seen to contain a number of nodules which, to the naked eye, in no way appeared to be of a scirrhus character.

On the 11th of March the wound was united.

On the 24th of March three or four slightly enlarged glands were felt in the left axilla, to which some absorbent ointment was applied. At the end of another week these glands had considerably increased in size, and on March 31st the patient was again anæsthetised, and a cluster of glands, the largest the size of a filbert, was removed. Most of them, on section, to the naked eye appeared soft, yellow, and succulent, but the largest had some firmer white growth in its substance.

On April 2nd the sutures and the drainage tube were removed; there was no suppuration and the wound was nearly healed, but the next day she had shivering, and the temperature went up to 100.6° ; yet there was no other constitutional disturbance.

On April 6th she had another rigor, her pulse went up to 118 and her temperature to 100.6° ; yet the wound was quite healed except where the drainage tube had been, and there was no pent-up pus or inflammatory thickening anywhere.

On April 23rd the cicatrices were quite sound; but there was some slight fulness of the glands above the clavicle. She complained of getting out of breath on the most trivial exertion: and the question naturally arose, are the mediastinal glands, or the lungs becoming secondarily affected.

On May 2nd she left the hospital for a convalescent home. During the last week of her stay in the hospital she suffered pain in the epigastrium and right hypochon-

drium, at first slight, and attributed by her to catching cold whilst sitting in the garden, but gradually increasing in intensity.

There was tenderness in these regions and the liver was considerably enlarged, more especially in the epigastric portion. There was dulness in the interscapular groove of the back to the right of the spine. The supra-clavicular glands on both sides were enlarged, more especially on the left, where a diffused swelling was visible. The dyspnoea on exertion continued.

She remained at Eastbourne a week, and on her return went to live at Peter Street, Westminster, from which she removed to St. George's Hospital on May 15th, where she died on May 23rd from broncho-pneumonia. I am indebted to my friend Mr. Marshall for the notes of the post mortem examination.

Both lungs were emphysematous and cedematous in their upper lobes. The lower lobe on both sides was semi-solid from broncho-pneumonia of a very diffuse type. The small bronchi contained puriform secretion. It was chiefly in these lobes that the cancerous infiltration was noticed. It occurred in two situations mainly. 1st, along the bronchi, which were thereby irregularly thickened. 2nd, as cancerous thickenings of the lymphatic channels at the surface of the lung; and as thin, flat expansions under the pleura. The lung being rather irregularly congested, the white lines and deposits of cancer gave to the organ a peculiar variegated aspect.

In addition, minute white nodules were here and there encountered in the lung tissue.

The bronchial glands contained deposits.

The liver weighed 5 lb. 10 oz. Left lobe very coarsely granular at the surface. The organ was firm and waxy on section, and showed extensive, very intimate, and very irregular cancerous infiltration, the colour of the cut surface varied through many shades of red and brown into yellow; of the yellow patches some were due to fatty degeneration of the surviving liver tissue, while others

resulted from decay of the softer cancerous deposits. Cancerous glands were formed on the porta.

The kidneys weighed $8\frac{1}{2}$ oz., their capsules were thickened and partly adherent, and their surfaces very irregular. Both the supra-renal capsules contained cancerous deposits; that in the left was as large as a marble. The parts removed by operation were handed over to Dr. Thin for microscopical examination, and he reports that "the nodule in the mammary gland consists of an epithelial growth presenting the characteristic appearances of cancer extending and burrowing amongst indurated connective tissue. Transverse sections through the remains of the nipple show that some of the ducts are plugged with epithelial cells of various sizes, the cells being therefore of new growth and pathological in character. The skin around the nipple, which in life had the moist appearances of some forms of eczema, showed the following alterations:—The epidermis was almost completely destroyed, the ragged remnants of the rete mucosum consisting of epithelial cells in process of decay; the papillary layer of the cutis was the seat of congestion and was filled with exudation cells; the pars reticularis cutis was mostly healthy. The affection of the skin seems therefore to be a superficial chronic destructive inflammation. The enlarged glands subsequently removed from the patient contain growths of epithelial cancer similar to those in the mamma."

The differences above referred to between Sir James Paget's very concise and lucid description of his cases, and the two now reported are as follows:

1. In one of my cases the eczematous eruption extended beyond the areola, and in both it passed into a somewhat deeper ulceration of the skin.

2. Sir James Paget says cancer has followed in every case within at the most two years, and usually within one year. In one of my cases the eruption had commenced nearly six years, and in the other between four and five years before cancer was suspected. How long the can-

cerous changes had been going on it was impossible to say, but at the longest it is improbable that any such growth had existed for more than one year, if so long ; so that, in each instance, the eczema had preceded the cancer by some four or five years at least.

3. Sir James Paget says that in the cases he has seen, there was always a clear interval of apparently healthy tissue between the diseased part of the skin and the cancer in the substance of the breast ; but in one of the above cases there was a well-marked cord of indurated tissue, and in the other, some ill-defined hardness between them. Moreover, the microscope points to a direct chain of communication, not only within, but also around the galactophorous ducts, between the surface ulceration and the deep-seated nodules.

4. As to the age of the patients in Sir James Paget's cases, it varied from forty to sixty or more years, but in one of the above the age was thirty-three years and in the other forty years at the time when cancer was first suspected ; and if we deduct the number of years during which the eczema had existed, it would make one of the patients twenty-nine years and the other thirty-five years of age at the most, when the local disease commenced.

During the years from 1872 to 1878 inclusive, I have seen in the cancer out-patient department of the Middlesex Hospital, 585 cases of cancer or imputed cancer, in 305 of which the seat of disease was the mamma. The above cases are the only instances in which eczema of the nipple and areola has been associated with cancer of the breast. Nor have I learnt from the subjects of the mammary cancer that they had previously suffered from either eczema or psoriasis of the nipple. In eight instances there was eczema of the nipple, but no cancer ; one of these patients was only eighteen years old, and was suffering from eczema of the skin of the greater part of the mamma. She had been told, so she stated, at another metropolitan Hospital, that there was a cancer, to use her expression, in the "mouth part of the breast," but I could

not find any condition which gave colour to this opinion. This case was interesting from the age of the patient, and from the fact that she was neither pregnant nor suckling, and that the eczema was confined entirely to the mamma.

DESCRIPTION OF PLATES I AND II.

Eczema of Nipple and Areola (Henry Morris, M.A.).

PLATE I. Eczema of nipple and areola. Case of Dinah L—.

PLATE II. Ditto. Case of Dinah L—. Microscopic drawings of sections, showing the changes which followed it in the sublymph cancer.

FIG. 1. Vertical section of the superficial parts of the true skin in the neighbourhood of the ulcer.

a. Epithelial layer.

b. Fibro-cellular tissue of corium. The intervening part is closely crowded with cells of new formation. 1 in.

FIG. 2. Vertical section of the skin from the ulcerated spot.

a. Sections of stained tubes full of cells.

bb. Sections of glands with epithelial cells arranged irregularly.

ccc. Foci of new growth in various parts of the fibro-cellular tissue of the skin.

d. Subcutaneous fat. 1 in.

FIG. 3. Section of a small nodule of new growth in the deepest layer of the corium. It shows transverse sections of tubes with a close infiltration of cells in the fat and fibro-cellular tissue outside. 1 in.

FIGS. 4, 5, 6, show under a high power the form of the cells, their arrangement in the gland ducts, and their spreading in the tissues beyond. $\frac{1}{2}$ in.

So called eczema of Nipple and Areola.