ON THE
MINUTE ANATOMY OF TWO BREASTS,
THE
AREOLÆ OF WHICH HAD BEEN THE SEAT
OF LONG-STANDING ECZEMA.

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It is probably known by many members of this Society that within the last year or two our president has called attention in a short article in the St. Bartholomew's Hospital Reports¹ to the occasional occurrence of carcinoma of the breast in apparent connection with long-continued chronic eczema about the nipple. This relation has been noticed by other of the surgeons attached to St. Bartholomew's Hospital, several of whom are so deeply impressed by the feeling that the eczema stands to the cancer in the relation of cause to effect, that it has fallen to my lot to examine two breasts which were removed completely on account of the eruption, although there

¹ Vol. x, 1874, p. 87, 'On Disease of the Mammary Areola preceding Cancer,' by Sir James Paget, Bart.

was not at the time of the operation any evidence of cancer.

No. 1.—The first was removed by Mr. Savory in the case of a lady, 57 years old, who had suffered from an extremely obstinate eczema of the nipple and areola of long duration. No relief followed treatment, although amongst other measures the free application of strong nitric acid was employed; and as the disease had existed for so long a period, and was the source of considerable irritation, the whole breast was removed together with an elliptical portion of integument including the nipple. The breast did not exhibit to the sight or touch any induration save that produced in the integument of the nipple and areola and for a short distance below them. The nipple no longer projected. It appeared to be absent. The whole areola was scabbed over.

No. 2.—The second case occurred in a woman, æt. 52, under Mr. Smith's care at St. Bartholomew's Hospital. The disease had existed three years. Within the last two or three months of that period the breast had become hard at the upper part. This breast was removed after it had been examined in consultation in the operating theatre. The condition of the nipple and areola was very similar to that noticed in Mr. Savory's case, but in addition there was a good deal of induration at the upper and inner part of the breast. After removal this induration had much the same appearance as certain forms of cancerous infiltration.

The changes found on microscopical examination were, to a certain extent, precisely similar in both cases. They may be thus described.

(a.) The mucous layer of the epidermis of the part affected by eczema had undergone proliferation and was increased in thickness. It was also occasionally traversed by fine fibrous bands, or fibro-cells or spindle-cells.

(b.) The corium and subcutaneous tissue were indurated and infiltrated with small round cells (leucocytes).

(c.) The galactophorous ducts were widely open or

distended. They were not lined as in the normal condition by cylindrical epithelium, but contained frequently large masses of epithelium of the squamous or glandular form. Several of the tubes were completely filled with epithelium.

(*d.*) In the immediate vicinity of the ducts the connective tissue was discovered frequently infiltrated with small round cells, just as were the corium and subcutaneous tissue.

(*e.*) The conditions described in *c* and *d* extended into the breast for an inch or more beneath the nipple.

The further changes found in No. 2 existed in the indurated portions of the breast before mentioned.

(*f.*) The acini were much larger than normal, and were filled with epithelium; they were also more widely separated than is the case in health.

(*g.*) The condition of the ducts and of the tissues surrounding them was similar to that described in (*c*) and (*d*).

The appearances above described naturally give rise to much reflection.

The alterations in the mucous layer of the epidermis and the small-cell-infiltration of the cutis, and even of the subcutaneous tissue, are not astonishing. They are just such conditions as those described by Neumann and Biesiadecki¹ in chronic eczema of other parts of the integument.

But the alterations in the ducts and more especially in their epithelial elements are so striking as to call for special attention. Many of them presented on section much the same characters as those observed in the dilated ducts or follicles of the mammary glandular tumours; some of them were so completely filled with epithelium that they looked like the sections of tubes in tubal nephritis; whilst in others again the epithelium growing out in irregular masses from the walls was traversed by occasional rod-like cells or fibres (as in the mucous layer) and

¹ 'Text-Book of Skin Diseases' (Translated by Pullar). 1871, p. 141.

brought forcibly to one's mind the early stages of proliferating intra-cystic growths. I have not, however, succeeded in discovering any further stages of development within the ducts.

The depth below the surface to which the small-cell-infiltration of the connective tissue in the vicinity of the ducts extended is also much greater than might have been expected.

This last feature becomes more important when considered in conjunction with the enlargement and cell-proliferation of the acini of the lobules in the indurated portions of the gland. These conditions are very similar to those which I have several times found in the immediate outskirts of a carcinoma of the breast. They are described too by Waldeyer,¹ in his articles on the development of carcinoma.

Although the indurated portions of the breast, No. 2, so closely resembled in their naked-eye appearances the characters of certain forms of cancerous infiltration, there was not any structure in the sections which I could convince myself had reached the condition of actual carcinoma.

The changes met with in the most distant parts were without doubt continuous with those produced in and beneath the surface by the eczema. For, although the continuity of the disease could not be traced in any single section (from the very nature of such sections), the disease was found in every section and at all depths below the surface.

There being no cancer present in these breasts it is impossible to say that cancer would have formed in either. The facts before us, however, are not without importance, since they show that considerable changes are capable of being induced in the very substance of a more or less deeply-seated organ apparently by the presence of a very slight area of disease on the surface.

¹ 'Virchow's Archiv,' bd. 55 (1872), s. 124, "Die Entwicklung der Carcinome,"

DESCRIPTION OF PLATE VI.

Mr. Butlin on the Minute Anatomy of Eczematous Breasts.

Fig. 1 shows a section cut down through the eczematous nipple into the breast: magnified from 5 to 10 times (4 in. objective). *a.* Small cell-infiltration in cutis and subcutaneous tissue. *b.* Ducts cut across. *c.* Small cell-infiltration in vicinity of ducts. *d.* Scab on surface.

Fig. 2.—Portion at *a*, more highly magnified.

Fig. 3.—Epithelium in duct.

$\frac{1}{1000}$ in.

Figs. 4 and 5 show small cell-infiltration in vicinity of ducts.

$\frac{1}{1000}$ in. oc. 3, obj. 7, tube drawn out.

Fig. 6.—To show characters of epithelium in ducts.

oc. 3, obj. 7, t. d. o.

Fig. 7.—Section of duct filled with epithelium, less highly magnified.

$\frac{1}{1000}$ in. oc. 3, obj. 4, t. d. o.

Fig. 8.—Section of nodule of indurated breast, magnified as Fig. 1, showing ducts (*b*) and acini in fibrous tissue.

Fig. 9.—Acinus, highly magnified.

$\frac{1}{1000}$ in. oc. 3, obj. 7, t. d. o.

Fig. 10.—Diagrammatic sketch of portion of Fig. 8, more highly magnified—duct and acini (A, 1 in.).

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 6.

FIG. 7.

FIG. 8.

FIG. 5.

FIG. 4.

FIG. 9.

FIG. 10.