THE
DUBLIN JOURNAL OF
MEDICAL SCIENCE

THE OFFICIAL ORGAN OF THE ROYAL ACADEMY
OF MEDICINE IN IRELAND

FOURTH SERIES. No. 17.

JULY, 1921

Original Communications.

LICHEN AXILLARIS, LICHEN ANNU-
LARIS, AND NOTE ON THE
ETIOLOGY OF LICHEN.

By WALLACE BEATTY, M.D., Physician, Adelaide Hospital.

LICHEN AXILLARIS.

*Fox-Fordyce Disease.*¹

Case 1.

MISS E. R., aged 23. Seen in 1906.

She came to me on account of an irritable eruption in both axillæ. I noted "solid pale papules in both axillæ. I punctured two and got no fluid."

She stated that 12 months before she came to me she noticed a rash in the armpits which was very itchy; it seemed to "run," and was said to be weeping eczema.

She was rather pale and delicate-looking, but I found nothing special in her general condition. Functions were normal.

The eruption was limited to the axillæ.

There were a number of small very solid papules, each about the size of large shot. The colour was almost that of

¹ Paper read at the Biological Club, March 22nd, 1921, and Case exhibited.

normal skin. Viewed as a whole the axillary region appeared pale red.

Many of the papules appeared to be connected with the hair follicles. In the centre many hairs were seen. In other papules the hairs were more eccentric, and some papules showed no hairs. A few were centrally umbilicated.

The papules were numerous, close together, but not coalescing, and, when the skin was put on the stretch laterally, were seen to be arranged in lines running antero-posteriorly.

FIG. 1.
(Low power.)

Shows sweat-duct with proliferation of the epithelium around, also cellular infiltration of the upper part of the corium.

There was some sweating, but not profuse.

There was troublesome itching—maddening at times—and a history in the past of disturbed nights therefrom.

Her hands were inclined to perspire.

I was greatly puzzled as to the nature of the eruption; I had never met with a similar case.

Mr. Gordon excised a papule from the lower part of the right axilla. I fixed half in absolute alcohol; half in Zenker's fluid

Before examining the papule histologically, I thought of the following possibilities:—

Chronic folliculitis.—Against this there was practically no redness and no suppuration.

Follicular lichen.—But there were no lesions elsewhere.

Sebaceous adenoma.—But there was no tetangiectases, and the position was unusual.

FIG. 2.
(Low power.)

Shows sweat-duct—epithelium proliferated round sweat-pore.

Sweat-gland adenoma.—I leaned towards this, but I noted many lesions appeared to be connected with the hair follicles.

Leiomyoma.—Only a wild guess!

In the sections of the papule excised I noted:—

1. The coils of the sweat-glands are, some of them, dilated and contain inspissated secretion, and there is a cellular exudation round the coils, and dilated blood-vessels.

2. There are in places groups of cells in the upper part of the corium not unlike what is seen in true lichen.

3. The epidermis is thickened markedly at orifice of sweat duct, and a horny process is seen dipping into one sweat duct orifice.

See Figures 1 to 6. (Photomicrographs of my sections kindly taken for me in May, 1921, by S. Adrian Stokes.) Examination of the sections appeared to me at the time to

FIG. 3.
(Low power.)

Shows sweat-coils, some dilated, containing inspissated secretion; cellular infiltration around coils.

show that the eruption was a lichen with dilatation of the sweat coils and inflammation round them. Later I labelled the sections spiradenitis or inflammation of the sweat coils.

Case 2.

This case presented itself in the autumn of 1920, and I was at once reminded of the case I have just described.

Miss W., aged 22, began to suffer from great itchiness in both axillæ six years ago.

Itching, often keeping her awake at night, came first, the

eruption two or three years later. The areolæ of the breasts became affected about two years ago. Excitement brings on irritation.

She is of nervous nature, but there is nothing very special to note in regard to her general condition. The papules in the axillæ are numerous, firm, pale in colour, some pierced by hairs, some (a few) umbilicated. When the skin is stretched laterally they are seen to run in lines antero-

FIG. 4.
(High power.)

Shows evidence of capillary dilatation round coils.

posteriorly or rather from the front backwards and downwards. The papules are 1 to 2 mm. in diameter. See Figure 7.

The papules on the areolæ of the breast are about 3 mm. in diameter; a few are umbilicated—some are torn by scratching.

These are the only cases of the kind I have ever met with, and I had not come across in my reading an account of similar cases, until two or three weeks ago, when I saw in March, 1921, number of the *British Journal of Dermato-*

logy among current literature "two cases of Fox-Fordyce's Disease," by C. Rasch and A. Kissmeyer.

I quote Dr. W. J. O'D. précis:—

"One case, a female aged 33.—The disease had persisted for 10 years in the axillæ and on the pubic region, and during the later years on the areolæ mammæ. . . . It was very itchy, but the patient was unable to state whether the irritation had preceded the appearance of the skin erup-

FIG. 5.
(High power.)

Shows dilated coil, and actively secreting gland.

tion. The lesions consisted of conical firm brown perifollicular papules, from some of which hairs projected. Others showed a slight umbilication, from which a drop of serum could be expressed, or were topped by a small crust. Intense irritation accompanied the affection—no improvement after two applications of *x*-rays.

"Their second case was a female aged 24. The condition had lasted for four years, was accompanied by very severe itching, and had commenced two months after an abortion as a papular affection in the axillæ, on the external genitalia and areolæ mammæ.

“ Microscopical examination of papules from the pubic regions of both cases showed hyperkeratosis, and parakeratosis, a very pronounced acanthosis with downward prolongations of broad epithelial processes, hypertrophy of rete malpighii most pronounced, around the hair follicles and the orifices of somewhat dilated sweat ducts, and around the vessels in corium an infiltration of round cells, with a few mast cells and occasional plasma cells. The authors con-

FIG. 6.
(High power.)

Shows dilated coils, muscular layer of coils, cellular infiltration around.

clude that the condition is probably primarily a pruritus, the site of predilection favouring a secondary infection from scratching. Reference is made to nine cases previously recorded in the literature.”

In Stelwagon's excellent work on diseases of the skin, I find cases like mine referred to, under the heading of “Chronic Itching Lichenoid Eruption of the Axillary and Pubic Regions.” He writes:—

“Brocq, Fox, Fordyce, Haase and others have reported cases—few in number.” And along with other references he referred to Fox's cases reported in the *Journal of Cutane-*

ous and Genito-Urinary Diseases, 1902, "Two cases of a rare papular disease affecting the axillary region, by George Henry Fox, M.D., with a report of the histopathology by John A. Fordyce, M.D." The affection appears to have been first carefully noted by them, and hence now it is called "Fox-Fordyce's Disease."

Fox's first case was a woman, 28, unmarried, born in Russia. She came to the New York Skin Hospital, Jan., 1899. The eruption was mainly in the axillary region and had existed for a year. Itching was intense, paroxysmal, robbing her of sleep, and impairing her health. She was thin, and of neurotic temperament.

The eruption was papular; the lesions numerous, small, firm, smooth and rounded. Skin was deeply infiltrated and slightly fissured.

The aggregated papules were of normal colour or but slightly reddened—scratching produced congestion and excoriation.

Over pubic region there was a number of small rounded papules: the pruritus was not so intense as in the axilla. Fox called it a chronic lichenoid eczema.

Treatment was unsatisfactory. After eleven months in hospital the note was "Unimproved."

Fox's second case was a young man, neurotic. Papules were confined to the axillary region. The pruritus was intense.

The histological changes found by Fordyce were:—

(1) Hyperkeratosis involving chiefly the sweat duct orifices, their intra-epidermic portions, and the orifices of the hair follicle.

(2) Consecutive hypertrophy of the stratum spinosum (acanthosis) surrounding the altered sweat ducts and hair follicles.

(3) Mechanical dilatation of coil glands which result in changes in their epithelial lining.

(4) Inflammatory changes of a more or less chronic character in the derma.

The histological findings of Fordyce and mine are very much alike. I, too, have experienced as Fox did great difficulty in influencing the condition by treatment.

Notes on Lichen.

The term *lichen*, used without a qualifying adjective, is the one true lichen, called also lichen planus. Its great character is that the elements of which it is composed are small solid elevations of the skin—papules—and remain solid from start to finish, *i.e.*, till they disappear. They do

FIG. 7.

Lichen axillaris.

not undergo any transformation into vesicles, but their surface may become covered with a scale. Different affections characterised by papules during their entire course are often called lichenoid, or lichen with a special qualifying adjective. There are two rare affections which may perhaps be regarded as varieties of true lichen, on account of their

microscopical characters—one, the rare papular disease of the axillary region just described, the other an affection described by Galloway under the title of lichen annularis.

Lichen Annularis (Galloway).

I have met with two examples. One a young lady with a raised crescentic ivory white lesion over a metacarpophalangeal joint. The facsimile of the plate of sarcoid in the *Iconographia Dermatologica*. This was cured by x-rays.

The other, a gentleman kindly sent to me by Dr. Drury in April, 1917. Some three years before he was stung on the back of the left hand by a marsh fly (when in England). The hand swelled, became septic; several weeks passed before his hand got well.

About 6 months later the lesions which I am about to describe began.

The left hand only was affected, that is, the hand that had been septic.

There were three areas of disease:—

(1) A roughly circular area involving the skin over the anterior half of the metacarpals of the middle and ring fingers, bounded laterally by interspaces between middle and index fingers, and ring and little fingers, and reaching anteriorly over metacarpophalangeal joints of middle and ring finger to the roots of these two fingers.

The anterior part of this area was made up of solid whitish nodules, forming a semi-circle, convex forwards in front and towards ulnar side laterally. All over the patch were very slightly-raised white angular lichen-shaped nodules, and these in the centre sprung from a somewhat reddened general surface.

The condition resembled Galloway's case of lichen annularis. B.J.D., Vol. II., p. 221.

(2) Another small irregular quadrilateral marginate area was situated at inner side of the hand opposite the metacarpophalangeal joint of left little finger.

This was a very typical patch—raised white continuous nodular border. The individual nodules which formed this area were solid and small, pea-sized. The central part of

the area was practically normal. This area resembled somewhat the plate of sarcoid in the *Iconographia Dermatologica*. See Figure 8.

(3) A third small lesion about 1 cm. in diameter was present in skin of dorsum of middle phalanx of middle finger.

Two applications of x-rays and the use of salicylic plaster succeeded in removing the lesions.

FIG. 8.

Lichen annularis.

Etiology of Lichen.

The cause of lichen is not yet known. There are three theories:—(1) Nervous origin. (2) Toxic origin. (3) The result of scratching in predisposed subjects, itching being said often to precede the eruption.

The histological characters of lichen seem to me to point strongly to its belonging to the class of granulomata to which tuberculosis, syphilis, blastomycosis, sporotrichosis, etc., belong.

In lichen there are changes in the corium and changes in the epidermis.

In the corium there is a remarkably dense cellular infil-

tration. Small round cells, many probably of connective tissue origin, in the papillary and subpapillary layers, and a most remarkable abruptness in the way this infiltration is marked off from the deeper part of the corium. The deeper part of the corium is normal, except for a few cells round the blood vessels.

In the epidermis there is simply evidences of proliferation in pure lichen, viz., acanthosis, hyperkeratosis, and an irregular thickening of the granular layer, which explains the white striæ often to be seen with a lens on examining the surface of a lichen papule—the so-called sign of the net or network.

The epidermic changes are moderate in extent in acute lichen. In chronic localised lichen they are marked, and there is a considerable thickening of the horny layer with horny processes or pegs dipping downwards into the orifices of the hair follicles, or sweat ducts, or independently of these—this form is called “lichen verrucosus.” In lichen verrucosus constant scratching probably causes the marked epidermic thickening.

Of the three causes mentioned, a pure nervous influence could hardly cause such an anatomical picture—scratching could not account for widespread acute lichen or for the lichen of the mucous membrane of the mouth; so the second cause, toxic origin (perhaps direct microbic influence) remains, and if the anatomical structure may be fairly compared with that of tubercle or some of the other granulomata possibly the finding of a microbe, bacterial or protozoal, is only a matter of time.

Though the cellular infiltration in lichen is usually composed of small round cells, occasionally some plasma cells have been found, and even giant cells. The histology is quite unlike that of ordinary inflammation of the skin; there is no serous exudation into the epidermis, and where wandering cells are found there it would seem to point to an ordinary inflammatory complication.