CASE
OF
ENLARGEMENT OF THE LEFT MAMMA.

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TO WHICH IS ADDED AN
ANATOMICAL AND PATHOLOGICAL DESCRIPTION
OF THE TUMOUR.

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SARAH HARVEY, æt. 21 next birthday, a native of Brandon, was admitted into the Suffolk General Hospital, April 15th, 1845, with an enormous enlargement of the left breast.

Previous history.—Very little indeed was to be gleaned, either as to the nature of the disease or the stages of its formation, from the patient's history prior to her admittance into the hospital. Her health appeared to have been generally good: she did not remember to have been ever ill until three years ago, when she quickly recovered, and again resumed her usual avocation of household servant. She was quite sure her illness did not then influence the breast, although not aware what was its character. About two years since,

for the first time, she observed a red mark, about the size of a shilling, just above the nipple, and that the breast was enlarged: it was painless, even under pressure. She had not observed the enlargement of the breast until the red patch attracted her notice: the catamenia were natural. She continued, for two months after this time, free from any pain in the breast. As soon as it became painful, it appeared that leeches and cold lotion were employed. The breast continued gradually to enlarge, the pain remaining the same; which, however, was not severe. Iodine was also employed fully, but ineffectually.

She remembered having struck her breast some time since with a pump handle, but did not suffer from the blow at the time; and she did not connect the accident in any way with her present disease. In fact, she was unable to remember whether the breast had begun at that time to enlarge.

Actual state, April 15th, 1845.—Breast pendulous: there is a blue, nævus-like spot just above the nipple, about the size of a half-crown piece, and several smaller ones of the same description in its vicinity. A general bluish or slate-colour characterizes the entire surface of the breast. The skin itself, except in the places above-mentioned, is normal, and its leaden hue disappears during pressure. The diseased mass measures around its base fifteen inches; vertically across, nine inches; horizontally across, eleven inches. By gradual pressure, it admits of being reduced to at least one half its bulk. The veins appear enlarged. There is no pulsation, no murmur. When the tumour is reduced by pressure, the patient complains of fulness and heaviness in her head; and on the pressure being withdrawn, pallor and faintness supervene: these manipulations are productive of scarcely any pain. The patient has the fresh and healthy appearance of a country girl; the catamenia are regular and natural, and no difference is experienced in the breast at the menstrual epoch: indeed, with the exception of occasional faintness of an alarming kind and deep mental depression, the constitution is healthy.

The treatment employed was pressure by an air-cushion

within a metallic hemisphere, so as to bear equally upon every part of the breast. The plan was continued three months, but no advantage resulted from its adoption. During its use, the pressure afforded a feeling of support to the part; on its withdrawal, the mamma quickly became distended again, and great faintness invariably followed the return of blood to the tumour. Meantime, in spite of the diminution of bulk by pressure, which was effected by the treatment, the disease itself actually advanced, and in September, five months after admission, presented the following appearances. The patches of discoloration, previously described, had enlarged and become blended, new detached spots had appeared, and the nævus-like discoloration had attained to at least six or seven times its former size, as represented in the Plate. This morbid superficies presented an irregular form, consisting of conjoined patches and isolated spots, having the character of nævus. The parts originally red had become purple, and those newly developed were red. The nipple had become almost obliterated, and the areola was obscured by the invasion of the morbid process. The spot primarily affected had become the seat of venous dilatation, so conspicuous as to form a prominent feature, and its outer tegument was so attenuated as to excite fear of its speedy rupture.

On September 14th, 1845, I conducted my patient to London, and accompanied her to the houses of several surgeons, many of whom I was so fortunate as to find in town. No material difference of opinion existed as to the pathology of the tumour, but much as to the best mode of meeting the exigences of the case by surgical art. Some high authorities suggested amputation of the entire breast, opposing whatever amount of hæmorrhage might occur, by having assistants ready with sponges, tenacula and gallic acid, together with such other expedients as might counteract the retraction of branches of the internal mammary artery, and entrance of air into the veins. Again, it was suggested to introduce single threads through the breast, with a hope of ultimately obliterating the cellulated structure of the tumour. And, finally, it was pro-

posed to take the following course, which, from a preponderance of opinion in its favour, was ultimately adopted.

To place the patient in a recumbent position, to make a vertical incision on either side of the enlarged mass, and, as far as the healthy skin would permit, to dissect back two flaps, securing the bleeding vessels as the operation proceeded ; to pass two very long and strong needles, firmly fixed in handles, through the base, so as to meet each other at right angles in the centre of the base of the tumour ; and having armed them with double ligature, to return them. The needles being detached, the ends of the ligature, eight in number, were to be firmly tied, and the tumour was thus to be strangulated.

I returned home to Bury, and my patient was greatly fatigued by the journey. She fainted at a house on the road, and continually appeared exhausted by faintness. The tumour at this time projected 7 inches from the chest, and measured 23 inches around its base, 13 inches vertically across, and 15 inches horizontally across. It was evident that it was daily increasing ; and the menstrual period having just passed away, I determined to operate speedily. There was at this time a very distinct thrill communicated from the heart.

The operation was performed on the 25th of September 1845, and lasted twenty minutes ; during the latter part of which she was faint, having lost about 14 oz. of blood, and it was evident the shock was severe during the time the ligatures were tightened. She vomited soon after she had reached her bed, and the pulse was scarcely perceptible ; after a short time, however, she rallied a little. Stimulants, mixed with gruel, as well as opiates in a liquid form, were administered from time to time, but were not retained as the vomiting returned. There was now considerable oozing of venous blood, particularly from the inferior portion of the wound through which one of the ligatures had passed. It was arrested by gallic acid and pressure. Opium and beef-tea were administered by the rectum.

Sept. 26th.—Passed a sleepless night. The vomiting still continued, as well as some degree of venous oozing. The

pulse was rapid and small, with other symptoms of collapse, the result of shock and loss of blood. The total loss of blood amounted to about 30 or 36 oz. She sank at half-past 10 A.M., twenty-two hours after the operation.

Autopsy.—8 A.M., *Sept. 27th*—22 hours after death, and 44 hours after the operation.—Body was yet warm. The superficial veins of the neck appeared large and dark. The tumour black, skin detached in vesicles, and rapidly decomposing. The left pleura contained 3ij., the pericardium 3ifs., of bloody serum. The skin over the sternum peeled off with the slightest touch, and decomposition of the surrounding parts appeared to have rapidly advanced. There were no other abnormal appearances. The tumour was carefully taken off, with a portion of the ribs, for minute examination.

Anatomical and Pathological Description of the Tumour.

The external characteristics of the diseased breast have been described above; it remains to give a statement of what was discovered on dissection of the tumour.

A horizontal section of the mamma through the nipple down to the base having been made, an appearance presented itself which was calculated to mask rather than reveal the nature of the disease. It is to be recollected that the ligatures used in the operation, when drawn tight, had the effect of compressing the blood within the vessels of the mamma, and of causing it to stagnate there. The tumour thus strangled had been cut off from the circulation for a period of twenty-two hours, and had remained for a like period after death before it was dissected. The appearances, therefore, on a section being made, were those of strongly-marked congestion, caused by the operation. In the midst, however, of this artificial condition of the tumour, there existed traces of structure both healthy and morbid.

The skin was unaltered in structure, except in the places already described, where the disease was visible externally.

The adipose tissue and fibrous laminæ, situated between the skin and glandular substance, were compressed together,

on the anterior aspect of the breast, into a dense tough membrane, in which there was an almost total absence of the fatty matter. At and around its base, however, the fibrous tissue was natural, except where perforated by dilated veins; and was intermixed with adipose tissue in the usual manner underneath the skin which surrounded the base of the organ.

The lactiferous ducts were observed passing from the glandular structure through the parts in front towards the nipple, but were lost in the condensed tissue before reaching it.

Vestiges of gland, varying in size from that of a millet seed to an almond, and of different forms, were scattered over the exposed surface; and, in common with other structures, were tintured more or less by the blood which had been forced into the vessels by the ligatures.

Besides the venous apertures already alluded to, there existed in the fibrous tissue at the base of the organ, where the dilated veins penetrated, certain cells of considerable size, which were the result of the operation, as will be shown presently. Within these false cells blood was found, in a semi-fluid state and resembling currant jelly; and connected to their walls were seen the torn remains of lactiferous ducts and glandular substance.

It was ascertained by dissection that the arteries and nerves of the mamma were unaltered.

The absorbents, owing to the state of the preparation, were not examined, but there was no evidence of their enlargement. The capillary vessels, for the same reason, could not be injected.

The internal mammary vein, towards its junction with the subclavian, presented an irregular and sacculated appearance. Immediately in advance of each sacculated portion, in the direction of the heart, the vein was narrowed.

The interior of the sacculated portion of the vein was found to present a valve-like formation; the narrowed parts were thickened, and the sacculated parts were formed of one hollow within another.

The superficial veins were dilated uniformly into large sinuses.

The mammary veins, internal and external, were traceable backwards into a cellulated structure, to be described presently.

All the preceding facts were visible to the eye without assistance ; what follows was discovered by the aid of the microscope.

In whatever part of the mammary organ a section was made, and examined under water through the microscope, with a low power, the apparently uniform and glistening surface was resolved into cells. These cells were of various sizes ; and within the greater, lesser ones were visible. Into these cells all the veins of the organ were traceable ; indeed no vein was found to have any other origin, so that the cellulated structure of the tumour was essentially venous, consisting in fact of the veins situated between the capillaries and vein-trunks in a state of distention. The rupture of these cells, from pressure of blood under the ligatures during the operation, produced those large false cells already described as containing blood, pendulous fragments of lactiferous ducts, and their attached glandular substance.

The dilatation of the more minute venous structure of the organ into cells was a medium through which every tissue may be said to have become preternaturally, though uniformly, separated and distended. The effect of this was very evident in the fibrous as well as the glandular structures, which are intimately associated in the breast. By the increase of bulk to which this cell formation gave rise in the organ, the lobes of the gland were separated further apart, and these, in their turn, were subdivided into isolated lobules.

The distending force had likewise produced its characteristic effect on the fibrous structure of the organ, the tissue in question being known to involve the gland and its parts. In health the fibres of this tissue are parallel and closely united ; but when examined in the present instance, they were found to have given way to the dilated veins. Their texture was com-

pletely altered, being converted in some places into a kind of network through which the vein-cells passed. The process of formation of this cellulo-fibrous tissue may be thus described. In the first instance, the fibres are so slightly separated as to be only no longer parallel; they are then perforated by venous cells at intervals; and finally are separated so completely as to appear cellular.

Such were the effects, doubtless, of the formation of venous cells, itself caused by the force of the blood acting gradually and during a considerable period of time upon the venous system, the free passage through which was choked up near the junction of the left internal mammary vein with the sub-clavian. The slight disproportion between the arterial and venous circulation, resulting from the narrowed condition of the internal mammary vein, was the evident cause of the fatal disease which ensued. There was more blood supplied by the arterial, than could be carried off by the venous, system of the mamma; hence its accumulation, and the adaptation of structure to this new condition of the circulation of the organ.

The disease above described, caused probably by the effects of a blow on the trunk-vein of the left mamma, is unique, and may not occur again for a considerable time.

EXPLANATION OF PLATE II.

This plate exhibits the appearance presented by the breast of Mr. Image's patient, just prior to the operation for its removal.