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Paston Cooper, 1840

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On the anatomy of the breast - Of the structure of the mammae in the male

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OF THE STRUCTURE OF THE MAMMÆ
IN THE MALE.

THE parts which constitute the breast of the male may, as in the female, be described under two heads; the *external* and the *internal* organs: the

First consisting of the nipple or mamilla, of the areola, and of tubercles and little cutaneous glands: the

Second, of the gland, and its particular and general organization.

Of the Nipple.

The nipple or mamilla is rounded in its circumference, and but slightly elevated. It is about a quarter of an inch in diameter in the adult, and in form somewhat conical.

Its surface appears wrinkled, and furnishes many points for a higher degree of sensibility and excitability.

In many subjects, both dead and living, a fluid can be expressed from a number of little orifices upon the point of the nipple; but this I have seen more in the dead than in the living, and it requires that the gland behind the nipple should be firmly compressed, to make the fluid escape, and to show those minute perforations.

The nipple is situated opposite to the space between the fourth and fifth ribs, upon the pectoralis major, a little above its inferior edge, the aponeurosis of that muscle being placed behind the nipple and the gland.

The point of the nipple is turned a little upwards, as in the female ; but is somewhat less projected outwards than in women.

The nipple and the gland are connected to the parts behind by a fascia, which allows of some motion to elude injury, and so firmly connects the nipple, that I have never seen it torn off by any violence.

This projection has a covering of *cuticle*, easily raised and shown by putrefaction ; but it adheres firmly to the point of the nipple, from entering between the wrinkling of the skin, and into the openings of the nipple, so that at that part it separates with much difficulty.

When it is separated, the orifices of the nipple may be seen.

The cuticle is thin and delicate, that it may not interfere with the sensibility of the part, or too densely cover the arteries and nerves.

Under the cuticle is the *rete mucosum*, which is in quantity and distinctness very different in different subjects, according to the darkness of colour of the nipple.

The *cutis*, which composes the nipple, is wrinkled into the form of lozenges. *Papillæ* may be seen upon its surface ; but these are much more minute than in the female, as well as much less vascular. They are turned forwards from the basis to the point of the nipple, and to observe them well, the cuticle should be separated by putrefaction, when they will be seen in great numbers, and very distinctly.

When they are filled with arterial blood, their sensibility and excitability are increased, and the nipple admits of being in this way filled by irritation or mental excitement, and emptied in a great degree when that state is passed ; and this is the great reason of its formation as it becomes a slightly erectile tissue.

Of the Areola.

This circle of skin, which surrounds the nipple, is, in the adult, in its diameter, from half an inch to an inch ; so that each radius from the nipple to the circumference of the areola is from a quarter to half an inch in length.

The surface of the areola is smoother than that of the nipple, but like it is wrinkled, only that its wrinkles are smaller.

When the *cuticle* is separated by putrefaction, numerous papillæ appear upon the cutis, so that they exist in the areola

of both sexes, but are much smaller in the male than in the female.

The cuticle is thin upon the areola over the papillæ for the same reason that it is so on the nipple ; indeed, it is often so thin in the young, that the blood-vessels of the cutis can be seen meandering under it.

The rete mucosum exists in the male as well as in the female, but it is less in quantity in the generality of males. However, this depends upon the darkness of the colour of the skin, for if very dark, this pigment become abundant.

It has a reticulated appearance upon the inner side of the cuticle, because it is disposed on the edges or folds of its inner side, which is reticulated.

In the negro which I have examined, the rete mucosum of the cutis of the areola has great density ; and where it is very thick upon the surface of the cutis, it does not appear reticulated, when highly magnified, but is spread as a pigment in flakes over the ridges of the cutis.

The areola is pink in youth, from the small quantity of rete mucosum. In the adult it becomes darker, or of a brownish red ; in old age, of a brown colour.

The *cutis* of the areola has numerous papillæ, as I have mentioned ; but in order to best observe them, the breast should be first injected, and then the cuticle be raised by putrefaction.

The use of the areola is to extend the surface of sensibility and irritability beyond the nipple.

Of the Cutaneous Glands and Tubercles.

The tubercles of the areola are little projections, which form sometimes one only, at others, two circles upon the areola, one at its circumference, and the other near the base of the nipple. *See Plate 1 of the Male, fig. 2.*

When these are examined with attention, a little aperture or apertures are seen in them, and sometimes through this aperture a hair projects.

These apertures lead to little glands in the skin of a mucous kind, and also to the glandular structure which secretes the hairs.

If the cuticle be raised by putrefaction, the orifices are very plain and distinct. They admit, both in the male and female, of receiving coloured injection, and they are thus easily demonstrated.

The pore, or opening in the skin, in the centre of the tubercle, leads into from three to five branches of ducts. I have had them drawn, and they will be seen in *Plate 3 of the Female.*

In the female there are sometimes five orifices in a tubercle, but in the male generally only one.

The tubercles are formed to add to the sensibility of the areola, and the little glands are designed to produce a mucus to lubricate the surface of the areola. These glands in scrofulous subjects often inflame and secrete a diseased cuticle, which desquamates and leaves the areola red and bare of cuticle, which the use of the diluted nitrated mercurial ointment will reproduce.

These glands are very vascular, both in the male and female, as will be seen when the breast is minutely injected, and I have had some of the vessels drawn, and they will be seen in the plates.

The skin of the breast around the areola is covered with hairs in the male, (which are intended to prevent friction and to preserve the temperature of the part under exposure,) and when the cuticle is removed by putrefaction the hairs are seen to be drawn out with processes of cuticle from the cutis. These when filled with coloured injection show similar pores but of less size, and less arborescent than those which are situated at the areola.

The nipple and the areola although less vascular than in the female, are still freely supplied with arteries, which are principally derived from four sources,—the thoracica longa, the external mammary artery, which is sometimes a branch from the axillary artery, sometimes of the thoracica longa,

and by the thoracica suprema, and by the fourth branch of the internal mammary. *See Plate 14, fig. 5.*

The veins of the breast pass in radii from the nipple to a circle behind the areola, and then they take their course to the axilla and to the anterior mediastinum, to terminate in the axillary and internal mammary veins; by the minute division of their extreme branches an erectile tissue is produced.

The absorbents pass from the nipple and areola to the gland in the axilla on the brachial side of the breast, and into the anterior mediastinum on the sternal side. *See Plate 3 of the Male.*

The nerves to the nipple are from the fourth and fifth dorsal posterior or direct, and from the fourth reflected dorsal anteriorly.

The third posterior and anterior nerves send filaments down upon the arteries towards the nipple and areola.