women who have gone at least two or three weeks over the first "missed" period. By that time the concentration of hormone in the urine has always risen so far above the normal that no false negatives need be feared with the ordinary extraction method.

The tests I have performed myself are still too few to allow any final conclusions being drawn. Disregarding my first ninety tests, the results of which may have been influenced by the fact that I was learning the method, I can report that of the next 150 tests sixty-two had a positive and eighty-eight a negative result. No clear positive was found to be incorrect; of weak positive results, which as experience has shown must be counted as negatives, there were ten. Of negatives that became positive at a later date there were three.

These 150 tests were done on 742 toads. Of these, 734 survived the test without apparently being the worse for it. Eight toads died in the course of tests—four during negative and four during positive tests. A number of toads which were not counted, as their deaths obviously had nothing to do with the tests, some of them being males, died during the winter. I do not think that their number exceeded thirty.

Summary

The xenopus test allows a diagnosis of early pregnancy to be made within less than twenty-four hours.

No animals need be killed to obtain the result.

The reliability of the test does not seem to differ from that of the Aschheim-Zondek or the Friedman reaction.

The technique of this test is comparatively simple and very suitable for experimental work on the anterior-pituitary-like hormone of pregnancy.

My sincere gratitude is due to Mr. D. P. Gould of Loughton and Mr. R. Milton for their interest and helpful collaboration in my experiments with xenopus.

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The Henry Saxon Snell Prize was founded to encourage improvements in the construction or adaptation of sanitary appliances, and is awarded by the council of the Royal Sanitary Institute at intervals of three years. The prize in the year 1939 will consist of fifty guineas and a silver medal, and is offered for an essay describing suggested improvements in the construction or adaptation of sanitary appliances. Particulars may be had from the Secretary, Royal Sanitary Institute, 90, Buckingham Palace Road, London, S.W.1.

USE OF THE SKIN OF THE FEMALE BREAST IN PLASTIC SURGERY

BY

J. F. S. ESSER, M.D.

(WITH SPECIAL PLATE)

As the breasts of many women and girls, particularly in countries abroad, are inclined to be too much developed, and the weight of these large glands stretches the surrounding skin, it is sometimes a great advantage to get rid of the superfluous skin, fat, and gland tissue.

Having thought this over seriously, I have for some twenty years advocated the use of this skin for various purposes to supply missing portions. The importance of this from an aesthetic point of view is generally recognized, but few people are aware of the suffering caused by the weight of these heavy glands. Even when not abnormally developed they may be so mobile as to cause serious inconvenience to their possessors, especially where sport is concerned.

Advantages of the Method

It seemed logical to me, therefore, to combine the necessity for supplying skin for surgical purposes with the advantage of reducing overdeveloped glands. I carried this idea further by using not only superabundant skin but even skin of normal breasts which could be taken away without causing any damage. One of the greatest advantages of the method is that the glands are often very mobile and the pedicled flaps taken from them can be easily brought to and be used in remote parts. In several instances I employed the skin for covering amputated stumps of the legs, even beneath the knee, as the legs and breasts can be brought into apposition, and also for plastic surgery of the hand and the arm. On one occasion I made practical use of it on a girl who was a pianist and who was unable to pursue her career because of the scar tissue occupying the whole surface of the inner part of the lower arm, the result of serious inflammation with suppuration and necrosis. After removing all the scar tissue I succeeded in making the articulations and muscles mobile, and in covering the gap completely with a large pedicled flap taken from the breast. In her case the skin of the breast was not sufficient to enable me to close the secondary gap on the gland with the remaining skin, so I had to fill in the gap with the help of an epithelial inlay. Epithelial inlay is a method I introduced in plastic surgery, and is so widely used that I need not here enter into all the details concerning it. I will only say that it consists in taking a mould, with Stent's composition, of wounds which have to be covered by free skin grafts. This mould is wrapped in a Thiersch graft and replaced on the wound exactly as it was when taken, and is kept pressed on it for a week.

The flap on the arm healed completely, and the layer of fat in the flap helped to keep the muscles and tendons of the arm mobile: these had lost their surrounding protective tissue and would have formed scars with the skin flap if the layer of fat had not separated them. The patient was able afterwards to continue her career successfully, and the breast had not suffered. The following are other cases in which the method was employed.

Case I

This patient was run over, and had lost both her legs. They were amputated above the knee-joints, and the skin could not be joined over the right-hand stump. The result was that after further healing the right stump cicatrized conically, while two inches of bone protruded. Professor Borchardt consulted me for this case.

It is obvious that it was of special importance to the patient to keep the entire length of both stumps, as a second amputation and further shortening would doubtless have seriously impaired the control of the artificial limb and the balance in walking. Though there was no chance of taking the necessary skin from the other leg, as is my usual practice, the principle of never amputating a second time in such cases was maintained.

By a coincidence the mamma afforded the necessary help. The patient gave birth to a healthy child in the hospital some months after the accident. Owing to the plentiful milk secretion the mammae were highly hypertrophic, and from their excessive prominence almost invited their use. Instead of cutting out a flap of skin for covering the amputated stump I inserted the stump deeply into the breast, after removing the outer layer by the osteotome and cutting away the scarred skin. The newly cut skin edge of the stump was sewn up to the edge of the incision in the mamma all the way round. As the length of the cut was calculated exactly, the wound was thus completely closed. Fig. 1 (Special Plate) shows the patient with the stump inserted in the mamma, after the wound had primarily healed and the plaster bandage had been removed. The skin and some of the tissue of the mamma adhered firmly all round the bone.

In a second operation, thirty-seven days after the first, almost the whole of the lower half of the mamma, including a thickish layer of glandular tissue, was cut off along with the amputation stump. This flap when sewn up was sufficient to cover the bone completely (Fig. 2). The wound in the mamma was closed by a plastic operation so that the remaining skin of the mamma and the rest of the glandular tissue were equally distributed over the new and smaller mamma. The asymmetry of the breasts could be remedied at the patient's wish later on by diminution of the larger one. It may be mentioned that the position during the process, although not exactly pleasant, was not so entirely strained and unnatural as one might imagine. The photograph in which the plaster bandage has been removed shows that since pressure was not required to keep the leg in position no tension has resulted. This is explained by the fact that the coxa only affords a portion of the necessary flexion, as the spina dorsalis, which bends easily, plays a great part in it. I should like to mention that the glandular tissue transplanted to the stump could be seen secreting milk out of the open seam for some weeks after the severance.

Case II

This patient, a girl aged 19, was run over in Amsterdam by a tramcar, and her right leg had to be amputated three and a half inches below the knee. The end of the amputation stump did not heal well, and I was called in. A tibial ulcer had appeared between the scars. I am, on principle, opposed to reamputation if it is not vitally essential, so I resected all the scar tissue and placed almost the entire mamma, pedicled at its upper and inner side, on the large wound of the stump. The girl's breast was not quite large enough to cover it, as I had previously taken away the greater part of the stump covering as far as the patella, all this skin tissue being scarred.

The great value of this operation lies in its preservation of the knee-joint for moving the artificial limb. The skin of the breast in the above cases has proved, as in other similar cases on which I operated, strong enough to bear the weight of the body supported by the artificial limb. I wish especially to call attention to the

fact that in general all transplanted skin flaps on stump ends must be very carefully treated until full sensibility of the flap has developed.

Case III

This patient was a young woman in Budapest to whose case I was called in. She had lost the middle three fingers and a part of their metacarpi, especially that of the index finger. This accident had occurred in the large cutting machine of a hospital kitchen. The wound healed, but the thumb was completely immobilized and had grown into the hand-stump. I cut away all scar tissue and made the thumb completely mobile, leaving a large wound on the stump of the hand and on the thumb. This large wound was placed in an incision made in her over-developed right breast. The hand remained there during four weeks. The result is shown in Fig. 3 of the Plate.

On several occasions I have healed large burns on the neck by means of pedicled mamma flaps, as well as various mutilation scars due to suppurated scrofulous glands or to other suppurations, and to necrosis of the tissues. It often happens that not only skin but fat and muscle tissues are destroyed by these suppurations.

It is possible to repair not only the lower portion of the face by means of pedicled mamma flaps, but also the upper part, even the whole forehead. I have successfully performed these operations, and in one case I restored the entire skin of the face, including the whole of the forehead, with a pedicled breast-flap. Even though these operations were entirely successful, I wish to point out that, technically, they are the most difficult forms of plastic surgery. On the other hand, the treatment of the chin is comparatively easy, particularly if the breast is very mobile.

In one case I was called in by Professor Borchardt, in Berlin, to operate on a woman aged 40 who had a large blue angioma which looked like a bunch of grapes covering the whole of her chin. I removed the tumour and made a new chin out of a pedicled breast-flap. The result was exceptionally good: her face became quite normal, and remained so. She was very grateful, but said how much she regretted not having met me before, as she had lost a possible chance of marrying and of having children. She also told me that she previously only went out at night, and was not admitted to a hotel for fear of frightening the guests by her appearance.

I will mention another operation, one of amputation of the arm, in which the pectoral muscle is perforated by a tunnel covered with skin procured from a pedicled breast-flap. The secondary gap is sewn together. The object of this tunnel is to hold the artificial limb in place and to move it with the help of a tunnel in the trapezius muscle. Pins must be placed in the tunnels and attached with strings to the artificial limb. If they are only to hold the artificial limb the strings are fixed to the end of it; if they are to move the artificial limb they must be fixed to the part of it which has to be moved.

Monaco.

A conference between the Minister of Health and representatives of local authorities on the Cancer Bill took place on December 7, when Dr. Walter Elliot received members of the London County Council, the County Councils Association, and the Association of Municipal Corporations. Various aspects of the Bill, both financial and administrative, were discussed, and the position of London and the other authorities which will have responsibilities under the scheme was further clarified. The Minister undertook to consider various representations which were made to him.

J. F. S. ESSER: USE OF THE SKIN OF FEMALE BREAST IN PLASTIC SURGERY

FIG. 1.—Case I, showing stump inserted in the breast.

FIG. 2.—Case I, showing the stump after healing of the mamma skin covering the bony end.

FIG. 3.—Case III, showing patient's hand completely healed, both as regards skin cover and mobility of thumb.

G. LAING BROWN: SPONTANEOUS PNEUMOTHORAX AS A COMPLICATION OF ARTIFICIAL PNEUMOTHORAX

FIG. 1.—Right lung after induction of artificial pneumothorax.

FIG. 2.—Artificial pneumothorax on right side and spontaneous pneumothorax on left.