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With compliments of Dr Gurdon Buck

OBSERVATIONS ON THE

OPERATION FOR HARE-LIP, WITH CASES AND ILLUSTRATIONS.

By GURDON BUCK, M.D.

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Success in the treatment of hare-lip depends so essentially upon the proper execution of the several details of which the operation consists—such as preparing the parts for adjustment to each other, the choice of sutures, the manner of inserting them, and their proper subsequent management till the process of healing is completed, that whatever expedients are best adapted to attain these important ends are entitled to preference. The author, having had considerable experience in this operation, proposes to describe in detail the method which he prefers, and which has afforded him the most satisfactory results; and also to illustrate the subject by cases which have recently occurred in his hospital practice.

1. The management of the patient.

If a child, the arms should be brought down to the sides of the body and secured by a folded napkin, passed round them and fastened with pins. The head should be held steadily in position between the hands of an assistant. If the patient is an infant in the arms, an anæsthetic may be dispensed with. Its continued administration interrupts and protracts the operation. Such children suffer but little mentally, and less physically than older patients, as may be inferred from the fact that often they will cease crying in the intervals between the incisions and sutures, and they sooner become pacified after the operation is finished. In the administration of an anæsthetic to older children, the effect may be best kept up by employing a small sponge fastened to a holder, instead of the large, hollow, cone-shaped sponge with which the inhalation is ordinarily commenced. It interferes less with the operative proceedings.

2. Sutures and their management.

Three kinds of sutures may be used.

a. The interrupted thread suture, for which a glover's trocar-pointed needle is preferable to any other. They may be had of all sizes at the thread-and-needle stores. To prevent inversion of the edges of a wound, which is a frequent cause of the failure of primary union, the needle should be passed through the skin, nearer the edge of the wound on its outer than on its inner surface, which is the reverse of what is usually done. Thus inserted, the suture, on being tightened, tends to evert the edges of the wound and confront them more perfectly. The sutures should also be inserted as close together as is necessary to secure the most exact coaptation of the edges. Their multiplicity is not objectionable, inasmuch as at the expiration of twenty-four hours, when agglutination of the edges will have taken place, their number may be reduced by removing the alternate ones. Metallic sutures, in the judgment of the author, possess no advantage over thread; on the contrary, they are not as easily withdrawn, and their presence is just as liable to cause ulceration in their tracks as in the case of thread sutures. Both will remain without producing any harm as long as they are needed, provided the edges of the wound, which they are designed to maintain in contact, have previously been liberated so as to be relieved of all traction.

b. Pin suture, or figure-of-eight suture.

The insertion of the pin is easily and accurately performed by the aid of an instrument devised by the author, and first described in the MED. RECORD of July 1st, 1869, under the name of Suture Pin Conductor. It consists of a needle two inches and a half long, of the thickness of an ordinary knitting-needle, slightly curved toward the point and fixed in a handle. From its point toward the handle it grows smaller round for a distance of half an inch, which facilitates its passage through the skin. Its extremity is bevelled off to a sharp point on its concave side, and is perforated lengthwise for a short distance on its bevelled face, as in the point of a hypodermic syringe. The mode of using it is as follows: The edges of the wound to be approxi-

mated having been traversed by the conductor, guided by one hand, a pin held between the thumb and fingers of the other hand is engaged by its point in the perforated hole at the end of the conductor, and held steadily in place while the conductor is withdrawn. The pin is thus made to follow it with perfect certainty. The great advantage of the instrument is the precision with which the pin is inserted, and the facility with which fresh pins can be substituted for old ones, which have begun to set up suppuration along their tracks, without disturbing the newly-formed adhesions. To guard against suppuration along the track of the pin and upon the surface under the yarn, the yarn itself, after being softened with warm water, should be removed at the end of forty-eight hours, and sometimes of twenty-four hours, so as to allow the constricted surface to recover itself, and then fresh yarn should be applied. This change should be repeated daily afterward till the removal of the pin, which should be done not later than on the fourth day. If the support of the pin cannot yet be dispensed with on the fourth day, it is better to insert a fresh pin near by than to leave the old one in longer than four days. The surface underlying the yarn may also, when necessary, be protected by a patch of three or four thicknesses of adhesive plaster, stuck together and shaped so as to lie upon the skin between the points of entrance and emergence of the pin, and thus separate the yarn from contact with the skin.

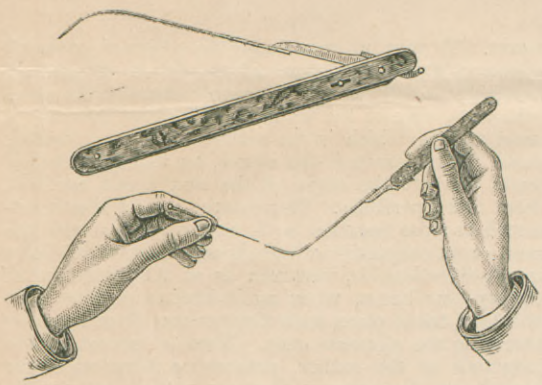

Fig. 1.

c. The beaded wire clamp suture.

Is constituted as follows: A darning-needle, two inches or more in length, is threaded with a soft silver wire, knotted at its distal end after having been previously strung with a smooth, round glass bead and a perforated leaden shot. The needle is made to traverse the skin at a distance of one inch or more from the opposite edges of the wound. A second bead and shot are then strung upon the other end of the wire. While the edges of the wound are crowded toward each other and held in contact, the wire is drawn upon, and the second bead and shot are slid down against the skin and permanently fastened in place by mashing the second shot upon the wire with pliers. The opposite edges of the wound thus held securely in contact and relieved of all strain, may be accurately adjusted to each other by any requisite number of thread sutures. This beaded suture may remain undisturbed eight or ten days, and produces only a superficial ulceration under the beads, which readily heals after their removal and leaves no conspicuous scar. When primary union has taken place only partially, or has failed altogether, this suture is the best reliance for supporting and holding in contact the opposite edges of a wound; while with the aid of adhesive plaster and supplementary thread sutures the adjustment is maintained during the slower process of union by granulation.

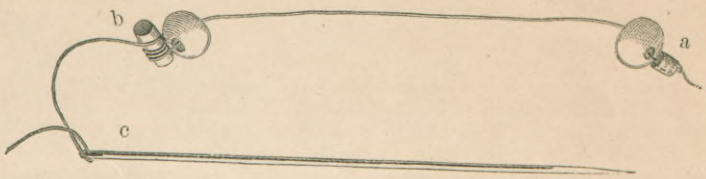

Fig. 2.

NOTE. — Punchings of harness leather, disk-shaped, such as may be had at any saddler's shop, are a good substitute for shot, and are easily perforated with a glover's trocar needle. Fig. 2 represents the constituent parts of a beaded wire clamp suture. *a*. The knotted end of the wire, threaded with a leather disc next to the knot, and a glass bead beyond the disc. *b*. The second glass bead fastened in place by three or four turns of the wire wound around a lucifer-match, which is then cut short with scissors. *c*. A trocar-pointed needle made for the purpose; for which, however, an ordinary darning-needle is a good substitute. An advantage of this mode of arranging the beaded suture is, that it can be tightened or loosened when necessary.

3. Preparation of the parts for adjustment to each other.

A needle, armed with coarse thread, is passed through the two angles of the lip on either side of the cleft, far enough from the border to be out of the way of the subsequent incisions. The ends of the threads tied together form loops with which to hold the parts on the stretch when required. Each half of the lip being put upon the stretch by means of its loop, and drawn away from the jaw, an incision is made along the line of junction between the jaw and the inner surface of the lip, and carried outward as far as the molar teeth. The separation is also continued upward, in contact with the periosteum, toward the cheek. This being done on both sides, permits the two halves of the lip to be approximated and brought into contact without any strain upon the sutures which are to hold them together. The next step is to pare the opposite edges of the cleft. Each half of the lip is again put upon the stretch by means of its loop, while the lip is transfixed near its angle, and an incision carried upward skirting the border of the cleft, and extending somewhat into the nostril. The strips thus detached from both borders of the cleft, but left attached at the angles, are brought down, with their fresh-cut surfaces facing each other, and both are transfixed by a threaded needle. The ends of the thread are tied together, and form a loop with which the strips being put upon the stretch, the fresh-cut edges of the cleft above are held evenly confronting each other, while sutures are inserted to secure their adjustment. During this adjustment an assistant should crowd forward the cheeks toward the median line. Two pin sutures, one below near the vermilion border, and one above near the columna nasi, are to be inserted and wound with cotton yarn. Between the pin sutures three or four thread sutures will serve to perfect the adjustment of the edges. The strips still remaining attached at the angles where the two halves of the lip meet, are to be severed by an oblique section, so that at their junction they will form a projection standing out beyond the line of the lip border. Three

fine sutures should secure this adjustment at the border. By this arrangement the subsequent formation of a notch, which so often mars the result of this operation, will often be prevented. In making the sections just described, a Beer's cornea-knife is very useful on account of the facility with which it transfixes the lip, and the precision with which the incisions can be made. In illustration of the views just advanced, the following cases are submitted:

Case I.—Simple congenital hare-lip. John Black, æt. 12, resident of Piermont, on the Hudson, admitted into St. Luke's Hospital, Jan. 18, 1871. The cleft, involving the right half of the lip, divides it vertically, and extends as a shallow furrow upward along the floor of the right nostril. The right middle upper incisor tooth occupies the cleft, and stands forward conspicuously in advance of its fellows, probably in consequence of lack of support from the absence of the lip. (See Fig. 3.)

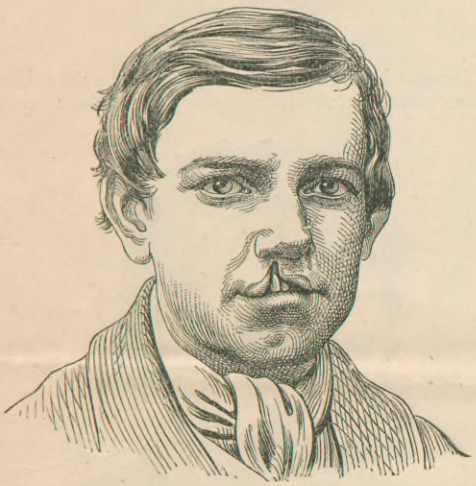

Fig. 3.

Operation.—Performed Jan. 24th, after etherization according to the method above described. A moderate degree of inflammatory tumefaction followed the operation. At the end of forty-eight hours the yarn was changed on the pins. On the third day the upper pin was removed, and the yarn changed on the lower pin. Applied two strips of adhesive plaster across the cheeks to support the parts. On the fourth day removed the lower pin, and the remaining thread sutures. Continued the adhesive straps, which were renewed daily for a week after the operation, when the healing was complete. A very slight notch remains at the lip border where the two halves united. Patient returned home Feb. 10. Fig. 4 shows the result.

Fig. 4.

A Hare-lip Family.—Mrs. Molinieri and her three children, all girls, natives of Genoa, Italy, were admitted into St. Luke's Hospital, Jan. 10, 1871.

Mrs. M. herself bears the marks of a successful operation, performed in childhood, for hare-lip. She has a brother and sister with hare-lip; and besides her three living children she has had four others, all of whom died in very early infancy; three of them had hare-lip, and the fourth only was a perfect child.

Case II.—Jacinta, the eldest, æt. 7, has a single cleft, involving the left half of the lip and extending upward into the left nostril. The cleft also extends backward through the dental arch and bony and soft palates. The portion of the dental arch on the right side of the cleft projects forward at its anterior terminus in advance of the natural curve, and being uncovered by the lip, presents a conspicuous feature in the child's disfigurement. The ala of the left nostril is drawn outward toward the cheek, thereby enlarging considerably its orifice.

A mild attack of measles developed itself soon after admission, and made it necessary to postpone the operation to the 31st January, when it was performed with the aid of etherization, as was done in the case of her two younger sisters.

Fig. 5.

Operation.—After liberating the parts on either side of the cleft in the way above described, I proceeded to break down and reduce into line the projecting portion of the dental arch with Mr. Butchers' bone-pliers—an instrument devised expressly for the purpose. It consists of two jaws of unequal length, with their confronting surfaces flattened and roughened. The shorter blade is blunt at its extremity; the longer one is bent flatwise to a right angle at half an inch from its extremity, and looks toward its fellow with a square, blunt cutting edge at its extremity.

The bony projection was seized between the jaws of the pliers, with its bent jaw applied to the anterior surface high up toward the nostril. The bent jaw was

sunken in the bone, and weakened it so that on bearing down with the pliers I fractured the bone and reduced the projection into line. The integrity of the dental arch was thus restored, and the cleft that had divided it was bridged over. Where the opposite surfaces of the cleft came in contact, they were pared, and subsequently coalesced permanently. This restoration of the bony arch also facilitated the adjustment of the two halves of the lip to each other, and afforded them a good support. The closure of the cleft of the lip was completed according to the method described above. On removing the yarn from the pins at the end of two days, the pin tracks were found already to have sup-

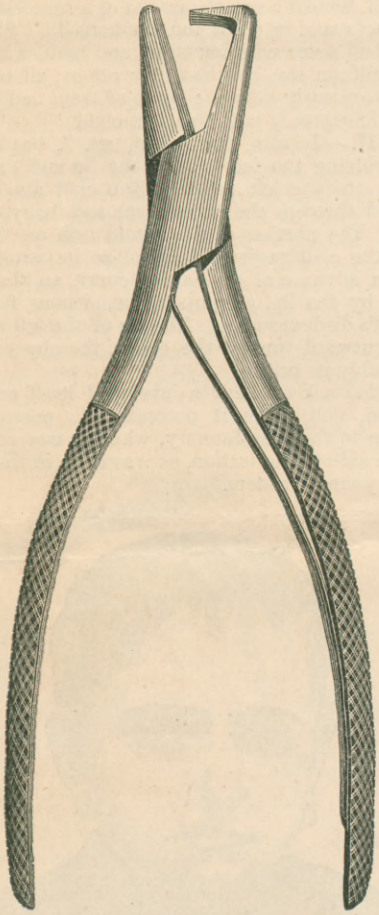

Fig. 6.

purated, and the confronted edges had failed to adhere, except at the vermilion border, where, fortunately, adhesion was secured. It now became important to hold the opposite edges of the wound quietly in contact, while healing by the granulating process should take place. This was accomplished very satisfactorily by a beaded wire clamp suture inserted across the upper part of the lip, and at a distance of nearly one inch from the edges of the wound on either side. This afforded a constant support, while the adjustment of the edges of the wound to each other was maintained by strips of adhesive plaster renewed daily. The granulation growth was promoted by the application of solid nitrate of silver. The beaded suture was removed at the end of the fifth day, and the adhesive plasters continued for three weeks after the operation, when the healing was complete. No suppuration or exfoliation of bone followed the violence done to the jaw. A tooth which was implanted in the projecting portion of the dental

Fig. 7.

arch became loose and was extracted. The dental arch became consolidated and regained its natural curve.

Fig. 8.

A plug of soft sponge was worn in the left nostril to counteract a disposition at its outer margin to fall in after the closure of the cleft of the lip. There was no

Fig. 9.

notch remaining at the lip border where the two halves joined A great improvement in the child's appearance was the result, as shown by Fig. 7.

Fig. 10.

Case III.—Marie Anne, the second child, æt. 4, has a simple vertical cleft involving the left half of the upper lip, from the orifice of the left nostril through the vermilion border, unaccompanied by any complication. Fig. 8.

Operation.—Jan. 21st. By the same method as in the preceding cases. Primary union followed, and on the fourth day after the operation the last suture was removed. Adhesive plasters, however, were continued for a few days longer, to support the parts and relieve the newly-formed adhesions of all strain upon them. Fig. 9 shows the result without any remaining notch at the lip border.

Case IV.—Rose, the infant, æt. 12 months, has a double cleft of the upper lip, without any complication. A central, tongue-shaped portion of lip intervenes between the clefts, which terminate on either side above, at the orifice of the nostrils. Fig. 10.

Operation.—Jan. 21st. The central portion of lip was prepared by paring the edges and giving it an angular shape, so as to adapt it for insertion between the lateral halves of the lip. These were prepared for adjustment to each other in the same manner as was employed in the preceding cases; and the adjustment of the three portions to each other was secured by traversing the three with the upper pin suture. Some difficulty was encountered in reducing the central piece to the same level as the lateral pieces, and it was not entirely overcome. Primary union failed to take place, as in Case No. II., except at the vermilion border, and it became necessary to support the edges of the wound in contact while union by granulation should take place. This was done by the careful application of adhesive plaster, which was renewed daily till the twelfth day after the operation, when healing was complete. A slight elevation of the central piece of lip still remained, which time, however, would be likely to diminish. Fig. 11 shows in this case, as in the other sisters, no remaining notch at the lip border.

Fig. 11.

The mother, with her three children, returned to their home, March 4th, rejoicing in the result of their sojourn at the Hospital.

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