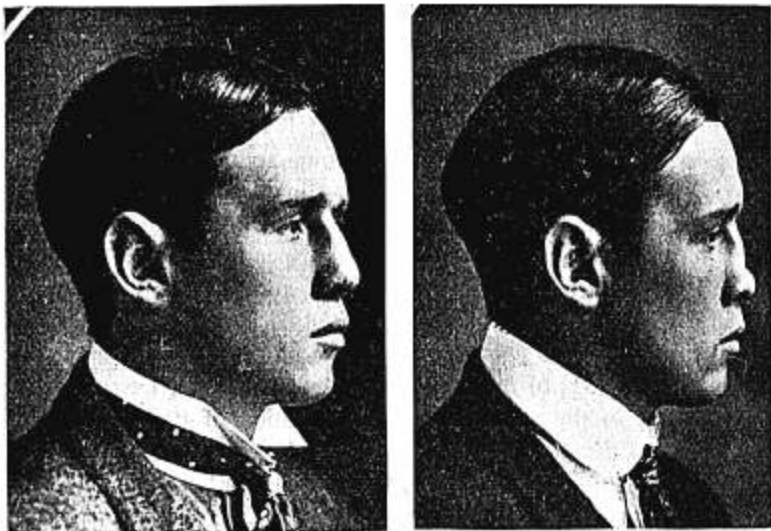


PARAFFIN AS A COSMETIC REMEDY.

BY M. DELMAR RITCHIE, M. D., PITTSBURG, PA.

A brief rehearsal of the use of paraffin, prosthetically, seems to introduce Dr. Heath, of New York, as the pioneer among Americans, in this broad and unique field of work. Although Dr. Corning preceded that gentleman by several years, his work was confined to the injection of sterile oils. A tendency toward accidents in the work with lighter oils, turned the attention of experimentors in the direc-



tion of melted vaseline. During the closing years of the last century, Gersung, of Vienna, achieved some extraordinary results with vaseline. In 1900, he came forth in a voluminous manuscript, in which he stated that melted vaseline was positively inert when introduced into the softer tissue of the human organism. Dr. Gersung's work was largely confined to general surgery, his experiments proclaiming beyond dispute, the possibilities of sterile injections.

Succeeding the Germans, with melted vaseline came Drs. Heath and Lynch of New York, who, with some French investigators substituted hot paraffin for vaseline. Some excellent results are recorded, but again the accidents were of sufficient moment as to dis-

courage the use of heated injection. It was found that heated paraffin, was difficult to control, did not remain *in situ*, was inclined toward misplacement, and easily disrupted into emboli. It remained for an American, Dr. Harmon Smith of New York City to conceive the possibility of injecting cold, solid, or semi-solid paraffin, and thus revolutionize the field, as well as the technique.

In the summer of 1902, a series of experiments, upon guinea pigs and rabbits, in the Trudeau laboratory, at Lake Saranac, N. Y., showed me conclusively, that under no condition, will sterile paraffin act as an irritant, when introduced into the healthy animal. As much as two ounces were introduced into the peritoneal cavity, of a rabbit, without the slightest indication of constitutional or local disturbance. On one occasion, two drams were injected into the lobe of the ear. Upon its removal, in thirty days, the comparative weight of the partially encapsulated material, showed a gain of three grains. Coursing through the mass, could be seen, microscopically, minute thread, and it was to this new tissue, with some absorption of moisture, that was attributed the advance in weight; at least there was certainly conclusive evidence that no paraffin absorption had taken place. Desirous of observation in a highly vascular field, seven grains of sterile paraffin were introduced beneath the conjunctiva, in a rabbit, with a distinctly drooping upper eye lid. No resultant reaction followed, although the ptosis had quite disappeared, thus suggesting to my ophthalmological brethren food for thought.

In the investigations with animals, the injections with but few exceptions, were made without the use of general or local aæsthetic.

INDICATIONS.

1. Traumatism with depression.
2. Saddle back nose.
3. Sinus scars with depression.
4. Mastoid scars with depression.
5. Depressions due to skin lesions.

While the largest proportion of my work has been directed toward the depressed dorsum, due to traumatism, probably the commonest type, to need attention, is the conventionalized saddle back nose of heredity, syphilis, tuberculosis and scrofula.

OTHER USES OF PARAFFIN.

1. Correction of dorsum, between canthi, for accurate fitting of nose glasses, when difficulty of adjustment is encountered.
2. Correction of ptosis.
3. Surgically, within the orbit after amputation.
4. Contraction of hernial orifices.

5. Cosmetically within the scrotum, or, for mental effect upon nervous patient.
6. Correction of disfiguring facial features.
7. On end of long bone to alleviate pressure and prevent adhesions, after amputation.
8. To displace undue depressions about neck or even in contracted mammæ.
9. Correction for nasal enunciation.
10. As a curative measure in incontinence of urine.

ADVANTAGES.

When a choice is to be made between any other surgical interven-



tion and that of paraffin injection, the latter seems to hold, for the following various reasons, viz.:

1. Comparative simplicity, there being no scar whatever, when the technique has been executed with surgical cleanliness.
2. Local anæsthesia suffices, the only pain being that of insertion of the hypodermic needle.
3. The effect of the measure is immediate, the patient making his departure without surgical dressing, beyond collodion and cotton over site of puncture.
4. In the event of failure at restoration of the part, no great injury will have been done by the experiment provided there has been exercised due precaution afforded only by experience.

POSSIBLE COMPLICATIONS.

1. Embolism.
2. Hyper-injection producing deformity.
3. Establishment of fistula to intra-nasal cavity.
4. Slough or abscess over injected area due to pressure anæmia.
5. Inability to heal puncture point, through infection or constitutional disease, such as renal, or diabetic.

Embolism. Since the advent of the screw-piston syringe, the possibility of danger is reduced to a minimum. The screw force makes possible the use of cold, semi-solid or quite solid material. The piston is so graduated, that each turn of the handle eliminates three minims of paraffin. This instrument gives the operator abso-



lute control over the quantity injected, and the paramount to all other advantages, it does away with the necessity of using heated material. The disfavor into which paraffin injection has fallen today in some sections, can almost invariably be attributed to an unfortunate accident, which has befallen some operator who has made use of heated material, with resultant embolus.

The case reported by Drs. Hurd and Holden of New York City, in the *Medical Record* of July, 1903, in which embolus was found in a retinal vessel, comes under the category of misfortunes due to the use of heated paraffin. Had pressure been made by an assistant upon angular veins, between the inner canthi, thus cutting off the only possible exit—or had solid paraffin been employed, the accident could certainly have been averted.

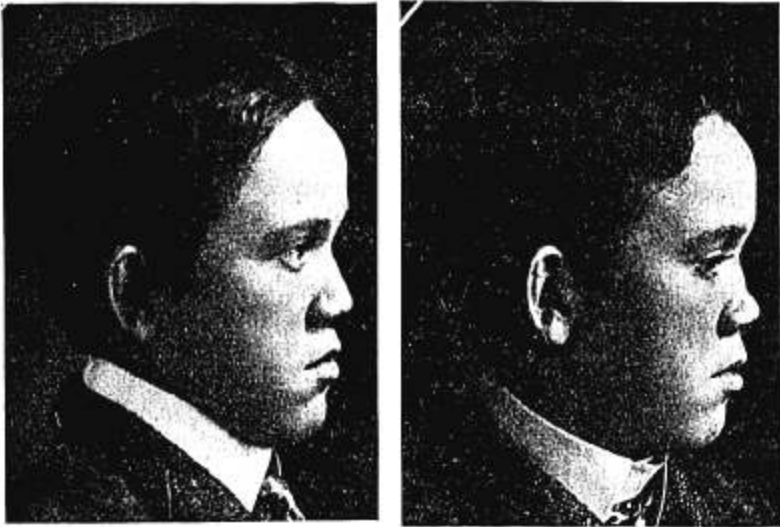
The single accident in Manhattan Eye and Ear Hospital in the hands of an assistant surgeon—that of a double amblyopia, was a very happy termination. While semi-solid paraffin was used in this instance, no pressure was made between canthi. While thrombosis through angular veins seemed plausible, the fact that the patient interrogated the surgeon, before operating, as to the possible danger of blindness, seems to suggest an obvious hysterical element.

Since no accident beyond hyper-injection or misplacement, has followed the use of solid or semi-solid paraffin, when venous compression has been made, it is just to conclude that the danger to life or the special senses is *nil*.



Hyper-injection and Misplacement. Probably the most humiliating circumstance in connection with prosthetic use of paraffin is that of hyper-injection. This accident frequently followed the employment of the discarded push-piston syringe and hot paraffin. This deformity, however, can be reduced quite handily, the shallow scoop affording me the means, on one occasion, of removing twenty minims, through the site of the original perforation. Conservatism in the attempt at correction of deformity is a wiser plan, the introduction of thirty minims producing astonishing effect. In my experience twenty minims is the quantity required to correct the average deformity met with.

Misplacement is usually the result of injecting immediately beneath, or into the skin, rather than upon the periosteum. When the injection is placed immediately over the periosteum, the correction is more permanent, not subject to displacement and is less inclined to produce inflammatory reaction. The error of misplacement will also follow the introduction of too much material before moulding. While pressure over canthi is a most invaluable adjunct to the technique, too great pressure has been of sufficient detriment, as to prevent all venous return, with resultant embarrassing extravasation and ecchymoses of all adjacent soft tissue.



SURGICAL PROCEDURE.

A male patient having been shaven, the field is carefully scrubbed with liquid antiseptic soap. This is followed with alcohol freely, then 1 to 1000 formalin. The field is anointed with a little ether and the subject is prepared.

The hands having been carefully cleansed, the point of election for entrance of the paraffin needle is pierced, with a boiled hypodermic needle. A few drops of a two per cent solution of cocaine is injected into the epithelial layer only. I never inject into deeper tissue, for the subjective sensations of the patient are of material assistance in determining the quantity to be injected. The paraffin which has melting point of 110 F., not being pure paraffin, but a combination of common paraffin with a melting point of 120 F.,

and petroleum jelly. The latter substance having melting point considerably lower than the paraffin, suffices to bring the melting point of the new combination down to 110 F.

The syringe having been thoroughly boiled is placed in warm sterile water. Having removed and dried syringe, the paraffin has also been subjected to a boiling temperature and is now poured into the syringe before inserting piston. The screw on the shaft of the piston is now run into place, the pressure causing all the air to be displaced. The syringe containing the paraffin is now placed into a vessel containing cold sterile water. A few moments are allowed to elapse so that the paraffin will recover its original solid consistency throughout.

The paraffin needle is now warmed in order to facilitate the expulsion of the paraffin therein contained. Each turn of the piston expels three minims of the contained material which should come forth in a steady, white cylindroid thread. Should the paraffin be ejected in spurts, or disorganized granules, ejection should be continued until the steady vermicelli-like thread appears. An assistant now makes pressure over the internal canthi, standing behind the patient.

The needle is gently inserted into the same perforation made by the hypodermic needle, and passed through the soft tissue to the periosteum. It is the wiser plan to see that the needle is beyond the point of the deformity. Three minims are inserted at a time, the syringe being held in one hand while the other is engaged in moulding the quantity introduced at each multiple injection. The needle is gradually withdrawn, the moulding going on all the while. Care should be exercised to see that no paraffin adheres to point of needle as it is withdrawn from the nose. Delayed healing follows the filling of the puncture with paraffin. The syringe is frequently intrusted into the hands of an assistant, while the operator withdraws a short distance, to observe, at range, the progress. If the case is one of traumatism, the photograph of the patient before injury is always placed in convenient position for reference, as the work is graduated. Before withdrawing the needle, the soft tissues should be restored to an even and smooth condition. Should there be irregularities or slight misplacements, these should be corrected by forcible moulding, before proceeding further. Sulphuric ether is now freely sprayed and the underlying paraffin is gradually fixed. The point of entrance of needle is sealed with collodion, and a bit of cotton. The patient is instructed to apply ice cloths to the dorsum of the nose for a period of at least six hours. Ten days are allowed to elapse ordinarily before second sitting, should that be necessary, although I have, on two occasions injected on third day after primary operation.

A New Injector. The screw piston syringe requires the use of both hands in manipulation, the one on the barrel and the other at the handle. Frequently great force is necessary to turn the screw-piston and occasionally one is obliged to remove the needle from the imbedded tissues, in order to warm in sterile water before procedure is possible. Thus it can be understood that considerable dexterity as well as strength, is brought into play in order to control the point of the needle, while imbedded within the soft tissues, during the multiple injections. I have designed a syringe, which, by means of a large double lever and ratchet piston, is operated with one hand. While there is no great haste ordinarily, surgery never looks lightly upon any device that will expedite. With one hand on the lever the paraffin is easily expelled in graduated quantities, while the other is left perfectly free for moulding and manipulation of the tissues. This device does away with danger of counter-opening, and greatly simplifies the use of the syringe at any angle.

CONCLUSIONS.

Observations in one hundred reported cases, together with a personal experience of over two years, seem to warrant the following conclusions:

1. Paraffin is well adapted for use in prosthesis.
2. In comparison with softer forms, paraffin, with melting point of 110 F., seems to be the ideal substance for subcutaneous injection.
3. In the hands of the experienced operator, paraffin at a melting point of 110 F., is inert. In fact it seems justifiable to simulate the injected material, histologically, to so much fatty tissue, being frequently permeated and enveloped by minute trabeculæ.
4. Danger is practically nil. Those unfortunate cases of necrosis, misplacement, etc., being eliminated by radical surgical and artistic scrutiny.
5. *When cold, sterile, semi-solid, paraffin, free from water of evaporation, and air, is injected into surgically clean tissue, the production of embolus is impossible.*
6. One twentieth body weight can be injected into a guinea pig. There is no known danger to life, in the correction of any deformity, however marked.
7. Since many other foreign materials are introduced into the surgery about the head, and since danger of paraffin is practically negative, undue timidity seems unwarranted. The accidents in work with melted vaseline and other liquid materials should not be considered, in the statistics of today.
8. The promiscuous puncturing of facial charlatans, should have no bearing whatever upon the scientific employment of paraffin.

9. Experiment shows that no absorption whatever of paraffin takes place in the human organism.

10. Paraffin is equally well adapted for use in children. Four injections, all under ten years of age, show gratifying and permanent results. As the child matures the presence of the injected material seems to act as stimulus toward increased proliferation of adjacent tissue, so that the growth will be along the line of correction rather than toward deformity.

Case I. E. K., prize fighter. Nasal bones fractured with cartilages greatly displaced by a blow, in the ring, eight years ago. Tip of the appendage greatly elevated. Injected 27 minims without local or general anæsthesia. One week later, injected 21 grains, at site of original puncture. Result mutually pleasing. Several months after operation, patient, in ring fight, received two severe blows on nose without the slightest indication of displacement or inflammation.

Case II. Mrs. J. S., gouty history. Perforation involving cartilaginous and portion of osseous septum. Dorsum frightfully sunken. Hesitated about operating on account of lack of support of paraffin. Decided to inject paraffin with melting point at 130 F., deep into tissue above mucous membrane. This material fortunately acted as support for paraffin at 110 F., injected into overlying tissue. Introduced in all, 90 minims, at one sitting. Result entirely satisfactory, except for temporary extravasation below the eyes, caused by too great pressure on part of assistant. Case exhibited before the Allegheny County Medical Society, December, 1903.

Case III. J. L., traumatic. At two years of age, was permitted to fall by nurse, against the arm of chair, striking nose, producing compound fracture. Large scar running cross dorsum from ala to ala. Adhesions released and thirty grains of paraffin injected at one sitting. Result surprisingly good.

Empire Building, Pittsburg.
