

Frank S. Billings, D. V. S., who was well acquainted with glanders in domestic animals, operation was undertaken under the strictest antiseptic precautions—first to secure from the unopened focus in the leg uncontaminated pus for inoculation in guinea pigs for diagnostic purposes, and second, to mechanically remove the infected tissues. After opening the skin with the cautery a small amount of pus was taken up as it welled into the cautery wound and immediately inoculated into two guinea pigs and three rabbits. These animals were isolated and the two guinea pigs developed the typical orchitis, and the two rabbits died between three and four days after the inoculation of glanders septicemia. The *evidement* of the focus was completed through a larger cautery wound which opened the infected area from an inch and a half below the popliteal space the lower third of the tibia. It was impossible to say exactly where the infection lay, but it seemed to be in the fascia separating the bundles of the soleus and gastrocnemius. After *evidement* with the sharp spoon, the cavity was swabbed out with a saturated solution of zinc sulphate. It was then packed with iodoform gauze, wet in a saturated solution of iodid of potassium. The other foci were treated in the same way, with this addition: that those foci connected with the bones, three in number, had the *evidement* or chiseling extended to the removal of the bone sequestrum and the immediately adjoining healthy bone. Five operations were performed during the first anæsthesia.

There was never any rise of temperature and little inconvenience to the patient from these operations. The wounds healed with exceeding slowness and usually required from three to six *evidements*, though the one in the jaw which was operated upon under the most favorable circumstances healed during the week following the first operation.

The patient became so well acquainted with the symptoms of the localization of the infection that he would call my attention to a spot in which he had felt the characteristic sting and subsequent pain. I marked these points with ink and after anæsthetizing the patient, cut down upon them and either removed them as I would a tumor, or cauterized the focus extensively with the actual cautery and treated it by the open method. In this way during two years and a half, the patient was anæsthetized twenty times, and new foci were opened or old ones scraped out. Only one case of adenitis was observed and this was treated by excision. The number of foci was *fourteen*, namely:

1. The primary focus on the left middle finger.
2. The right thigh.
3. The front of the tibia.
4. The right forearm.
5. The right lower maxilla.
6. The vertex.
7. The right groin, an adenitis.
8. The right popliteal space.
9. The right gluteal region.
10. The left gluteal region.
11. The left calf.
12. The right calf.
13. The recurrence in right tibia.
14. The front of the right thigh.

It seems to me that this case is worthy to be reported because the history is good, the diagnosis was confirmed by inoculation experiment, and recov-

ery has followed rational and persistent surgical procedure. An additional interest is to be taken in the case because of its rareness, and because it was difficult at first to say that it was not tubercular explosion.

# AN ORIGINAL METHOD OF RESTORING THE ALVEOLAR ARCH IN ANTERIOR CLEFT OF THE HARD PALATE AND OF CORRECTING THE DEFORMITY OF THE ALA NASI IN HARE-LIP.

Read in the Section of Surgery and Anatomy, at the Forty-fourth Annual Meeting of the American Medical Association.

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NEW YORK.

The operation I desire to submit to your consideration is intended more perfectly to correct the deformity of the lip, and more particularly of the nose, in anterior cleft of the palate and alveolar arch.

It is a common experience that after plastic work on the soft parts in cases of complete hare-lip and cleft palate, which brings the lip into satisfactory position, the *ala nasi* of the affected side still remains misshapen, flat and sunken. The *ala nasi* rests normally upon the nasal margins of the superior maxilla.

If the maxillæ are normal, and the alveolar arch in front complete, each *ala nasi* rests upon a bony surface and foundation on the same plane, and the two are naturally symmetrical. If one is deficient, the nostril of that side sinks down and out of line just as the corner of a house sags when the underpinning is not high enough. The operation of *advancement of the anterior portion of the upper jaw on the short side* is designed to build up the foundation.

In certain cases of anterior cleft the inter-maxillary process is adherent to one side (the long side), and projects in a clumsy fashion usually to the front and upwards. In these cases the old method of bending or forcing this misplaced process over to the short side and holding it in contact until union is secured, completes the arch and gives a suitable foundation for successful plastic work on the nostril and lip.

When, however, the inter-maxillary process is absent or largely deficient we find one *ala nasi* resting upon a normal portion of the alveolar arch on one side, while on the other it recedes from one-half to one-quarter inch, resting upon the imperfect maxilla and alveolar process. In four such cases I have devised and carried out successfully the following procedure:

About one-quarter inch from the edges which are to be brought into apposition, a hole is drilled through the bone and a strong silver wire carried through, ready for being tightened. The edges are now freshened by slicing off the mucous membrane lining the bone with a strong scalpel or scissors. With a strong pair of straight scissors in very young infants, or a bone cutter the alveolar arch and maxilla of the short side is divided about half way of its length and at a right angle to the dental surface. By introducing a very strong cord of silk or wire into this fissure, and making strong traction forward on this, the undivided portion is fractured and the loos-

ened part, by tightening the silver suture previously introduced, is brought forward, where it is firmly anchored by twisting the wire.

Since the nutrition of the bone in its new position is derived temporarily from the adherent soft parts, these are not disturbed until the bone unites in the new position. From six to eight weeks should elapse before plastic work on the lip and nose is undertaken.

By advancing the bone in this manner, the anterior segment of the alveolar arch is completed and the *alæ nasi* of the two sides rest on the same plane.

Of course the plastic work on the lip and nose must be skillfully done, but the principles here are well established and well known, and it would not become me to take more of your time with these. It is, however, well enough to dwell on the importance of early operations, always within the first years of life, and preferably within the first early weeks after birth, provided that *the nutrition of the patient is good or can be improved by forced feeding*; then, as soon as the patient is sufficiently improved.

When these cases are left to the sixth or twelfth year the muscles of the *alæ nasi* on the short side are partly paralyzed from disuse, and the nostril can scarcely be made to look as well as its fellow.

## A NEW METHOD FOR THE RADICAL CURE OF VARICOSE VEINS.

Read in the Section of Surgery and Anatomy, at the Forty-fourth Annual Meeting of the American Medical Association.

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Varicose veins of the lower extremities are among the most persistent and tormenting afflictions of adult age, not only because of our comparative ignorance of the absolute causes of the condition in the majority of cases, but especially because in the few cases where the cause can be clearly made out, it is almost a matter of impossibility to remove it. Varicose veins are produced either by an increased blood pressure within the veins, or by a diminished resistance of the vessel walls, or both. Whatever be the special cause, the eventual result is nearly always the same—a permanent state of dilatation and consequent thinning out of the walls of the veins on account of the sluggish circulation and increased blood pressure. We know how this condition reaches its climax in a rupture of the vein, giving a serious hemorrhage on the one hand, or if the affected vessels be capillaries, the varicose ulcer is the result. It would be useless to go farther into the pathology of the condition than saying that the initial stage of the trouble is a trophic disturbance, sometimes hereditary and sometimes acquired. The vessels being practically in an aneurismal condition, the question underlying the rapid and effectual cure resolves itself into the principle of cure of an aneurism. This we know to be beyond discussion; the complete obliteration of the dilated blood vessel by mechanical means, by chemical means, or physical means, or two or more of these combined. Inasmuch as varicose veins are not only dilated but lengthened and thrown into loops and curves, the aneurismal tumors which result offer a very extensive area for the application of the various methods of obtaining the

obliteration of the veins. The walls become immensely thickened because of the migration of white blood corpuscles that have subsequently built fibrous tissue, so that there is no tendency for these vessels to contract; the skin has become irritated and eczematous, and at last the whole limb becomes more or less affected.

Of the various forms of palliative treatment we will say but little, as this appeals directly to our common sense and might be consistently adopted as an accompaniment of whatever form of radical treatment is used. All, however, consist in prescribing rest and some form of external support.

Of the radical means, the choice lies between acupuncture, ligature and excision.

In *Acupuncture* a flat needle is passed under the vein and a figure-of-eight thread is applied over the ends. This is done at short intervals, hoping to obliterate by coagulation the intervening section of vein. This procedure is tedious, complicated, very seldom accompanied by success, and exposes the limb to dangers of sepsis and embolism.

The *Ligature* is made by a small incision over the vessel and an aneurism needle passed around it threaded with catgut. This is done above and below the varicose spot and the ligature cut short.

*Excision.*—Excision is done in practically the same way. The vein is carefully dissected out, and being ligated above and below, the intervening portion is excised. Where any great length of vein is involved this is of course impracticable.

Molliere (211, March 30, 1890), employs a solution of 1 part of iodine, 9 of tannin and 200 of water, of which he injects a few drops directly into the veins with a view of producing coagulation. Ricard (100, Oct. 30, 1890). Phelps also advocates the multiple ligature of varicose veins being, however, fully aware of the strictly local effect, and of the recurrence of the condition. Goodwin (2, Oct. 5, 1889), advocates the injection of  $\frac{1}{4}$  minim of carbolic acid into varicose veins, an Esmarch tube having first been applied above. Patterson (2, Sept. 25, 1890) after placing harelip pins, injects perchloride of iron. All of these methods are painful, tedious and so strictly limited in their application that complete relief would necessitate the same procedure over the whole area of dilatation, which would overtax the endurance of a patient.

Recognizing the deficiencies of these modes of treatment, we proceeded to treat the condition in a manner that would remedy it at once. The two great channels that drain the superficial venous circulation of the leg are the internal or long saphena and external or short saphena veins. These and their tributaries are the vessels affected in the varicose condition. The lack of support, or any other cause act simultaneously upon every branch of the vein. The long saphena vein commences in a minute plexus on the dorsum of the foot: it ascends in front of the inner ankle and inner side of the leg, behind the inner margin of the tibia. It drains all the anterior surface of the leg and the whole circumference of the thigh.

The external or short saphenous vein drains the posterior portion of the leg and empties into the popliteal vein between the two heads of the gastrocnemius muscle. This being the case it occurred to me that if obliteration of the varicose veins was the essential factor in the cure, it might be possible to