I wish to call the attention of those especially interested in the subject to the extensive posthumous article by Fano,⁶ in which the views of important authors, as Virchow, Rindfleisch, Hansemann and others, are quoted about different phases of sarcoma, and which to a certain degree mitigate the sharp differences made between sarcoma proper and idiopathic multiple hemorrhagic sarcoma (Kaposi).

There is no cause known and none will probably be disclosed before the etiology of sarcoma in general has been ascertained. In a number of cases the patients were exposed to cold before the skin became affected. In one of my cases¹ the disease began after the patient had bruised his leg. In the case contained in this paper syphilitic infection took place twenty-two years previous to the development of cutaneous manifestations.

It would be preposterous to claim that either syphilis and tabes in the one, or trauma to the leg in the other case, or the exposure to cold in some cases was the cause of the skin affection. But it does not seem improbable that through some internal or external agent, as, for instance, the above-mentioned, the equilibrium of the tonus and resistance of the peripheral vascular system has suffered, and thus has been facilitated the development of the sarcomatous process from the vessel walls.

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THE TREATMENT OF STRICTURES OF THE NASAL DUCT WITH LEAD STYLES.*

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The use of lead styles in the treatment of stricture of the nasal duct is not new. As early as 1867, Dr. John Green, of St. Louis, and, perhaps, others before him, pointed out the advantage of styles made of lead. But styles of this material, or any other, do not seem to have come into general use. Many text-books say nothing of styles. Some advocate gold or silver; a few mention lead; others condemn styles of any kind. My experience with lead styles during the past fifteen or sixteen years has been so favorable that it seems strange to me that they are not more generally used. It also seems justifiable to attempt to show why, when a style is to be used, lead may be entitled to preference.

I do not advocate the use of styles as a universal method of treatment of obstruction of the nasal duct. Many cases will yield to syringing, to syringing and probing, and to other methods; but there remain some cases in which even probing, faithfully carried out for a considerable time, in the most approved manner, fails to produce permanent results. Such cases are seen sometimes in chronic distension of the sac, with or without fistula, and even in simple stricture of the lower part of the duct without distension.

In such cases we are compelled to choose one of three procedures: (1) Leave the patient to his fate; (2) extirpate the sac; (3) adopt some means of permanent dilatation. In the old or feeble, in whom some operation on the globe is called for, and when time is an object, extirpation may be resorted to at once. But permanent dilatation has been so uniformly and happily successful in my hands, that it seems to me that it ought

always to be employed first, when possible. Further, there are many patients who come from a distance, or who, for other reasons, find it impossible to submit to regular and frequent probings for the required length of time. To this class of patients some form of style is peculiarly applicable.

In selecting styles instead of canulas for permanent dilatation, one is influenced by the fact that experience has proved that canulas quickly become clogged with mucus and pus, becoming sources of infection, and at the same time, ceasing to act as drains. This can not be avoided, even by almost daily removal and cleansing, which process is even more irksome to both patient and surgeon than probing. Experience, on the other hand, proves that with a style properly inserted, secretions do not accumulate, the tears readily find their way along the sides of the style into the nose and the patient need not be seen oftener than once a month.

The reasons for preferring lead as the material out of which to make the styles are: (1) It is a pliable material; (2) it is easily cut, smoothed and adapted to each individual case by the surgeon himself; (3) it is comfortable to the patient; (4) it is not acted on by the secretions; (5) it is cheap and easily obtained. On the other hand the other materials available are all objectionable. Aluminum soon becomes corroded, silver also, in time. While this objection does not apply to gold, yet gold is expensive and hard to adjust on account of its rigidity.

I have found that the best lead wire from which to make these styles is probably the fuse wire used by electricians. It contains a little antimony, which in no way impairs its usefulness, but rather enhances it, as it renders it slightly firmer. It is kept in various sizes, according to the amperage it is expected to carry. The best sizes for styles are those of the 5, 10 and 15 ampere capacity, about 1 mm., 1.50 mm. and 2 mm. in diameter respectively; or the wire may be compared directly with the lachrymal probe.

The proper preparation and placing of the styles are essential to success, and close attention must be paid to this important, if simple, technic. After the canaliculus has been cut and the duct dilated, at one sitting or several, to Bowman's No. 5, or even to No. 8, if possible, the depth of the duct is measured on the probe, and a piece of lead wire is cut to the corresponding length, taking off about one-eighth of an inch from the lower end to prevent it from resting on the floor of the nose and allowing from one-fourth to three-eighths of an inch extra length on the upper end to be bent over at a little more than a right angle to prevent its slipping down out of reach. The main shaft of the style should be curved to fit the canal, as determined by the bend of the probe which has been passed. The shoulder or upper end should have a curve slightly down and forward so that it will lie in the slit canaliculus, out of view and without tension. The tip of this upper end must not turn backward toward the eyeball. If it does it will cause trouble by touching the eyeball or by compressing the tissues of the eyelid between it and the eyeball. There should be no tension. If the end sticks up a little, it may be bent down without withdrawing the style.

The style will partly adapt itself to the canal owing to its flexibility, but if the fit is not good, it must be withdrawn, remolded and reinserted till it occupies the proper position without tension. The size of the wire should be the size of, or slightly smaller than the largest probe which has previously been inserted. Before in-

* Arch. f. Dermat., 1907, lxxxiii.

⁶ Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

serting the style, its ends may be smoothed with a fine file or a piece of hard wood. If too long it may be shortened and resmoothed; if too short a new one may readily be made. The making and inserting of the style after the duct is prepared and cocainized need not consume more than five or ten minutes.

After the first few hours, the patient will not be conscious of its presence. It may be worn almost indefinitely, unfelt and unseen. It is a good plan to feel for the lower end of the style with a probe passed along the under edge of the lower turbinate. It is a protection against the use of too short a style. The best instrument to use in inserting and withdrawing the style is a pair of dressing forceps or iris forceps without teeth or sharp edges. The insertion may often be accomplished with fingers alone.

It is best to see these patients once every three or four weeks to remove and replace the styles and to see that all is well. I have frequently allowed the style to remain for a month or longer without removal; in one case for six months and fourteen days. This happened in the case of a school teacher who went away in June, 1907, for her vacation and did not return when expected. However, the condition was good when she did return, late in December. There had been no irritation, the tear passage was clean and the style was neither corroded nor incrustated. So far, the case promises to remain a permanent cure of a very chronic dacryocystitis with acute exacerbations. From choice, I would not leave a style in place so long; but this case shows how harmless the procedure may be during the time which a style is being worn. In every case there is perfect drainage of tears and never any inflammation; hence patients find it agreeable.

The cure may be effected in some cases in a month, in others a much longer time will be required. In one case, that of a woman of 35, I was forced to continue its use for a year and a half, before finally and permanently removing it. In this case the cessation of all treatment was in September, 1900. During seven and a half years since then, I have frequently seen the patient. There is an open duct, no epiphora, and no distension of the sac. This was an especially difficult case. It had lasted for many years, with much secretion and great distension of the sac, and the stricture was almost impervious. Probing had been tried for several months before resorting to the style.

On June 1, 1906, I inserted a lead style into a nasal duct which I had been probing with only temporary improvement for six months. On July 1, 1906, I removed the style which had thus been in the duct one month. Now two years have passed without a relapse. As a rule, after a style has been worn a month or two, I leave it out for a week. Then, if syringing is in any way difficult, I reinsert it for another month. The very old cases of very tight strictures require the longer time.

In no case is appropriate nasal, or other treatment that may be called for to be neglected. I could report many more cases but hope I have said enough to induce every ophthalmologist to try a method which, in my hands, has been uniformly successful.

ABSTRACT OF DISCUSSION.

DR. WILLIAM E. GAMBLE, Chicago: My experience with the canula has been very unsatisfactory. The drainage is not thereby materially improved, on account of the filling up of the lumen by the discharge, which is not lessened. Granulation tissue sometimes springs up, and, after removal of the canula, contraction occurs in the duct, which makes the stric-

ture worse than before. This reaction of the tissues to the presence of a foreign body, especially when it is exposed to the atmospheric air, and, therefore, subject to reinfection, as in the lachrymal sac, has caused me to take the position that use of styles and canulas is unsurgical in principle. However, Dr. Moulton's very satisfactory experience in the use of his fuse lead wire should recall to our attention its probable value. If a wider experience shall corroborate his statement, that it drains the sac better than the canula, his paper will have done service. It appears to me that the style would have a limited use. I would use it in the rare chronic cases of young children in which it is very difficult to pass the probe without general anesthesia, and of other persons who would not consent to it. I scarcely agree with Dr. Moulton's proposition that in all cases the style should be used before extirpation of the sac is performed, for the reason that often the disease is one of the sac *per se*, the sac being a pyogenic membrane and nothing but its complete removal will effect a cure. The greatest advance in recent years in solving this problem is the development of the technic of extirpation of the sac. In my judgment it should be done much more often than it is.

DR. E. E. HOLT, Portland, Maine: I have been using the lead style for thirty-two years. I think, that as Dr. Moulton says in his excellent paper, it is surprising that a remedy so valuable in the treatment of a certain class of these cases is so little referred to in the literature of ophthalmology. It has been my custom to use the larger sizes of wire and to treat the cases very much as recommended by Theobald, dilating the canal with a large probe and selecting a wire a little smaller than the probe used. Dr. Moulton says that he does not like to have the style rest on the floor of the nose. I think that I have aimed to have it rest there so that it would not work down out of the nasal duct. I have never had any serious accident with the style, but my assistant had one, (which I think was too short), slip down the windpipe and lodge at the bifurcation. With the aid of the fluoroscope he located it there and, as the man was sitting in a dental chair, he quickly tipped the chair up so that the head was well down; the man gave a cough and out went the style on the floor.

DR. WALTER L. PYLE, Philadelphia: I believe that the use of the lead style was first suggested by Dr. John Green of St. Louis. It has been used in the Wills Eye Hospital for many years. The question of getting rid of the pyogenic membrane is an urgent one. Many ophthalmologists believe that the only way is to extirpate the sac, and that operation is becoming more and more popular. Meller of Vienna has so simplified it that it is now done practically without hemorrhage. Of course, it is a formidable operation, and its strongest advocate can not lose sight of the fact that it is appalling to the patient. However, when once the proper technic is mastered, the operation is performed without difficulty. As a method of lachrymal treatment, Dr. P. N. K. Schwenk of Philadelphia has had very satisfactory results from the injection of liquid vaselin. He says: "I have frequently applied this method in the treatment of decomposition in the lachrymal sac. After the acute stage of dacryocystitis has subsided, I dilate the punctum, canal, and duct in order to establish drainage into the nose; cleanse the sac with an antiseptic wash (boracic solution), and follow this with an injection of liquid vaselin. In quite chronic cases I do a slitting operation (modified Bowman) so as to establish free drainage into the nose. The vaselin is soothing to all the parts with which it comes in contact, and even penetrates the phlegmonous tissue, destroying any foci of bacteria. I have a number of such patients who feel grateful for the relief given them, and they seem more comfortable than those whose sacs have been sacrificed. The treatment is applied once or twice a week until relief is established."

DR. W. C. POSEY, Philadelphia: My experience with lead styles has been very favorable. Thus, in cases in which one would naturally resort to probing, that is, cases in which the mucous membrane of the sac and duct are healthy and there is merely a stricture to be combated, it is my practice to give the patient a general anesthetic, to slit up the canaliculus and

dilate the duct widely after Theobald's method, and then to keep the duct patulous by the insertion of the style. The pain of repeated probings is thereby avoided, and I believe that the results of treatment are more lasting. The patient suffers but little inconvenience from the style and no disfigurement. If the mucous membrane of the sac or duct is diseased and the seat of virulent bacteria, I prefer extirpation of the sac to any other procedure.

Styles have rendered me excellent service in the treatment of acute dacryocystitis. After a general anesthetic has been administered, the sac is incised through the canaliculus by Bowman's method, and after dilatation of the duct with a rapid dilator or by probing, a style is inserted into the duct. Healing has always been rapid and uncomplicated. This procedure is superior to the usual external incision into the sac, inasmuch as it obviates the necessity for the subsequent division of the stricture by probing. Dr. Moulton's technic is, in general terms, the one which I have usually employed, though I do not make a practice of removing the style for cleansing purposes, but leave it in place for weeks and months.

Dr. F. C. Todd, Minneapolis: The method is of great value. I have been using methods similar to this, with canulas for the past ten years, and my experience has been quite extensive—almost indeed to the exclusion of probing. Dr. Moulton speaks of having one case in which the style remained in place six months; I have a patient who is wearing a gold canula that he has worn now for eight years and he will not let me take it out. He keeps it clean by closing the nostrils and drawing the secretion down by inspiration. The use of this method of treatment undoubtedly obviates in many cases the necessity for extirpation of the sac, though of course it does not do away with it, nor does Dr. Moulton assert that it does. I do believe, however, that the gold canula can be used with more relief to the patient because of better drainage, if properly fitted and if the patient can keep it clean without the use of a syringe.

Dr. S. L. ZIEGLER, Philadelphia: Lead styles are indicated chiefly in cases of dacryocystitis, stricture of the duct and caries of the lachrymal bones. The lead style is not usually kept in the duct as long as some of the speakers have stated, because there is some tendency to the growth of granulations. Otherwise the style is very efficient. I have made certain modifications in the lead style. Pure lead wire is somewhat soft, and while being introduced into the duct it may bend on itself. By the addition of a small amount of tin alloy the wire is so strengthened that it can be passed very easily and still have the necessary flexibility. I have still further modified this by having the wire drawn with a small groove, which I think facilitates drainage. The size of the style generally used is a No. 8. I usually precede its use by introducing my rapid dilator. There is a little trick in removing the style. It sometimes slides down, the tissues grow over it, and there is difficulty in getting hold of it. If you will use the small Meyhoffer chalazion curette with teeth, you can slip this under the style and get it out easily.

Dr. ALBERT E. BULSON, JR., Fort Wayne, Ind.: I have used the fuse wire with great satisfaction, and for several years have been partial to the use of solid styles in the treatment of all of my cases of lachrymal obstruction. I even use the lead styles in the treatment of acute as well as chronic dacryocystitis, with the result of saving my patients from the needless suffering caused by probing, while at the same time bringing about permanent drainage. I have not found it necessary to remove the style often, and after the preliminary opening of the duct and insertion of the style I frequently tell my patients to return in the course of three to six weeks, the interval depending largely on their convenience as well as on the condition of the eye. I now have a patient who has worn a solid lead style for five months without removal, and she has recently reported that she experiences no trouble from it. The styles may be permanently removed in from six months to one year as a rule, but it is better to have the patient wear the style a little longer than necessary than to remove it too early and find it necessary later to reinsert it. A point to be remembered is that the style should be perfectly smooth everywhere. Care should be exercised in bending the fuse wire so

as to avoid making indentations and rough places, which are very easily produced, owing to the softness of the metal. The bending should be done with the fingers and not with instruments. I usually do the bending after I have measured the length on the straight fuse wire inserted, the end resting on the floor of the nose. This does away with the possibility of getting the style too short. I think that the style should always go down close to the floor of the nose. In adults I seldom use anything but the largest fuse wire, which is about the size of an ordinary No. 6 Bowman probe. The removal of the style is best accomplished by the use of the ordinary small ring curette, which will slip over the end of the shoulder of the style, and by means of which the style may be easily withdrawn. It is surprising how well the tears will drain into the nose, even while the style is worn, and the avoidance of the painful probing is a distinct advantage in favor of the plan of treatment outlined by Dr. Moulton.

Dr. H. MOULTON, Fort Smith, Ark.: Please do not condemn styles because you have had bad experience with canulas. A canula will not drain these passages, whereas a lead style or any wire will. A canula may do it in some instances. Dr. Todd speaks of his patient as being comfortable, but you notice he has to cleanse the passage; if a style were used that would not be necessary. The canula needs about as much attention as the duct does when you are using probes. When secretion decomposes granulations are started up. The style is cleanly; the tears and secretions will go down. If you use it in cases where there is a distended sac the tears and mucus will go down and the distention will disappear. I do not use the larger sized wires; I use one about equal to a No. 5 or 6 Bowman. The lead wire should be a little smaller than the largest probe you have used.

THE QUANTITY AND QUALITY OF BREAST-MILK DURING THE FIRST TWO WEEKS OF THE PUERPERIUM.*

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CHICAGO.

The study of the newborn child during its first month of life is properly a part of the obstetrician's duties, as the relationships of mother and child are so interdependent at that period that neither can be regarded apart from the other with wisdom or safety.

It is a gravely important epoch in the infant's life, covering as it does new processes for advance toward an independent existence when the mother will be no longer a source of direct nutrition.

The elaboration of the blood through direct oxidation by way of the respiratory tract, and the digestion of breast milk through the alimentary tract, are radical and abrupt changes which check the growth for a few days in most instances and in many cases for a much longer time. The duration of this check varies according to the promptness and thoroughness with which the new natural processes are accomplished by the child. It also depends on the purity and quantity of the two elements required for these new offices, namely, pure fresh air and good breast-milk.

The cases for this report have been collected through hospital service entirely, and have each been under observation about two weeks, as most of the patients leave the hospital at the end of the fourteenth day.

The following rules have been observed in the care of the patients reported:

The infants are applied to the mother's breast shortly after birth, within the first six hours usually, and every

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.