WHEN SHOULD CONGENITAL CLEFT PALATE RECEIVE SURGICAL TREATMENT?

Read before the Chicago Dental Society.

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This is a subject upon which there is a decided difference of opinion among eminent specialists who pursue distinct methods of treatment. I believe this to be mainly due to the fact that in the two general classes of treatment for congenital cleft palate, that which relies upon artificial means for its success is performed by the dental profession, while the other, or surgical operation, is confined almost entirely to the medical profession. And as in other instances, when these two professions are called upon to treat the same character of disease or deformity, there has never been in either profession an intimate knowledge of the method of treatment peculiar to the other, or an appreciation of its inestimable advantages in certain conditions. Were the relations of the two professions of a more intimate nature, these things might become so adjusted ethically as to render interference at times by one or the other inexcusable and, possibly, subject to the law of malpractice.

Dr. Norman Kingsley, of the dental profession, who has doubtless had the largest experience in the treatment of congenital cleft palate by the artificial method, has published the following radical opinions in reference to treatment in this deformity: "The only cases in which surgical interference is justified are those rare ones of slight separation and with an abundance of tissue where the division of the muscles would not be essential to success. Of the hundreds of cases that might seek surgical aid, very few would come under this exception; and although the practice has been tested in a thousand cases by the most eminent surgeons of their time, it has resulted in such a uniformity of failure, considered as a beneficent operation, that it should have been utterly abandoned long ago."

Although this never could have been written with a full knowledge of the success of surgery when employed during babyhood, or at a time, I claim, when surgical interference should be considered as imperative as the operation for lacerated perineum and other conditions which are discovered and demand surgical treatment as early as advisable after birth; yet most unfortunately it is true, that almost every professor of surgery in medical colleges, who has had more or less experience in operating for congenital cleft palate, will perform this operation before his class upon every patient who presents for treatment, of whatever age or condition of cleft, or tissues.

I can understand how there may be an occasional case of cleft palate with sufficient redundancy of tissue to warrant a skillful surgeon in attempting an operation for a patient after the age of 5, 10, or even 15 years, and with every probability of obtaining a natural palate that will meet all the requirements of speech. But successes of this kind are so very rare they prove nothing, neither do they justify the wholesale attempts that are made where there is no possibility of doing more than to surgically unite the borders of the cleft. And far too often, as Dr. Kingsley says: "When the only apparent object was to gain *éclat* by the skillful use of the knife in a difficult case before an admiring audience, and with

no possible hope of even a union or surgical success."

Surgical success in these operations consists apparently in a permanent closure of the fissure by uniting the tissue along the border of the cleft. But this is not success, unless the only real object that is worthy of consideration under the circumstances can be attained, *i.e.*, a palate which in conjunction with the pharyngeal muscles will enable the patient among other things to completely close the naso-pharyngeal passage. This is absolutely necessary for perfect speech; not only to obtain the proper quality of tone, but to enable them at times to forcibly expel all the air, which is the vehicle of voice, through the mouth, and often through a narrowed opening with intensified force,—as in speaking the words hiss, hush, etc. And again, in those vocal interruptions which can only be perfectly produced by a complete closure of every avenue of escape of an accumulated pressure of air, with the production of a sudden vocal explosion at the lips, or between the tongue and different locations along the roof of the mouth or palate, as in pronouncing the letters B, T, K, etc.

I have been told recently by an eminent surgeon that even after a staphyloplastic operation, the velum palati could be surgically extended to any desired length. This is a claim which I believe is not justified by anything which has yet been accomplished. If so, a practical proof would be hailed with joy and go further towards establishing this very doubtful claim than the bare assertion of any man however eminent.

It has been my intention for some time to bring the subject of this paper prominently before the surgical profession for general discussion, with the hope that it might lead to a careful comparison of the advantages of artificial vela and obturators, with the surgical operation known as staphyloplasty in congenital cleft palate.

In presenting this paper to the Chicago Dental Society, I feel very much like apologizing for occupying your valuable time with a subject relative to which so few dentists are actively interested; and yet it has seemed to me eminently proper that a question relative to an operation which in all its branches belongs distinctively to dental and oral surgery should emanate from a dental society, whatever larger influence I may hope for it in other quarters where only one branch of the operation is so unhesitatingly practiced under all conditions, and where little is really known of the other from a practical standpoint.

I shall not go into the causes and differential conditions of cleft palate, or attempt a detailed description of any particular method of treatment; but will endeavor to treat the subject from a popular standpoint, taking it for granted that my hearers of the dental profession are sufficiently well informed in every branch of this subject for the purposes of this paper.

What is the principal object of the patient, or friends of the patient, in submitting to an operation of this kind? It is almost invariably for the purpose only of perfecting or benefiting articulate speech, which is often so impaired in tone and vocal articulation as to destroy every hope and possibility of a life that otherwise would be an ornament to society and successful in every undertaking.

At the close of last year's term of school, I received a letter from a young man who had come to me two

years before with speech so imperfect as to be understood with the greatest difficulty, and for whom at that time I inserted an artificial palate. Accompanying the letter was a program of the graduating exercises of the High School of Manistee, Michigan, in which he was down for the "Salutatory," having been given the highest honor of his class not only, but a position which could not be properly filled by a person with indistinct or imperfect utterance of the English language. The following is a part of his letter: "I have sent you under separate cover an announcement of the graduating exercises of the class of '94, of which I am a member, thinking you would like to see the part you have played in the exercises. For I owe it to you that I am to take part." He has since written me from the University of Michigan, where he is taking the classical course with high anticipations of the future because, as he says, his friends now tell him that he speaks with perfect articulation.

This is only one of many similar instances in my practice and the practice of other specialists, showing the perfect success of artificial palates that have been inserted after the age of 15.

For the purpose of bringing before you unquestionable evidence of the value of the artificial method of treatment in congenital cleft palate, I have selected from my *clientele* two patients who are with us this evening, whose experience as regards time in wearing an artificial palate is widely different. The one gentleman, now 30 years of age, began about 15 years ago, while the other, a young man 19 years of age, will be remembered as coming before this society a year and a half ago, two weeks after the insertion of his first artificial palate. At that time he was presented by me merely to show the improvement principally in the quality of his tone, and in certain enunciations that were previously impossible. When you hear these gentlemen speak, as they have kindly consented to, after the reading of my paper, you will be convinced, I think, that were you to meet either one in private conversation—where the opportunity of using a lower tone than is possible in this hall would be greatly to their advantage—that nothing in the character of their speech would suggest the deformity under which they labor.

The treatment for congenital cleft palate of whatever character, is usually the crowning event of a patient's whole life; for upon its success in enabling him to speak distinctly depends his future. It is often the one event for which they have been saving and looking forward to for years; and what is of a far more serious nature in throwing the responsibility of a being's future upon the operator who attempts the correction, it is usually the only operation they will undergo, whatever its final result. By this I do not mean they will not allow the operator to perfect or improve his first operation; but that after they have first investigated the subject of treatment, choosing the method which seems to promise the greatest benefit, and the operator upon whose skill so much depends, they usually will forever abide by the consequences. In some instances their means will not permit a second outlay of money, to say nothing of other things, for a second or different operation, the success of which they have much reason to doubt. In other instances, if the operation is a surgical one, which is successful only as to the perfect union of the fissure without material improvement in speech, or

with an improvement which is not equal to that which certainly could have been obtained by a skillfully adjusted artificial palate, the latter operation is rendered impossible, unless the cleft is disunited for the proper insertion of the artificial velum, an undertaking that will rarely be submitted to, even if it were possible for results equal to those which might have been obtained in this way at first.

Of the hundreds that are yearly added in private and hospital practice to the list of patients having a partial or complete disunion of a once surgically united cleft palate, few ever apply for a second operation of any kind for various reasons. It is doubtful if many of these patients could acquire the ability to successfully use an artificial palate with the muscles of the natural velum and uvula stiffened and contracted by the cicatricial tissue of the operation, when so much depends upon the mobility and sensitive activity of the natural muscles in acquiring the power to properly use an artificial velum as an adjunct of speech; just the same as the muscles of the hand acquire the ability to use an instrument of any kind in the accomplishment of an object which could not be attained without that particular instrument skillfully fashioned for the purpose and made to do the bidding of muscle and brain in the production of beautiful music or the restoration of a decayed tooth. If the muscles have lost the possibilities of their natural cunning, either by disease or by a surgical operation, the most perfect brain and instrument are powerless to accomplish more than indifferent success.

When patients have come to me from time to time with a surgically united cleft, realizing the inadequacy of their operation and with the hope of improvement by artificial means, it has been my custom to tell them that nothing could be done without first opening the suture, at least through the soft palate, and then with no promise of success beyond the probability of an improvement in their speech.

I have one patient who is at present the Auditor of the Toledo & Ann Arbor R'y, who underwent surgical treatment for congenital cleft palate when quite a boy at the hands of those eminent surgeons, Drs. Agnew and Garretson. I found the soft palate perfectly united, but anterior to this in the hard palate there was an ovoid fissure about the width of a cent. This was covered by a plate with a flexible extension made by Dr. Patterson, of Kansas City. When I first met this patient, about six years ago at Jackson, Mich., he was very skeptical as to the benefits of any mode of treatment. He was accompanied by his sister who had brought her daughter, who was suffering from the same deformity, for consultation, or rather for investigation of my method of treatment. When I heard his strongly expressed doubts as to my ability to render a service that would enable his niece to speak perfectly, I privately sent for one of my cleft palate patients, whom I introduced to them with no explanation. After quite an animated conversation, in which my patient did most of the talking, I told them that the young man was wearing one of my palates. At this they were greatly surprised and could hardly believe it until they had examined the palate and saw the cleft which was very large and apparently quite difficult to treat. It is needless to say that this decided the operation for his niece which proved so successful that later—about three years ago—he insisted upon my making the attempt

to construct an artificial palate for him without opening the suture in his soft palate. I found upon trial with a certain form of flexible rubber palate that the requisite posterior extension or veil of the palate could be rolled up and thus thrust through the fissure, where it was firmly buttoned in place by a lingual extension of the rubber. When in place, the artificial velum now unrolls to the proper width and extends fully three-fourths of an inch beyond the posterior border of the surgically united palate, without even then coming in contact with the posterior pharyngeal wall, until raised by the muscles in the act of closing the passage to the nose, on the principle of a valve, the same as all artificial vela are successfully worked. This instrument he has used quite successfully, and, as he writes, "with marked improvement in his speech; especially in using the telephone which had previously given him much trouble."

We have with us this evening a gentleman about 30 years of age, who was also operated upon surgically when a boy with the usual result to speech, so far as I can learn, of all operations performed after 5 or 10 years of age. When he came to me about six months ago I found the fissure perfectly closed, but with the velum palati so rigid and short that it could not be made to reach within a half inch of the posterior pharyngeal wall, in consequence of which his speech was quite imperfect, especially in quality of tone and in those vocal enunciations which require a complete closure of the naso-pharyngeal passage. After weeks of consideration, he finally consented to have the suture opened through the soft palate for the introduction of an artificial velum, which you will find has brought about an improvement in his speech that is not often possible in so short a time under the most favorable circumstances for patients at his age.

The next patient I wish to present to this society is a woman upon whom as perfect a staphyloplastic operation has been performed as is possible. You will find upon careful examination of this case that the operator has taken advantage of the most approved and modern method of cutting those tense palatal muscles on either side which have so often been the cause of ultimate disunion of the suture on the one hand, and, on the other, when union has been permanent, in a tenseness, immobility and shortening of the velum that aborted its every possibility of becoming a useful adjunct of speech. I do not wish to be understood as exhibiting this patient—who now speaks so imperfectly as to be understood with the greatest difficulty—as a fair sample of the invariable result in speech arising from a staphyloplastic operation, for I have met with a number whose vocal articulation was far more perfect. On the same principle also, this is true of many with open clefts who have received no treatment whatever. My main object in presenting this case is to show a condition which may follow the most skillful and successful operation—considered from a surgical standpoint—performed during adult life with every advantage of an abundance of palatal tissue, and one which I have good reason to believe is a fair sample of the relative improvement to speech in a large proportion of all staphyloplastic operations that have been performed later than infancy, or very early childhood. I also present this case as an illustration of what many skillful surgeons are willing to attempt for patients

even older than 40, with no probability of success considered as a beneficent operation, and with nothing in fact but the bare possibility of surgically closing a fissure that has never given them trouble beyond the disadvantage of imperfect speech, which their operation can not remedy. It is a sad commentary upon surgery when its most skillful operators are willing to subject some poor human being to an operation that causes great suffering, with loss of time and money; and worse than all, places him beyond the pale of possibilities that might result from other hands.

Unfortunately, these instances are not confined alone to the medical profession, but have arisen from the ambition or cupidity of skillful dental oral surgeons whose education should give them a perfect knowledge of the advantages of the artificial method. Why would it not be far more commendable for these gentlemen to allow, and even advise, such patients to first try the artificial method, and then if that fails, the surgical operation could be performed as well—a thing which can not be said of the artificial method if the operations are reversed as to time.

To recapitulate the claims of my paper, the first point I have attempted to make and conclusively prove is that the artificial method of treating congenital cleft palate for patients under 15 or 18 years of age can be relied upon when skillfully performed, as furnishing a sure means by which may be attained perfect vocal articulation, free from the undesirable nasal tone which is characteristic of this deformity. And while the same success can not always be promised at a more advanced age, a decided improvement in speech has invariably resulted in all cases where I have been allowed an opportunity to properly develop the artificial palate according to the needs and possibilities of the muscles; and, on their part, there has been a proper persistency in training the voice to speak distinctly. There are many instances where patients have begun wearing artificial palates as late as 30 years of age whose speech in ordinary conversation would not produce a suspicion of their deformity, as instanced by one of the patients whom I shall present at this meeting.

2. With the surgical method of treating cleft palate, when performed later than infancy or very early childhood nothing like the above results have been attained, with perhaps an exception in a few isolated cases. Certainly nothing to warrant the most skillful surgeon in operating, as they commonly do, for patients older than 20, or even 10, where the cleft extends partly through the hard palate, and with the tissues of the soft palate comparatively scant from non-use during the age of its growth and development.

3. When should congenital cleft palate receive surgical treatment? I answer most emphatically, as soon after birth as safety to life will warrant. But after 5 years of age and even earlier, be the cleft great or small, the operation should be performed only in those rare instances which promise an unquestionable assurance of resulting in the desired length and mobility of the united velum palati.

The following is taken from the approved minutes of the January meeting of the Chicago Dental Society at which the above paper was presented:

"The several patients to whom Dr. Case made reference in his paper were presented to the society, and through the medium of short extemporaneous speeches demonstrated the fact that in every instance

their power of speech was fully in accord with his claims.

"One young man gave a remarkable exhibition of his ability to whistle, which was a surprise to all who knew the impossibility of performing this function with a cleft of the palate, unaided by surgical or artificial means."

A. H. PECK, Secretary Chicago Dental Society.

SLEEP THE RESULT OF DIFFERENTIATION.

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SYLLABUS.

There are no atypical cells in the organisms; for this reason and others there must be something guiding all biologic processes—species in action is identical with vitality.

The fundamental functions are assimilation and proliferation; differentiation is the tendency of bringing assimilation and proliferation in contact with the outer world under most favorable conditions.

These influences are either food and air or disengaged (cosmic) energy. Food is preëminently chemic change and is carried on a neutral road through the body; cosmic influences are carried in an electrical form also on neutral roads. Blood and nerves are neutral in consequence of their metaplastic nature as hair and nails are.

All biologic phenomena are subject to the law of conservation of energy but controlled by species.

Trypsinogen and inogen are transformed by a specific irritation into trypsin, or mechanical force, respectively. Similar to this, we have to assume a product in the cerebral cell which, on irritation, becomes an "imprint" consuming oxygen. The nerve cell puts itself asleep.

It is proper and correct that "experimental science ought to vigorously forbid itself all research relative to first causes." But excluding such a research as not pertaining to experimental science we have taken our aim too short in physiology.

Within the last fifty years, since medical sciences have been conceived from the standpoint of induction and taught so in regular schools, it became evident that medical practice did not make equal progress as science did, and that American medical practitioners with less schooling can well compete with their European colleagues.

The cause of this seems to rest in the fact that the young practitioner can not translate easily the language of science into that of practical life. It is difficult for him to get the essentials of a phenomenon by abstraction and to compare them with his doctrine. He learns using terms without a clear conception; he speaks of constitution, temperament, vitality and so on and refers to them in his judgment and action.

It seems to be just and commendable to draw forth these terms from indistinctness, and to lay down the "known" and the "knowable" but not yet known.

My endeavor is to plead in this article on sleep for the term, vitality. I choose an object to be concise and clear, and I select sleep because she, a natural healer, offers the best opportunity of viewing nature's workshop.

I define vitality as the metaphysical principle active in the development of the individual and in procreation. Both changes and disorders, inherited and acquired in life, must be included in a given case. Vitality is identical with species or type. I will try to show that the law of conservation of energy can not be understood in biology if not placed under the control of species. Only such forms of energy are disengaged in the cell, and so much of each as are in accord with its design.

Sleep is a normal condition of the human body; it is periodical rest with a higher or less degree of unconsciousness due to inactivity of the nervous system. Not only the avenues by which we receive

impressions are closed, but also the mechanism through which our various relations with the outer world are maintained and regulated, is cut off.

But not all organs sleep; some find other means to be equal to their duties. This variation is explained by the laws of differentiation.

All biologic functions must be studied in the simplest forms of life—the cells. The cell consists of a cell wall, plasm and a nucleus. But some living matter has been observed without a cell wall and even a nucleus can be missing. Thus in the simplest living being there is nothing but protoplasm, a network holding together a gelatin or fluid, and consisting of carbon, oxygen, hydrogen and nitrogen.

But life is not mere chemic change; it is rather chemic change in the services of the metaphysical principle of species which in juxtaposition develops the individual and in postposition creates the offspring. (Juxtaposition and postposition are inadequate terms, because the individual is not made, but procreated and developed.)

We must accept the metaphysical control for the following reasons:

1. Every cell and every organ in the human body is strictly typical in normal and pathologic condition; if forms are made under control, the forces producing them must first be controlled. Only such forms of energy are disengaged and so much of each as are in accord with the design.

2. There is a correlation between all functions under a central power.

3. Only certain substances are absorbed; matter absorbed either benefits or injures the cell; but to a certain degree of irritation the cell retains its integrity.

4. Intellectual and moral qualities of man can not be brought under the law of conservation of energy without acknowledging a metaphysical principle in close contact with matter and energy. *Cogito ergo sum* is the deduction of the general axiom; *species, ergo vivens*. Species creates the individual in abstracto and makes it the subject towards objects.

5. We perceive objects not as they are but as they affect our senses; but we get a correct perception over imperfect and faulty apparatus.

6. Only an organism can be sick and may recover health by maintaining the typical form, although chemically changed.

7. Transmission of changes and disorders from parents to offspring means only that species may suffer as well in postposition as in juxtaposition.

8. In nerves and muscles of a dead body, there is no disengagement of electricity and of mechanical force; but an unrestrained chemic dissolution takes place.

Both intellectual and animal life are manifestations of the same metaphysical principle. Type or species leads every disengagement of energy in organic action. But before we consider energy in its relation to matter and especially in its modifications in an organism we must call attention to a misunderstanding commonly met with, that forces act directly at a distance and that energy makes a round from masses to masses.

If it is true that where there is one substance there no other can be and that matter and energy can not be separated; then we may not use expressions as "free or communicated energy;" energy being inherent to matter can be active and disengaged only. Light is communicated neither to the eye nor to the