A PLEA FOR THE NECESSITY OF EARLY DETECTION OF MALOCCLUSION.

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(Read before the annual meeting of the North Dakota State Dental Society, held in Fargo, N. D., May 15th, 1917.)

THE specialty of Orthodontia has undergone such tremendous development during the last decade that it has been difficult for the general practitioner to keep himself thoroly in touch with its progress. The result has been a steadily declining active interest in the work itself on the part of the older men and a gradual but perceptible segregation of those men particularly interested in this phase of dentistry. True the younger graduates from such of our state universities as have adequate courses in dental orthopedics are in a measure at least capable of diagnosing and treating many cases which come under their observation. But we believe that, with the exception of some few men who are particularly interested in children's work, the younger generation of graduates is evincing a professional interest in this field sadly out of proportion to that exhibited along other lines. While orthodontia is distinctly a specialty it must not be forgotten that it has its origin in the larger field of general dentistry, and that at the hands of capable men in general practice it was nurtured thru its period of adolescence until it was able to stand as a separate and distinct specialty. From this point on the larger strides have been made by the specialist, but a specialty falls short of its mark when its findings are not apparently aiding the general

practitioner in performing his best services for his patients.

From this it must not be inferred that by careful observation of the findings of certain enthusiastic specialists every general practitioner can and should make himself equally proficient. Not so! What may be inferred is that the general practitioner should be keeping himself acquainted with the progressive scientific advancement of these specialties tho the opportunities for the technical application of methods and means may be lacking or not indicated. It is only by so doing that he will be able to fulfill his highest professional duty when made the final court of appeal in determining the diagnosis and prognosis of cases arising within his practice.

This is not an unfair burden to place upon the shoulders of the general dental practitioner. Because the general practitioner of medicine does not happen to be engaged in surgical work it does not follow that he is exempt from responsibility in a diagnosis of appendicitis! Nor should he minimize the importance of such radical procedure because of his own inaptitude for that particular branch of his calling. In both instances the good of the patient should be the ultimate consideration.

The specialist has a great opportunity for seeing the evil results of both faulty diagnosis and total ignoring of in-

ipient malocclusion. We realize that the correction of a large number of cases even when detected sufficiently early is never undertaken by either general practitioner or specialist. This is more or less of a normal condition under the existing sociological order of things and it can only be remedied when appropriate dispensation of clinical facilities is made possible. There are however, on the other hand, innumerable cases where parents would eagerly seek corrective measures for defects in their children if only enlightened regarding the possibility of curative measures. Many such cases arise and the reputation of many a dentist has suffered therefrom. For the family dentist is generally the one first consulted and much depends upon his attitude.

In a large proportion of cases the seriousness of the condition is minimized and this course is, we believe, due to one of two causes. The first of these is ignorance of the true condition. The second is a fear on the part of the dentist that if he admits himself incompetent to institute proper corrective measures he will be deemed deficient in his professional ability. Both of these states of mind are inexcusable. When we consider the facilities even those of us farthest removed from metropolitan centers are able to enjoy in the way of published treatises on these matters the former reason is easily overthrown. The latter bugaboo, namely fear of being adjudged professionally dilatory, can also be easily banished. For no dentist should experience a sense of inferiority in admitting he cannot properly care for certain conditions. On the contrary, the large majority of our patients have an infinitely greater respect for such an one than for him who professes to be expertly proficient in all branches of his art. Also it is only fair to assume that the specialist in his restricted field may have the benefit of an experience along certain lines denied to the general practitioner.

The point that we are attempting to make is that the dentist should be fair to himself as well as his patients and therein lies the secret of his success. We are not crying for a great influx of patients referred to the specialists from the general practitioner. We *are* asking that these patients be given the proper information when they come seeking it from the dentists, so that the burden of responsibility be placed upon the *patient's* shoulders. And this will relieve the specialist from the embarrassing predicament, so often encountered, of trying to tell the anxious parent that the period for the best results, most easily attained, is past; and of hearing the old, old story—"but our dentist told us to wait!" For when the disillusionment takes place the dentist, as well as the patient, suffers.

I will cite a case illustrative of the above. It is not unusual, and is typical of what often occurs:

Mrs. X., residing in a neighboring state, presented with her daughter, a charming girl of eighteen. (Fig. 1, 2, 3.) Upon examination we found a Class 1 (Angle classification) case with both superior cuspids impacted labially, the lateral on one side being in close contact with the 1st bicuspid. The inferior right 1st bicuspid was also impacted entirely ligual to the arch. The teeth were large and well-formed and this, together with the malocclusion combined to produce a decidedly unesthetic effect. The mother was extremely anxious regarding the case and the daughter was very conscious of her appearance. Without much solicitation the following history was revealed. When the child was 9 years old the family dentist had been consulted. His diagnosis had been that the condition, which even then must have been marked, *might* require treatment but that it should not be undertaken for a considerable time! So far, so good. Some conditions might warrant such a diagnosis. However when the case presented again at 13 years the mother was

informed that it was now "pretty late" to try and do anything and treatment was discouraged! When at 18 years of age

to state in what esteem the dentist who made the initial diagnosis is at present held by his former patients.)

Figure 1.

Case of delayed treatment referred to. Prior to and after treatment of 12 months.

the case came under our observation, the condition was detected and treatment was immediately instituted, not however without considerable study as to the

Figure 2.

Lingual aspects of superior arches of Figure 1. Note distance right lateral has traversed and inclination of incisor teeth.

proper method to employ. (Incidentally we are happy to be able to say that treatment without extraction proved to be the wiser course. Also we hesitate

Figure 3.

Lingual aspects of inferior arches of Figure 1.

In contrast with the foregoing illustration let us cite another. Mrs. Y.,

Figure 4.

Case of correct diagnosis referred to. Note apparent symmetry of superior arch.

resident of a small country town, presented with her son of 10 years. (Figs. 4, 5.) She said she was worried about

Figure 5.

Lingual aspect of superior arches of Figure 4. Note apparent correct development of first model as compared with the development necessary for harmonious relation with the inferior arch. Opportunity for error in diagnosis is great in this type of cases.

L's teeth and sincerely hoped something could be done; that her dentist had told her a bad malocclusion was beginning to manifest itself which should be taken care of at once, altho he personally was unable to treat it. To emphasize the keenness of this dentist's diagnosis, let us say that superficial examination of the mouth revealed an apparently beautiful alignment of superior and inferior arches and extraordinarily beautifully shaped and colored teeth. On closer examination however, we found the inferior right deciduous cuspid missing and the lateral nearly in contact with the deciduous right first molar. Both arches possessed an apparently beautiful symmetry. Treatment was at once instituted with the result that this lad will have a mouth containing the maximum degree of masticating efficiency and beauty instead of a crippled dental apparatus involving also impaired facial harmony. Furthermore the dentist who made the initial diagnosis of this case is retaining a place of high regard in the estimation of these particular patients and their friends.

All of the foregoing has been dwelt upon with reference to the man who is not attempting to care for orthodontic work in his practice and whose interest in it for that very reason is somewhat dulled. Let us now consider for a while the man who may be more actively interested in it altho devoting but a small proportion of his time to such work. Such men we shall divide into two groups:

1. Those who do positively no more orthodontia than forced to by insistent patients.

2. Those who treat the easier cases among their juvenile patients.

For the men in the first group and for their patients we express a great sympathy. We once heard one of this class make the following remarks: Said he, "Yes, I do a little orthodontia when I have to. If the patient wants it badly

enough I put appliances on the teeth and move them around a bit. Then after I've pulled and pushed for a time I let the teeth go back to where they were in the beginning and nine times out of ten the patient is tickled to death with the result!" Let us hope that this attitude is not held by many of us. But the man who allows an occasional patient to influence him into undertaking orthodontic work is not quite fair to himself. The relation of the patient seeking orthodontic treatment to the dentist is not identical to the relation existing between the patient and the specialist. For by the very term "orthodontist" a specialty is indicated to the patient and where one terms himself a specialist the public has the right to demand more than the usual skill. But, it might be difficult to prevent the patient of the dentist who has been induced to undertake a case of orthodontia, from judging the general practitioner by the standards of the specialist. And unless the general practitioner is intelligently equipped he may suffer from the comparison and the cause of orthodontia receive a set-back.

This is another argument for preparedness on the part of the general practitioner. For the solution of such conditions lies firstly in correct diagnosis, and secondly in recognizance of true values of operative methods at the hands of the individual operator.

A consideration of diagnosis immediately involves etiology. This brings us face to face with causative factors and the necessity for their elimination as the primary step in curative procedure. Going back farther we are confronted with the realization that the early detection and elimination of causative factors at the incipency of their occurrence would correspondingly eliminate the sequelae. This then would appear to be the logical time to most easily and successfully combat malocclusion. Postponement in such instances merely means allowing a deformity to assume its greatest develop-

ment before combating it and such a course scarcely seems rational. Preventive orthodontia then, seems to offer the largest field of endeavor, and the part played by the general practitioner therein is all-important. We have long been of the opinion that the prevention of malocclusion lies chiefly within the provinces of the pediatricist and the general dental practitioner. Theirs is the opportunity for the earliest detection of predisposing and exciting causes of malocclusion.

It would be well to dwell shortly on some of the predisposing causes influencing malocclusion. It has long been recognized that systemic disorders in infancy are responsible for a great number of developmental manifestations in the tissues. It is but logical to assume that any nutritional derangement affecting normal development in various parts of body would likewise have an arresting influence upon the bony structures of the maxillae. In children who have suffered from rachitis of rickets in early infancy we note a distinct arrestation of development of the dental arches. (Fig. 6.) The clinical sequelae of this disease in the maxillae are easily detected especially between the ages of $4\frac{1}{2}$ and 6 years. During this period interproximal spacing in the deciduous denture is lacking. If the necessary expansion of these narrowed arches is not produced at an early age it is a foregone conclusion that the second dentition will be crowded.

The correct time for such procedure is before the ages of 6 or 7 years. At this time the unabsorbed roots of the deciduous molars and cuspids offer a splendid medium thru which to transmit expansive force. Such treatment is not difficult and a variety of attachments and appliances are at the disposal of the operator. In this connection we may say that the use of the perpendicular tubes in round, half-round and square forms in conjunction with small gauge expansion

wires produces excellent results. These appliances as well as the lingual wires advocated by Lourie and others completely obviate the necessity for ligatures upon the individual teeth, which is a great consideration in working upon the deciduous denture.

The infectious diseases of childhood are also responsible for an impaired development of the maxillae. Among these may be mentioned measles, scarlatina and pertussis. Protracted attacks of any one of these react only detrimentally upon the developmental progress of dentition.

Figure 6.

Normal and sub-normal development of the deciduous arches in three cases at the ages of $4\frac{1}{2}$ years, $5\frac{1}{2}$ years and 5 years and two months respectively. The second case gives a positive history of rickets.

ion. In addition to the stigmata upon the individual teeth, the dental arches themselves are sub-normal, in development, the inter-proximal spacing is insufficient or entirely lacking and the palatal vault may be constricted.

From the foregoing it can readily be seen that access to pediatric records is an invaluable aid in a study of the etiology of orthodontic cases. Apropos of this we quote Dewey in a recent editorial:

"We are aware that there are many cases of malocclusion which can be prevented from developing if they are recognized by some one interested in the child in their incipient stage, especially that type of irregularity resulting from vicious habits of the tongue and lips; then too those caused by hypertrophied

lymphoid tissue and mouth breathing or the too early extraction of deciduous teeth. In fact there are many malocclusions presented which have been developed over a period of years which could have been prevented or at least remedied materially by the correction of habits at an earlier period and by advice as a result of intelligent diagnosis."

Speaking of the educational work to be done he goes on to say: "* * * * * There are three avenues open for propaganda work—the dentist, the pediatrician and the orthodontist. Of these three the dentist is the one thru whom the greatest good can be accomplished. * * The dentist in many instances is in a favorable position to be on the alert for the effects of adenoids at the period when the child emerges from its infancy. He is in a position to point out the results, not only from an orthodontic standpoint but from every physical viewpoint, what may be expected if this condition is allowed to continue without attention."

Regarding the orthodontist we read further that "* * * * * he should strive to prevent malocclusions in the very young by giving parents who come under his influence proper instruction with reference to those factors that are sure to produce deformities in growing children.

He should endeavor by all means in his power to arouse among his confreres in the dental profession greater interest in preventive orthodontia, that they may advise parents against influences and habits in the very young that will surely bring about malocclusion." Here we have expressed in no uncertain terms the opinion of a man of considerable experience.

The deplorable habit of thumb sucking offers one avenue of attack against malocclusion which is open to all. It is well within the province of the dentist to prescribe measures antagonistic to this habit and to this end he should be constantly searching out and warning

against it. Remedial measures can be employed which are highly effective and knowledge of their use should be common property. It would be well to burnish our memories on this point and to outline a few of the simpler devices used in combating this habit. (Figs. 7-12 inclusive.)

As a first step adhesive tape may be used. A short piece of this is passed over the end of the thumb from the nail to the ball. Then a second length is passed around the thumb just below the nail thus securing the ends of the first piece. This "thumb cap" usually does not lie evenly to the skin surface and therein lies part of its merit. While this method is sufficient in many instances, more stubborn cases require more radical measures.

As a second agent small thumbless mittens made from muslin, and having sleeves, of elbow length which may be tied to the dress or night-gown are very effective. Apropos of this during a recent address to a mothers' club, in which the matter of thumb-sucking was brought up, the writer was informed by a fond parent that a baby's stocking pinned over the hand had successfully broken her children of this habit! A splendid idea provided, of course, the stockings were clean!

As a more severe measure aluminum balls with cloth sleeves attached are effective. We have never advocated the use of distasteful solutions upon the fingers nor the use of a splint upon the arm altho both may be useful. Whatever method may be employed it must be remembered that extreme persistence and even fortitude on the part of the parent are often necessary. It is easy to yield to an irritable baby. However, while not dwelling upon the influence of the forces of heredity or of a natural physiologic craving upon the formation of this habit, or removing it from the habit class to that of a normal reflex action, we believe that

its pernicious effects warrant its strictest control. This then is one field where individual effort on the part of every one of us can count for much.

ciency. Even tho there be some hesitancy about making an examination for adenoids the condition and relation of the dental arches should at least be an

Figure 7.

Manifestations of thumb-sucking in mouth of a three year old boy.

So much stress has been placed lately upon the relationship between hypertrophied adenoid tissue and malocclusion that we shall not dwell upon it here. The mouth is generally a direct index to the

Figure 9.

Permanent deformity in girl of 15 as a result of unchecked thumb-sucking.

indication as to the necessity for closer examination of the nasal and post-nasal areas. The exercise of such observation

Figure 8.

Results of thumb-sucking in mouth of eleven year old girl. In this case the habit was persisted in until 8 years of age, at which time it was discontinued.

condition of the naso-pharynx and usually offers the first indication of nasal or post-nasal congestion. It would again appear logical that careful observation on the part of the dentist would result in detection of such conditions at their in-

Figure 10.

Sectional model of Figure 9 toward completion of treatment.

among his patients should be not only wholly proper for the dentist but also as much a part of his professional duty as the detection of caries. This is not merely an idle fancy for we believe the day is coming when the responsibility

for adenectomy, thru the close inter-relationship of the parts affected, will belong as much to the dental practitioner as to

orthodontic interference and the time may be not far distant when the dental practitioner's opinion will be eagerly

Figure 11.

Facial effects of habit in case described by Figure 9. Note the exaggerated naso-labial sulcus and flattened appearance of area inferior to the corner of the mouth.

Figure 12.

Same as Figure 11 after twelve months. Note eradication of naso-labial sulcus and harmony of lower face.

the medical specialist. Right today reports of cases are available where adenectomies and deviated septum operations have been averted thru proper early

sought as corroborative of positive diagnosis of these cases. It behooves us all to keep up with the trend of the times.

Perhaps more malocclusions are devel-

oped from improper care of the deciduous denture than from any one cause. (Figs. 13 to 16 inclusive.) As a corollary to

Figure 13.

Case of three impactions in one mouth. The upper right cuspid and both lower 2nd bicuspids are not erupted. Such cases may be aggravated if not caused by neglect of the deciduous teeth.

any one method. These statements do not require any great amplification to establish their verity. The accent, however, must be placed upon a more serious consideration of what such statements mean to each one of us. It is a very simple matter for us to read case history after case history apropos of this particular etiologic factor, and tacitly admit its soundness; and then in our daily practice tell Mrs. Blank that altho there are a few more cavities in Mary's teeth it will be just as well to let them go, for the teeth are only temporary and will probably be lost within a year or two anyway!

And we submit to you that the public is hearkening more to the cry of prevention along all lines than ever before. As evidence of this we have only to observe

Figure 14.

a.

b.

c.

Progressive X-Rays of treatment of impacted cuspid.

- a. Mesio-distal relation of tooth.
- b. Palatal relation of tooth.
- c. Space provided for its place in arch.

the foregoing we may say that more malocclusions may be prevented by the proper care of the temporary teeth than by

the demand for enlightenment regarding children's teeth which is emanating from Infant Welfare Organizations, Woman's

Clubs, charitable institutions, etc., etc. We believe that this interest on the part of the laity, aided and stimulated by a

faces. Our place is in the front ranks of such a movement and in no way can we better serve the cause than by the daily

Figure 14.

Progressive X-Rays of treatment of impacted cuspid.

a. Showing small platinum hook cemented in tooth after cutting away palatal tissue and laying bare small area of the enamel.

b. Tooth in place in arch.

Time for operation—8 months.

Figure 15.

Lingual view of lower arch of case in Figure 13. Erupting 2nd. Bicusps are being guided by lingual arch wire.

Figure 16.

Study models of Case in Figure 13 after upper right cuspid had been brought into place.

fitting professional cooperation, will only result in a great diminution in the number of crippled and deformed mouths and

application of those principles of prevention which we know to be the correct ones.