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## ESOPHAGEAL STENOSIS FOLLOWING THE SWALLOWING OF CAUSTIC ALKALIES

NECESSITY FOR COMPULSORY LABELING OF POISONS SOLD  
BY GROCERS \*

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Four little children threatened with starvation because of a cicatricial esophageal stenosis due to the swallowing of some form of caustic alkali to which the laxity of our laws permitted them to be exposed were under my observation within a year. These four cases are my excuse for addressing you on this subject. The law requires that the druggist shall label corrosive poisons "Poison" and the careful druggist adds antidotal advice. Next door to the druggist the grocer sells corrosive poisons having on the label not only no hint of caution, but having directly misleading statements, such as "won't injure the hands," "will not harm the most delicate fabric," etc. One brand of concentrated lye is marked "Caution." When I encountered this I thought, "At last I have found one preparation on the market whose manufacturer has a conscience that compels him to give some advice protective to little children." Alas, the underwriting, "Be sure to replace the lid after using," was intended only to prevent deliquescence of the granulated contents.

It is the general impression that concentrated lye is a relic of the old days of home-made soaps, but investigation shows that it is in common use in the household for labor-saving cleansing of all kinds. Its harmful effect on the hands conveys to the thoughtful some hint of the caustic nature of its contents. But the frequency with which patients with esophageal stricture, following the swallowing of concentrated lye, come in an almost fatal state of inanition to the esophagoscopist is an index to the thoughtlessness of the users of concentrated lye, and an urgent call for legislation that shall compel the manufacturer to label concentrated lye containers "Poison" and to state a few antidotes, even if this does diminish slightly the sale of such products.

Esophageal stricture from the swallowing of commercial lye has been for many years a lesion of common observation by those interested in the esophagus. The frequency declined with the more general substitution of cheap commercial soaps for the home-made product; but concentrated lye is still in extensive use for general scrubbing and cleansing purposes. Furthermore, strictures of the esophagus are again on the increase owing to the flooding of the market with a large number of proprietary "cleansers" for household use and "washing powders" for laundry use.

I have seen three cases of the most severe ulceration and sloughing of the esophagus from the swallowing of strong solutions of three of these proprietary preparations. I have had the preparations analyzed and all contained similar ingredients: an abrasive, a strong powdered soap, and a caustic alkali—soda ash. The proportions varied from 8 per cent. in the cleaners up to 40 and 50 per cent. in the laundry powders; but in none was the corrosive alkali so diluted as not to be caustic to the delicate esophageal mucosa of a child. And worst of all, the mixture was not thorough; therefore some portions were more concentrated than others, so that under certain conditions it would be possible for a child to get a concentrated dose of caustic. Another thing which doubtless contributes to the danger is the insoluble nature of the abrasive and the slower solubility of the soap. Thus a little water dissolves out the alkali in strong solution.

The accident in one case I have seen occurred through the child's swallowing the rinsings of the almost empty can. The economical mother was endeavoring to extract the dregs for use; and, totally unsuspecting of a preparation which could not "injure the most delicate fabric," set down the can within reach of the child. In another instance the cleansing powder had been sprinkled on the dishes in the dish-pan. From one cup it was not removed by rinsing, the powdered soap in its composition making it adherent, and from this cup the child drank. In the third instance the child drew water from a faucet into a cup that had been used to measure out a quantity of a proprietary washing powder for laundry use.

On not one of the containers of these three widely advertised proprietary caustic preparations was there one hint of the dangerous nature of the contents. There was no word of advice that some vinegar or oil or milk or cream might lessen the likelihood of the child dying of the agonizing burns, or the subsequent ulcerative esophagitis or stricture. On the contrary, the most misleading statements as to the harmlessness of the preparations are on every package, in every magazine, in every street car. One manufacturer's agent to whom I spoke said: "Why, if we labeled our goods 'poison' and gave an antidote nobody would buy them." Comment is unnecessary.

My reason for bringing this matter before this section is the hope that some of you will take the matter up and see that the laws that compel the druggist to label corrosives that go into the medicine closet "poison" shall likewise compel the manufacturer so to label the corrosives that are infinitely more dangerous because they go into the kitchen. Considering the cosmopolitan character of our population, and especially of our domestic servants, the caution label should be in many languages.

\* Chairman's address before the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, St. Louis, June 7-10, 1910.

If the existing laws do not apply to the grocer as well as to the druggist, then, you doubtless all agree with me in the opinion that the laws should be amended. I leave this to those better able than I.

In conclusion, I beg you to look into your own kitchens and find whether or not caustic alkalies are used with a reckless disregard of their poisonous nature.

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## CHANGES IN THE NOSE AFTER WIDENING THE PALATAL ARCH \*

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For some time we have known that widening the palatal arch resulted in widening of the nasal chambers. At least, we have had every reason to conclude this from the reports of many patients regarding the great improvement in breathing after this had been done. I am sure that all are familiar with the work of G. V. I. Brown and Nelson Black on the improvement in breathing of patients with contracted nares after widening the arch; also the influence it has had on the straightening of deviated septa.

In 1908 I showed before this Section by actual measurement the increase in the breathing-space of the nose in green skulls after widening the palatal arch. So far as I have been able to determine, these measurements have not been reported as having been made on a living subject. As there is still some skepticism regarding the increase of breathing space by widening the palatal arch I wish to report the measurements of a case.

As long as we depend on patients' expressions regarding their improvement there may be a slight basis for doubt. With the actual measurements before us there can be none. This method of measuring has been the result of several years' work. It has been tried repeatedly with constant results, on patients on whom no work has been done. To measure the nose I use a septimeter (see illustration) devised by myself for this purpose.

I will give the history and measurement of one case only, as that will serve as an illustration. I made no measurements myself; all were made at my request by Dr. W. F. Boiler, assistant rhinologic surgeon to the University Hospital, because I wished them to be made by one not interested in the results.

All measurements were made under the same conditions: namely, with the mucous membrane shrunken by continuous application of cocain 20 per cent. and adrenalin 1 to 1,000 for twenty minutes.

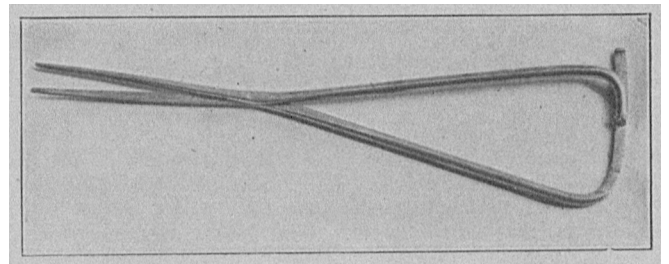
*Patient.*—Miss L. D. Y., aged 8, referred by Dr. Jones, of Kalona, Iowa. The patient gave a history of being a constant mouth-breather. She could not remember ever having been able to breathe through her nose. She suffered very much from temporal headache. This was not influenced by use of the eyes. The attacks of headache were not periodic. The headache was made worse by taking cold. She took cold very easily.

*Examination.*—Patient was very dull mentally. The face was narrow, owing to poor development of the superior maxilla. The nose was very thin. The turbinates were normal in size but pressed tightly against the septum. On the right side was a medium-sized posterior spur.

*Treatment.*—It was a typical case of the nasal breathing being impossible because of the nose being too narrow, not because of pathologic tissue. The spur was removed. Two

months later nasal breathing was little better than at first. The palatal arch was exceedingly high and narrow. As the turbinate tissue was normal there could be no excuse for removing it, entire or in part, so I asked Dr. G. V. I. Brown to widen the arch. Expansion bands were fitted to the teeth on each side and attached with rigid metal bars. Across the mouth a tube attached firmly to the connecting bar upon one side, fitted over a threaded bar, also solidly attached to the bar on the opposite side. A nut was adjusted, which when turned made pressure across the mouth. The appliance was cemented into place and when finally adjusted, was so arranged that pressure was applied directly across the palate at its narrowest portion with resistance against all the teeth from the cuspids to the molars upon each side. When the maxillary bones had been sufficiently separated and the nose correspondingly widened, an appliance was adjusted with a screw, nut and tube by which pressure was exerted from before backward. When the arch had been sufficiently lengthened on this side to admit it, the teeth which had previously occupied a portion of the palate, were drawn outward into proper line.

In the accompanying table are three sets of measurements: Column A shows the measurements before widening was begun; Column B, the measurements made during the widening process; the measurements in Column C were made after the widening was completed. The measurements are expressed in units as measured in the handle of the septimeter.



Septimeter for measuring the nose.

### MEASUREMENTS BEFORE, DURING AND AFTER THE WIDENING PROCESS MAY 28, '09.

	A.		B.		C.	
	R.	L.	R.	L.	R.	L.
Anterior end inferior turbinate to septum.....	5	6	8	9	9	10
Middle inferior turbinate to septum.....	5	4	7	6	7	6
Posterior end inferior turbinate to septum.....	10	12	10	12	12	12
Anterior end middle turbinate to septum.....	2	2	2	3	4	4
Middle middle turbinate to septum.....	1	2	2	2	2	4

*Result.*—The subjective improvement of the patient was the very best. She spoke of breathing comfortably for the first time during her life. The objective improvement was very manifest. She is now a nasal breather both by day and night. Her general health is better. She is certainly wonderfully improved mentally. Her face is broader.

The figures show that the widening effects the nose throughout antero-posteriorly. Also the middle meatus is affected as well as the inferior. Consequently the sense of smell should be benefited. I regret very much that observations along this line have not been made.

These measurements corroborate the measurements that were made on a green skull and reported to this Section two years ago.

### ABSTRACT OF DISCUSSION

DR. EUGENE S. TALBOT, Chicago: These measurements show the actual conditions present when the dental arch is spread. One important point which should be emphasized is that the turbinates are not destroyed. While I am not a rhinologist, it seems to me that that is the last thing which should be done. The dental arch should be spread first, and

\* Read in the Section on Stomatology of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.