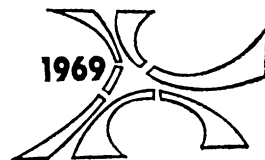


Preoperative Care of Cleft Palate Children in Denmark



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Denmark is a small country with approximately 4.8 million inhabitants, half of the population of the state of Texas. The geographical distances are short and the traffic communications easy. Copenhagen is the capital and largest city, Aarhus the next largest.

In Denmark, the majority of medical care is under the category of State Medicine. Concerning cleft lip and palate, the treatment has for about 35 years been included in the so-called "Special-Care Services" for handicapped persons under the Ministry of Social Affairs. This means that surgery, orthodontics, and speech therapy are available to all of the cleft lip and palate patients free of charge.

The official institution taking care of the patients is the National Institute for Defects of Speech. Originally, there was one central institute in Copenhagen, later there was a branch institute in Aarhus as well, and now there are two independent institutes, one in Copenhagen, and one in Aarhus.

In practice, the arrangement works in the following way. Every child born in Denmark with a cleft lip or palate has to be reported immediately by the doctor or midwife to one of the two Institutes of Speech. In this connection, it should be mentioned that a considerable number of Danish births still take place in private homes. Following the primary registration, the children will be summoned "automatically" for treatment at the proper time, which in our opinion and experience means the following: lip repair at the age of two months; in combined lip-palate clefts, closure of the hard palate also at two months; and posterior palate repair at two years. The surgical treatment is 100% centralized in Copenhagen at the Deaconess Hospital; the dental treatment (orthodontic and prosthetic) and speech therapy take place either

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in the Copenhagen Institute of Speech, for patients residing in the eastern part of Denmark, or in Aarhus for patients from the western part of the country.

In Denmark, the incidence of cleft lip and palate at birth recently has reached the figure of nearly 2 per 1000 (7). From an annual live-birth rate of approximately 75,000, there are almost 150 new infants with clefts a year. At least 10% will die early before any treatment, due to severe associated malformations or complications, but about 130 new cases will come to surgery each year in Denmark. The centralized treatment includes the Faroe Islands in the North Atlantic and Greenland, but not Iceland (which has been an independent republic since 1944).

This consistent centralization has made it possible to treat a considerable number of patients during the last decades following rather uniform principles (10). It has also given us an excellent opportunity for collecting statistical data. For example, we have data concerning frequency and heredity, begun some 30 years ago (5, 6), recently followed up (9), and now continued in collaboration with Bixler, who has been spending a sabbatical year at the University Institute of Medical Genetics in Copenhagen. Interesting research in a series of other fields, such as craniofacial development and the nature of malocclusion, has also been possible on a large scale. One example is the project begun by Dahl, the orthodontist in our cleft palate team in Copenhagen.

One point of special importance has attracted our attention during the last 10 years: the preoperative care of the cleft palate children, primarily the care of the child and its mother immediately after birth. We have not so far found it necessary to use any kind of early orthodontics; that is, before the time of lip closure, not even in the severe combined clefts. For psychological reasons, however, we would find it extremely important to establish a contact between the parents of the cleft palate child and the Special-Care Service as early as possible.

The instigation of a program in this direction was made by the Speech Institute in Aarhus, where the dentist, Bloch, in cooperation with an otologist, Bentzen, suggested primary obturator prostheses in all cleft palate cases as a routine preoperative measure begun shortly after birth (1). The main purpose of the obturator treatment should, in their opinion, be prevention of colds and otitis, facilitation of feeding, furthering of speech development, and (not of least importance in our opinion) a possibility of early contact with the parents.

In Copenhagen, we were a little skeptical about the importance of the obturator prostheses as such, particularly for the prevention of otitis. For facilitation of feeding, we thought other measures more easy and inexpensive; for instance, a special, long, rubber nipple, a so-called lamb's nipple (Figure 1). Another simple solution of the feeding problem, which we are recommending in Copenhagen, is shown in Figure 2. It is a special plastic feeding bottle with a detachable plastic spoon blade (Fig-

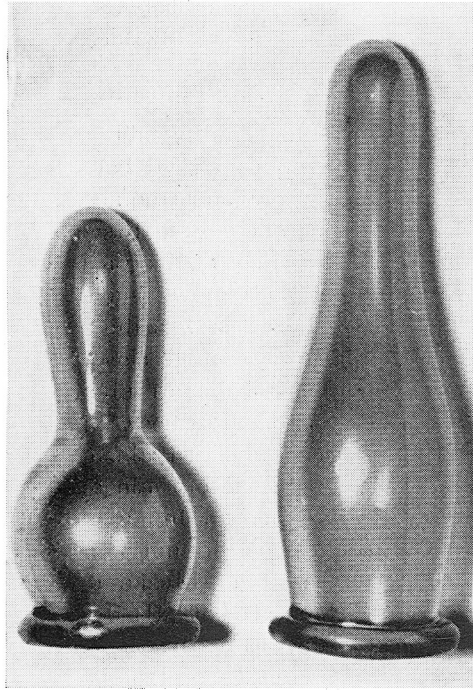


FIGURE 1. Left, ordinary rubber nipple; right, long "lamb's nipple".

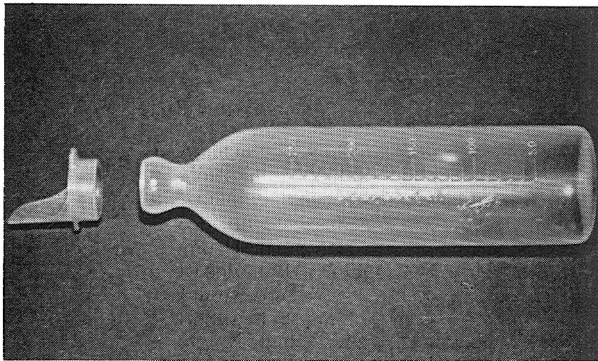


FIGURE 2. Plastic feeding bottle with detachable plastic spoon blade.

ure 3). Figure 4 shows the bottle in action. It has proved very useful, in private homes, as well as in hospitals. It was invented by the mother of a Danish cleft child, is manufactured in a plastics factory outside Copenhagen¹, and is already well-known in a number of countries.

While we admitted the value of the early contact in connection with the obturator prosthesis, we found that this could be achieved as successfully in the form of home visits from the Speech Institute shortly

¹ Rosti Plastikfabrik, 4000 Roskilde, Denmark.

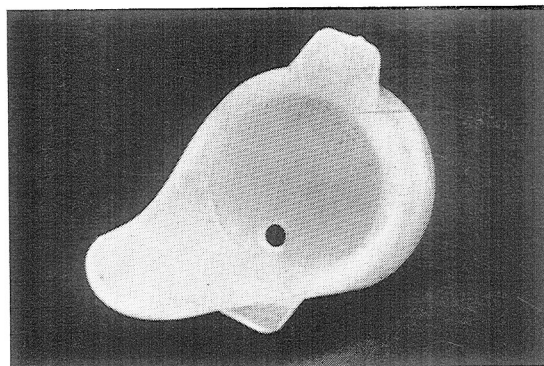


FIGURE 3. Spoon blade of plastic to fit plastic feeding bottle.

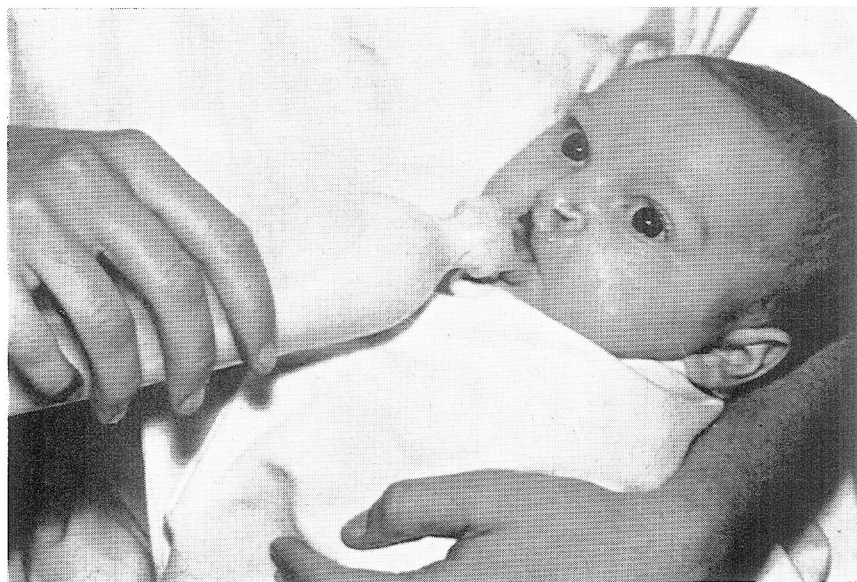


FIGURE 4. Plastic spoon feeding bottle in action.

after birth with instruction about feeding problems, explanation of the forthcoming treatment, et cetera.

As an experiment for comparison, we agreed with our Aarhus colleagues to run two series—one obturator series on western children in Aarhus, and one home visit series on eastern children in Copenhagen (2, 4). In both groups, the parents, not surprisingly, appeared to be very satisfied (3, 8), but such subjective impressions are of course of limited value.

Objective data are more important and difficult, though not impossible, to collect. First of all, we examined the original objective of the pri-

mary obturator treatment as prevention of otitis. In order to eliminate geographical differences between east and west patients, we collected exact information about three series of children: a) west, with prosthesis; b) west, without prosthesis; and c) east, without prosthesis. A history of otitis and the results of otological examination including otoscopy were noted at the time of routine control examination at two years of age; that is, immediately before closure of the posterior palate (11). The results in the three groups were as follows: evident history of otitis: 19-18-17% (no difference); and grave otoscopical changes: 9-8-10% (no difference).

These figures confirm the findings of numerous authors, including those of Paulsen (12), the otologist in our Copenhagen cleft palate team, that pathological changes occur in the middle ear in a considerable number of cleft palate patients and, according to Paulsen, that they depend more on the type of cleft than on the kind of previous treatment.

One point of practical importance concerning primary obturator treatment should be noted: possible irritation and edema of the oral mucous membrane, in our experience, tend to complicate the operative procedure on the hard palate to some extent. Irritation and edema are found in about one-third of the obturator cases and may sometimes result in the postponement of the operation (10).

Feeding difficulties may sometimes occur, whether obturator prosthesis, lamb's nipple, or spoon bottle is used, mostly due to associated malformations. In such cases, the babies are taken to a pediatric department for special care (tube-feeding, et cetera) until they are ready for surgery, and then transferred to the Deaconess Hospital. The preoperative control in the hospital is very important. We have an experienced pediatric consultant (Andersen) who in many cases has revealed accompanying diseases, congenital or acquired, which might have caused complications postoperatively if not first diagnosed and controlled.

Summary

Following primary registration of all cases, the preoperative care of cleft palate children in Denmark during the last years has consisted of either primary obturator treatment in Aarhus or home visits from the National Institute of Speech in Copenhagen. Our conclusion about two experimental series has been that early personal contact between the cleft palate family and the Danish "Special-Care Services" in the interval from birth to first operation at the Deaconess Hospital in Copenhagen is of conspicuous importance, at least for psychological reasons. In our opinion, this contact can be brought about most simply and inexpensively by home visits, as has been practiced in the eastern half of Denmark during the last six years from the Copenhagen Speech Institute. The home visitor could be a physician, a speech therapist, or (as was

recently introduced in the eastern part of Denmark) a specially trained health nurse able to give instructions concerning feeding problems, et cetera. A similar arrangement could be adopted in other countries or areas with similar geographic conditions.

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