Analysis Of 31 Cases Of Delayed Closure Of The Cleft Palate

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KEY WORDS

Cleft Palate, Delayed closure, Speech, Facial growth.

ABSTRACT

This study includes an analysis of 31 cases treated by delayed closure of hard palate. Emphasis of this study is on speech and maxillary growth. Advantage of delayed closure of the hard palate like better maxillary growth does not seem, compensated for the speech problems associated with the procedure.

INTRODUCTION :

The optimum time for surgery of the cleft of the hard palate has been a much debated subject. Goal of surgery in the patients with cleft palate is to achieve normal speech and hearing, while subjecting maxilla to minimal trauma so as to avoid disturbances of its growth (Krogman). Optimal timings to achieve these two goals unfortunately are counter productive to each other. While operations on the soft palate are valuable when they are done in the phase of speech differentiation, hard palate closure at that age almost is certain to damage growth potential of the maxilla (Slaughter).

IN 1944, Herman Schweckendiek proposed early closure of soft palate only, which did not necessitate mucoperiosteal dissection or osteotomy. Closure of the hard palate was postponed to as late as 12-15 years. The method is truly indicated in severe cleft of the secondary palate. It establishes the reconstructed ring of circumpalatal forces posteriorly, which bring the palatal shelves together, to make hard palate repair easier (Logacre).

The procedure is not without disadvantages. The prime being a poor speech. Hotz suggested a modification of the Schweckendiek method by closing the hard palate at 5 years since 85 % of maxillary growth is completed by this time.

MATERIAL AND METHOD

Study includes a total of 31 cases of complete unilateral cleft of primary and secondary palate, bilateral complete cleft of primary and secondary palate and complete cleft of secondary palate. Method of palate closure adapted at our institute is similar to that proposed by Hotz.

On the first visit, a feeding plate was given which was changed as required but no active oral orthopaedic treatment was given. The patients were operated for the repair of cleft lip at the age of 3-24 months (mean 9 months). Soft palate was repaired by 12-18 months by the technique of intravelar veloplasty. Hard palate was repaired at age of 5-7 years (mean 5 years) with bipedicle or unipedicled mucoperiosteal flaps. Palatal plate for anterior palate was given between the two surgeries.

Speech analysis was done by an unbiased speech therapist (unknown to the mode of treatment), after adequate length of speech therapy. Johnson's classification was followed for analysis of subjective speech.

Maxillary growth was studied on dental models by measuring distance between upper arch canine (IC), upper first deciduous molar (IDM) and second deciduous molar (IDM). These measurements were compared to that of normal 128 school children of the same age group. (5.5 - 6.5 years).

OBSERVATIONS

Results were tabulated as follows :

Table 1 :COMPLICATION OF SURGERIES.

	SOFT PALATE BREAK DOWN ONCE	SOFT PALATE BREAK DOWN TWICE	UVULAR BREAK DOWN	ANTERIOR FISTULA LARGE	ANTERIOR FISTULA SMALL	ANTERIOR FUNCTIONAL FISTULA
No.	5	1	-	6	10	6
%	16	3.2	-	10	32.2	19.3

SPEECH ANALYSIS

Table - 2 : VELOPHARYNGEAL INCOMPETENCE

VPI	NO. OF CASES	PERCENTAGE
PRESENT	18	58.0
ABSENT	13	41.9

Table-3 : ARTICULATORY ERRORS

ARTICULATORY ERRORS	NO. OF CASES	PERCENTAGE
PRESENT	17	54.8
MINIMAL	12	38.7
ABSENT	2	6.4

Table - 4 : CLASSIFICATION OF SPEECH

CLASSIFICATION OF SPEECH	NO. OF CASES	PERCENTAGE
0	0	0
1	6	19.30
2	12	38.70
3	13	41.90

Table - 5 : ANALYSIS OF DENTAL MODELS

DISTANCE (mm)	STATISTICAL VALUES	NORMAL (No. 128) (mm)	STUDY GROUP (No. 21) (mm)
INTERCANINE (IC)	MEAN STD.	25.32	25.05
	STD. DEVIATION	1.39	2.87
	PROBABILITY	0.4	NOT SIGNIFICANT
INTER DECIDUOUS MOLAR (FIRST) IDM$_1$	MEAN STD.	35.14	33.25
	STD. DEVIATION	1.55	3.11
	PROBABILITY	0.00002	SIGNIFICANT
INTER MOLAR (SECOND) IDM$_2$	MEAN STD. DECIDUOUS	41.48	39.80
	STD. DEVIATION	1.55	3.11
	PROBABILITY	0.0001	SIGNIFICANT

DISCUSSION

Collapse and retrusion of maxilla in large number of patients following closure of Palate at the age of 2 yrs. or thereabouts has always prompted surgeons to look for alternative methods to improve long terms results. Early closure of soft palate and delayed closure of Hard palate has been tried and long term results studied. It is the observation that delayed closure of hard palate helps in better development of maxilla and dentition is near normal. However, this procedure does not help in developing normal speech. On the other hand complete closure at early age helps speech and not the bite.

CONCLUSION

The advantages of delayed closure of the palate have met with partial success (Ross, Witzel, Robertson). Perhaps, a method needs to be discovered, where the muscular mechanism of speech is reconstructed at an appropriate time yet the hard palate is closed with minimal trauma to post-tuberosity area and by complete elimination of all raw areas by importing tissue in the areas of embryological shortage.

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