

Birth Order and Cheilo-Gnathopalato-Schisis

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The Clinic of Plastic and Restorative Maxillofacial Surgery of Thallwitz, Germany, founded in 1943 by Dr. W. Rosenthal, is the center for the habilitation of patients with cheilo-gnathopalato-schisis. About 7,000 patients have been seen and 9,000 operations have been performed in the Thallwitz Clinic since it was organized.

Bethmann and Rohne (3), as previously reported, have investigated the question of whether or not the ordinal number of birth has any influence on the frequency of formation of cheilo-gnathopalato-schisis. Similar studies have been made by Birkenfeld (4), 149 cases; Günther (11), 101 cases; Tiedemann (30), 676 cases; Ibel (16), 112 cases; Kempken (17), 100 cases; Ruckteschler (25), 236 cases; Hegnauer (13), 122 cases; Held (14), 1,457 cases; Stein (28), 935 cases; Weinmann (34), 172 cases; Fink (7), 413 cases; and Widok and Widok (36), 245 cases.

Most of the cases reported by these authors relate to other types of deformities rather than a cleft of the lip and palate. The reports have been somewhat contradictory. Some authors found a relationship between the ordinal number of birth and the frequency of deformities, and others have not found this to be true.

It has been stated by some authors that the first birth is especially liable to develop an anomaly, because the hormonal conditions are not yet optimal. These hormonal conditions are said to have improved by the second birth and subsequent children are less liable to present a birth defect. On the other hand, some authors feel that the rise of an anomalous offspring is greater after the fourth birth. This opinion is based on the assumption that the uterine mucous membrane will be exhausted after three births, increasing the likelihood of subsequent congenital deformities.

To answer some of these questions, we reviewed the records of 5,702 cases treated at the Thallwitz Clinic. It was possible to obtain adequate data from the records of 4,362 patients. This included patients seen from the year 1945 until the present time. The results of our survey are presented in Tables 1 and 2.

We also compared the ordinal number of cleft patients against the ordinal numbers of all live births in the total population between the years

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TABLE 1. Number of patients with birth orders of one, two, three, four, five, and six and higher.

<i>type of cleft</i>	<i>birth order</i>					
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6 and higher</i>
Partial cleft lip.....	278	164	88	44	22	21
Complete cleft lip.....	27	19	8	3	1	3
Cleft of the lip and hard palate.....	119	76	38	21	14	18
Clefts of the soft palate..	199	129	67	34	17	16
Complete cleft palate.....	301	174	104	45	18	30
Cleft lip and palate.....	839	542	278	147	58	70
Combined forms.....	157	91	41	27	9	8

TABLE 2. Distribution of 4365 patients for the six birth orders.

<i>birth order</i>	<i>number</i>	<i>percentage</i>
First child.....	1920	43.99
Second child.....	1195	27.38
Third child.....	624	14.30
Fourth child.....	321	7.35
Fifth child.....	139	3.18
Sixth child and above.....	166	3.80
Totals.....	4365	100.00

1952 to 1962. Adequate data was not available on birth certificates prior to that time (Table 3).

As shown in Table 3, there is little difference in the ordinal number of birth. The difference in each case was less than one per cent. We can assume then that the ordinal number of birth has no influence on the presentation of an offspring with a cleft of the lip and palate. This was also found to be true when the data were analyzed for the different types of clefts.

We also examined the records of 4,365 cases to determine if there was any relationship between the ordinal number of birth and the sex (Table 4). Statistically no significant differences were found.

Summary

Approximately 7,000 patients have been seen and 9,000 operations performed on patients with cheilo-gnatho-palato-schisis at the Clinic of Plastic and Restorative Maxillofacial Surgery in Thallwitz, Germany, throughout its history. We have examined the records on 4,365 patients with a cleft to determine if there is any relationship between this anom-

TABLE 3. Distribution of birth orders for the cleft lip and palate patient group (2010) and for the total population in Germany (3,201,672), 1952 to 1962.

<i>birth order</i>	<i>number</i>	<i>percentage</i>
Cleft lip and palate		
first child.....	845	42.02
second child.....	565	28.11
third child.....	303	15.08
fourth child.....	163	8.11
fifth child.....	63	3.13
sixth child and above.....	71	3.53
Totals.....	2010	100.00
Total population		
first child.....	1,316,564	41.12
second child.....	921,735	28.79
third child.....	479,254	14.97
fourth child.....	234,150	7.31
fifth child.....	120,174	3.75
sixth child and above.....	129,895	4.06
Totals.....	3,201,672	100.00

TABLE 4. Distribution of sex and birth order for the 4,365 cleft lip and palate patient group, in percentages. Numbers of patients are in parentheses.

	<i>birth order</i>					
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6 and above</i>
male	44.07 (1107)	26.83 (674)	14.61 (367)	7.49 (188)	3.34 (84)	3.66 (92)
female	43.87 (813)	28.12 (521)	13.87 (257)	7.18 (133)	2.97 (55)	3.99 (74)
totals	43.99 (1920)	27.38 (1195)	14.30 (624)	7.35 (321)	3.18 (139)	3.80 (166)

aly and the ordinal number of birth. We also reviewed the records of patients seen between the years 1952–1962 and compared this to all live births, since adequate data were not available prior to that time. An analysis of this data reveals that there is no relationship between cleft lip and palate and the ordinal number of birth. This is true for the various types of facial cleft. The data also indicated no significant difference between the sex and the ordinal number of birth.

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