

THE DANZIG QUINTUPLETS: PERINATAL COMPLICATIONS AND FIRST DAYS OF LIFE

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The Danzig quintuplets were born in the 33rd week of pregnancy. Both the third and fifth child required treatment during the first 24 hours. During their stay in our clinic (81 days) all showed signs of dyspepsia and early anemia; two were treated for otitis media, and migrating convulsions were observed in one as a result of hyposaliemia. All the infants were discharged as healthy.

All newborns, after being cleared from mucus, were removed from the delivery room to the department for prematures and were placed in incubators.

The condition of child V, assessed as very bad due to intrauterine blood loss, further deteriorated after the transfer; there was apnea, which disappeared after mouth-to-mouth breathing. Between the 7th and 10th minute of life about 28 ml of fresh blood from a universal donor (0 Rh+) were transfused.

After the transfusion the child's general condition definitely improved, the skin became slightly pink. The values of 9.3 g % Hb and 12,000,000 erythrocytes, which were found already after the blood transfusion, show the extent of intrauterine blood loss. After the second transfusion of 35 ml of conserved blood of the same type, that is, 0 Rh+, the child's condition improved considerably.

Child III, born from a breech presentation, had respiratory distress a few minutes after birth. This was assessed to be mild. In the third hour of life the condition of the neonate deteriorated. The respiratory distress became worse; there was anxiety, generalized cyanosis, tremor of limbs. The treatment most frequently used by us in similar cases — intravenous izuprel, 40% glucose solution, vit. C, hydrocortisone — did not produce any effect. As cerebral edema was suspected because of breech birth, a lumbar puncture was carried out. The cerebrospinal fluid was xanthochromic and oozed out quickly in large drops; 3.5 ml were taken out. The condition of the newborn was still so alarming that it was decided to administer intravenous sodium bicarbonate without Acid-Base determinations. Cyanosis disappeared within 2 hours, and dyspnea 20 hours after treatment.

According to the physical examination all children had a normal body build, the internal organs did not show any visible changes. Signs of immaturity: decreased muscular tension, flaccidity of the skin, sucking reflex very weak in neonates I, III, and IV, and absent in neonates II and V.

Table 1. *The Condition of Quintuplets at Birth*

Birth order	Sex	Time of birth	Presentation	Apgar score	Birth weight (g)	Body length (cm)
I	♂	10 : 50	occipital	6	1780	44
II	♂	11 : 10	occipital	6	1380	44
III	♂	11 : 15	breech	6	2000	47
IV	♀	11 : 20	occipital	6	1710	47
V	♀	11 : 25	transversal	2	1460	43

The quintuplets were kept in incubators for 4-5 weeks. The oxygen level in the incubators kept around 30% and the humidity at 70-80% formed a suitable environment for all of them, whereas the temperature in the incubators in the first few days of life was kept around 30°, 32°, and 33° C, according to the fast variations in heating of the infants' skin.

In the first few weeks of life the quintuplets were fed by tube; the more active quintuplets had a supplement of 5% glucose solution between the feeds. When the adequate sucking reflex appeared, feeding with the nipple was initiated. In the first two weeks the children were fed exclusively with human milk. In all children in their third week of life, while their general condition was good, there were dyspepsia. It was considered as a sign of intolerance to the milk collected from the puerpera. Humanized milk Similac (of Abbot firm) was successfully administered. In the fourth week Similac was partly replaced by Nutramigen, a milk preparation richer in calories and containing hydrolysed proteins. The mixture of full powdered milk was gradually introduced in the seventh week of life. The diet was supplemented with basic vitamins: A, B complex, C, D₃. Calcium was given all the time and iron from the sixth week of life on. The amount of calories in the first week was calculated from body weight and from the necessary caloric demand. During the following weeks, the daily diet was planned also from the curve of the body weight and individual appetite of each quintuplet was taken into consideration.

Table 2. *Weight Increase and Amount of Calories in the Quintuplets during Their Stay in the Clinic*

	Weight increase		Amount of calories (mean values/kg)
	g	%	
I	2020	113.5	124.31
II	2100	155.2	130.17
III	1990	99.5	132.42
IV	1950	114.0	127.97
V	2220	152.0	123.86

To safeguard the children from a possible infection, a few precautions were taken.

1. The two rooms were isolated by a filter from the rest of the newborn department. Both rooms were fitted out with the equipment necessary for looking after the quintuplets and were also supplied with separate sets of incubators. Every few days the children were transferred from one room to the other. Both rooms were carefully cleaned, the "empty" room was disinfected.
2. The special staff for looking after the children was generally and bacteriologically examined and spent the first four weeks in the Clinic in complete isolation on so-called prophylactic quarantine.
3. Before the entrance to the room of the quintuplets the washing of hands in sterinol and change into protective dresses were compulsory: surgical masks, gowns, feet covers.
4. The swaddling cloth, linen for children, bottles for feeding, and protective clothing were sterilized in an autoclave.
5. Journalists, photoreporters, had an access to the newborn department exclusively in clinical clothing, and access to the rooms of the quintuplets in additional sterile clothing.
6. The control bacteriological examinations were carried out systematically and they showed in children a mixed variable bacterial flora in smears from the nose as well as from the feces. Among the pathogenetic organisms in all quintuplets there was a periodic presence of staphylococcus aureus (coagulase positive). The extent of air contamination with the organisms in the rooms of quintuplets (according to the determination by the Department of Microbacteriology, AMG) was less than the one permissive in the boxes for blood collection in transfusion stations.
7. Antibiotics were given to the children according to their prematurity and to additional indications. Methycillin was administered already on the first day of life to children III and V in view of perinatal complications. The administration of methycillin on the fourth day of life was begun in the child born as first because of single pyogenic seborrhea. On the same day, methycillin was also prescribed to the child born as second, in which a single attack of slight cyanosis was observed. Between the eleventh and twelfth day of life all children obtained orally penbritine because of dyspepsia. In the sixth week of life two children (I and V) were treated with carbenicillin because of pyogenic otitis media produced by *Pyocyanus* bacteria. The sources of the infection of these children were not detected.

All children in the 6th week of life showed symptoms of early anemia. The administration of the preparation Ferro-66 (Promonta) produced high levels of Fe^{++} in the serum (118-139 mg%). Renewal of erythrocytes was not observed in spite of the periodic administration of vitamin B_{12} and of folic acid. Because of the considerable decrease of Hb level and of the erythrocyte number, conserved blood was transfused by drip. Each child had two or three such transfusions.

An incident observed in a child born as second with symptoms of intrauterine dystrophy should be mentioned. This child, with very good appetite and a good increase of weight, showed an alarming increase of the head perimeter. At the beginning of the 5th week of life, when the head perimeter was greater than the thorax perimeter by 6 cm, convulsions appeared. The suspicion of progressive congenital hydrocephalus was questioned by the neurologist because of convulsions which were not typical for hydrocephalus.

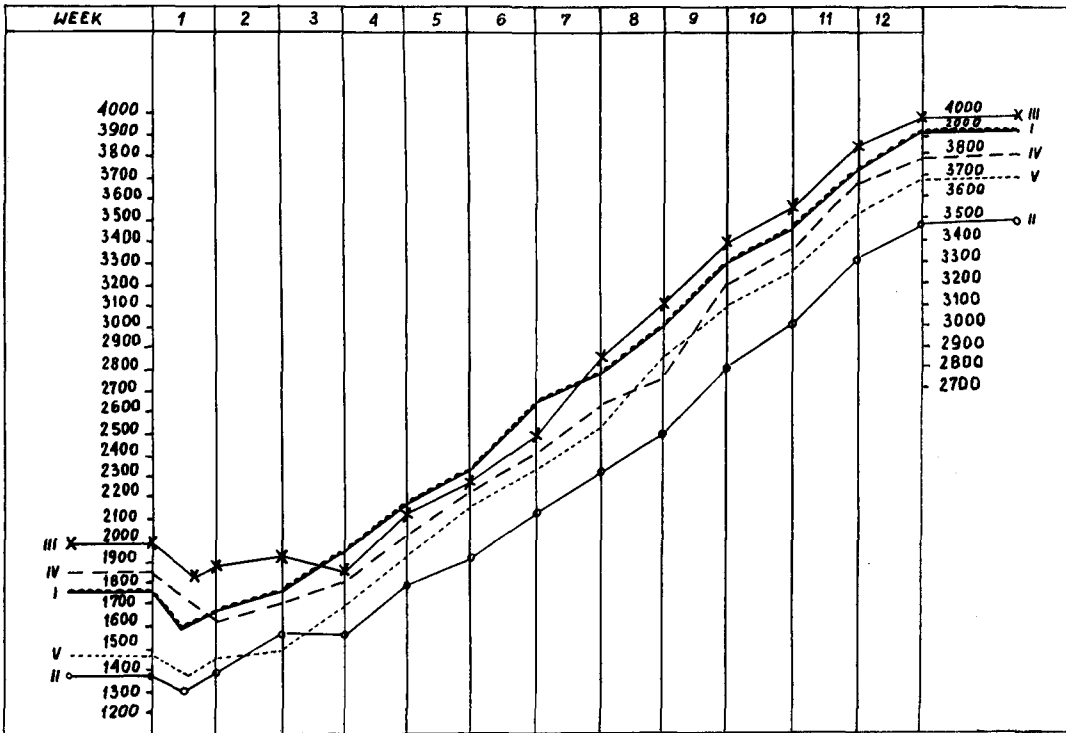


Figure. Weight increase of the quintuplets in their first weeks of life

A diagnosis of hyposaliemia as the cause of the child's convulsions was established. The transillumination of the skull and further observation of the child finally excluded the suspicion of congenital hydrocephalus.

The described incident of "migrating convulsions" led us to examine the level of electrolytes in the blood serum of the other quintuplets. In all of them there was hyposaliemia, which was rectified by periodical administration of NaCl and restriction of fluids.

Besides the described pathological conditions — dyspepsia, otitis media in two of the quintuplets, anemia, and electrolytic disturbances in all — there were no other complications.

The physical development of the children assessed as very good. The Figure shows the increase of weight in the quintuplets in the first subsequent weeks of life. Table 2 presents the increase in body weight of each child in grams and in percentage in relation to birth weight, and the mean amounts of calories in 24 hours, during the stay in the Clinic. This comparison shows the lack of correlation between the amount of calories and the increase in body weight. Table 3 presents the evolution of a number of measurements in the first few weeks of life. The everyday observations of the psychomotor

Table 3. *Growth of the Quintuplets in Their First Weeks of Life*

Child	Measurement	Day of life		Total growth (cm)
		5 (17 May)	74 (24 July)	
I	Length	44.0	52.0	8.0
	Head circumference	29.0	35.0	6.0
	Chest circumference	27.0	35.0	8.0
	Difference between circumferences	2.0	0.0	
II	Length	44.0	51.0	7.0
	Head circumference	28.0	35.5	7.5
	Chest circumference	23.5	33.5	10.0
	Difference between circumferences	4.5	2.0	
III	Length	47.0	54.0	7.0
	Head circumference	30.0	36.0	6.0
	Chest circumference	27.5	35.5	8.0
	Difference between circumferences	2.5	0.5	
IV	Length	47.0	52.0	5.0
	Head circumference	29.0	34.5	5.5
	Chest circumference	25.5	34.5	9.0
	Difference between circumferences	3.5	0.0	
V	Length	43.0	51.0	8.0
	Head circumference	27.5	34.5	7.0
	Chest circumference	25.0	34.5	9.5
	Difference between circumferences	2.5	0.0	

development of children did not show any abnormalities. The children were discharged on the 81st day of their life in healthy condition and were handed over to the further care of the Department of Pediatrics, Danzig Academy of Medicine.