

QUINTUPLETS

RECORD OF A PREMATURE DELIVERY

BY

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It is presumed that no apologies are needed for this paper, wherein a descriptive account of a case of quintuplet birth is given, since the incidence of the phenomenon is extremely rare, the condition is of perennial interest, and the aetiology is a fertile source of ingenious speculation and hypothesis.

The "quins" were prematurely born to a Hindu multiparous woman (six-para) about 30 years of age, belonging to the lower middle classes at Tuni, a town in the East Godavari district of the Madras province, in July, 1939. She seems to have sought admission in the hospital for women and children at Tuni for an unusually big abdominal tumour. The case was presumably diagnosed as pregnancy complicated by polyhydramnios. Premature delivery occurred during the sixth month. Dr. S. T. Stephen, the medical officer attached to the hospital, conducted the labour. The case should surely have proved a surprise to the lady doctor, who deserves congratulations on having secured the consent of the mother and other relatives to retain the rare and interesting specimen of the quintuplets, which are said to have shown signs of life at birth, but which unfortunately all died soon after. This uncommon incident attracted the attention of the residents of the town and neighbouring villages. An enterprising journalist had the birth published in the popular Telugu daily, the *Andhra Patrika*, along with a photograph of the quintuplets, with a view to authenticating the report. Lieutenant-Colonel Alagappan, the district medical officer, advised Dr. Stephen to present the specimen to the Medical College, Vizagapatam, to which he rightly thought it would prove a valuable acquisition. The offer was readily and enthusiastically accepted by Major Shepherd, principal of the college, who in turn was pleased to give the specimen to the department of anatomy on August 5. It has since been suitably mounted, and is now on exhibit in the museum of the department of anatomy, Medical College, Vizagapatam.

Description of Foetuses and Placenta

The specimen consists of five separate foetuses of about the same size with slight individual variations and of the same sex (all females), having five separate umbilical cords attached to a single fairly big placenta. The foetuses are all normally formed; the limbs are flexed in the usual intra-uterine position. The necks are slightly extended. The skin is of a light yellow hue mottled with patches of discoloration here and there. Subcutaneous fat has not formed. The cutaneous blood vessels are discernible through the integument. The skin is shrunken and wrinkled, owing perhaps to prolonged immersion in spirit and to the absence of subcutaneous fat. The pilary system is just appearing. Fine vellus (wool, down, lanugo, or fuzz) is distinct on the scalp and on the face. On the trunk and limbs the hairs are seen under a hand lens as discrete punctate black dots, similar to those observed after a

shave. Flumina pilorum cannot be made out on the trunk and limbs owing to shortness of the hair. Dermal papillae (epidermal ridges) are present on the palms of the hands and soles of the feet. The nails are clearly discerned, and in some toes project even beyond the tips. The eyelids are fused. The pinnae are well formed and present the characteristic scroll-like appearance seen in the adult. The areas of the frontal fontanelles are depressed and sunken. The cast of countenance may be described as plain and coarse owing to the broad nose and big mouth. The tips of the tongue are shown.

A careful examination was made with a view to determining if there were any signs of fusion of several separate placentae. There are no such indications: the placenta is definitely a single mass. The periphery shows a thick membrane resembling the dura mater in appearance, thickness, and consistency. This obviously is the single chorionic investment common to all the five foetuses. The amniotic sac, however, is multilocular. Five separate sacs can be made out. The septum between the adjacent sacs consists of two layers which admit of separation by gentle manipulation. The placenta is thinner in the middle than at the edges, probably owing to the dropping away of a few cotyledons from the central portion during process of handling. There are distinct anastomoses between the vessels of the five cords. The marginal sinus is seen only in a part of the circumference. The sites of implantation of the five cords in the placenta are best expressed in terms of the numerals on the dial of a clock. With the cord of foetus A at the 12 o'clock position, the attachments of the cords of foetuses B, C, D, and E correspond very nearly to the 2.30, 3.30, 6, and 9 o'clock positions (Fig. 1).

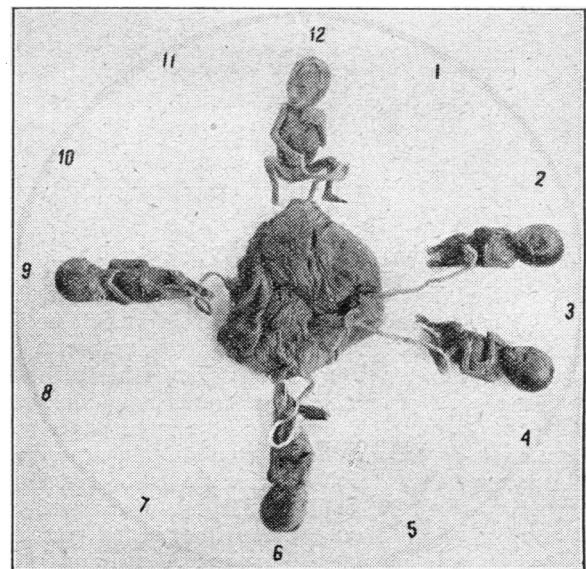


FIG. 1.

Measurements of the Foetuses

Foetus	Crown-Rump Length	Maximum Head Length	Maximum Head Width	Remarks
A	14.4 cm.	5.3 cm.	3.9 cm.	Head slightly distorted
B	13.4 cm.	5.2 cm.	4.1 cm.	
C	14.05 cm.	5.2 cm.	4.2 cm.	
D	14.0 cm.	5.2 cm.	4.1 cm.	
E	14.3 cm.	5.1 cm.	4.2 cm.	

The crown-heel length could not be measured accurately as the limbs were fixed in the flexed position and could not be extended without injury to the specimen. Separate measurements had therefore to be taken of the segments of the flexed lower limbs of the foetuses. The approximate crown-heel length of the foetuses may be put down as 21 to 22 cm. The

lengths of the umbilical cords vary from 20 to 25 cm. The total weight of the five foetuses together, exclusive of the placenta, is about 930 grammes, giving an average of 186 grammes each. But all the foetuses are not exactly equal in size. Their sizes in descending order of magnitude are A, C, D, E, B (Fig. 2). The specimen comprises intact all the five foetuses connected to a single placenta by the five umbilical cords.

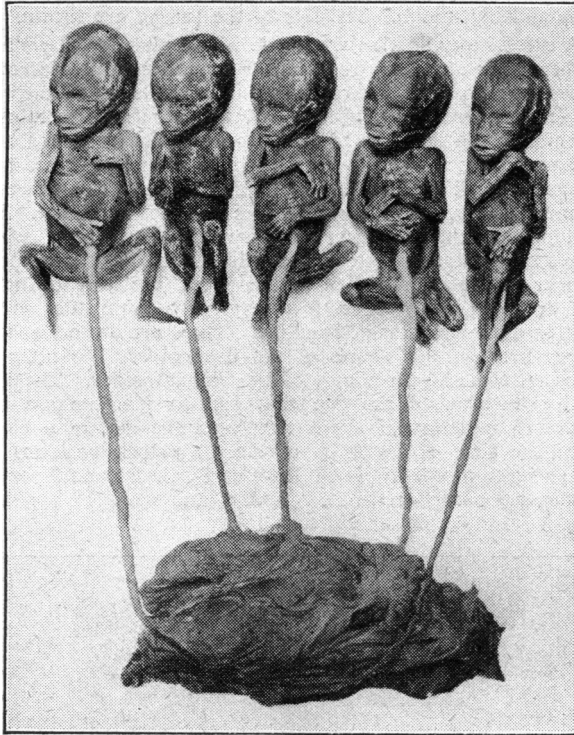


FIG. 2.

Frequency and Aetiology of Quintuplet Births

The total number of quintuplet births on record is about thirty. The incidence of quins, according to Guzzoni, is about one in 41,600,000 labours. It can therefore be seen that the incidence is very rare. Multiparity has been mentioned as a predisposing causative factor of multiple pregnancies in general: the mother of the quins under reference is a six-para, and thereby confirms the observation. Multiple pregnancy has been observed to be commonest between the ages of 25 and 29. The age of the mother in this case is given as about 30, but is not definitely known. It has often been remarked that the rice-eating people of the Tropics are more fertile and fecund than inhabitants of other parts of the world. India and China are two countries usually cited as evidence of this; accordingly multiple births should occur more often there. It is difficult to dogmatize in the absence of definite facts and figures; and there is besides the ever-elusive and baffling hereditary factor. No details regarding the genealogy of the mother of these quins are available.

Discussion

In cases of multiple pregnancy the size of one foetus out of the many can by no means be taken as a criterion for the determination of age. Taking the other physical findings in conjunction, such as the commencing pilary system, non-appearance of the subcutaneous fat, growth of nails, identifiability of sex, fusion of the eyelids, etc., the age of the foetuses may be estimated as somewhere between the fifth and sixth months of intra-uterine life.

To the question whether the foetuses are uni-ovular or multi-ovular it may be confidently answered that the single placenta, the single chorion, the uniformity of sex, and extensive vascular anastomoses between the vessels of the cords lead us to the inference that these quins are uni-ovular, other synonymous terms being monozygotic, identical, monochorionic, and homologous. Quintuplets are said to develop probably, with rare exceptions, from more than one ovum. This particular case may be taken to be one such rare exception. Multiple pregnancy may result from the fertilization of several separate mature ova during the same menstrual cycle. The foetuses in such cases may not be of the same sex, size, and appearance; they are fraternal foetuses comparable to brothers and sisters in a family. On the other hand, multiplicity may be caused by the complete division of one single fertilized ovum into two or more embryos, each embryo being endowed with the capability of full and normal development and each containing the same number of chromosomes with all the chromosomal characters and potentialities. The factor or factors which cause the splitting and division of the fertilized ovum into several embryos are not known. The constant occurrence of identical quadruplets in the American armadillo (family Dasypodidae) is said to be due to temporary failure of nutrition during the critical stage of implantation of the ova in the uterine wall. We do not, however, propose to enter into a detailed discussion on the many and various complicated and abstruse factors, external and internal, which culminate in the division of one mature ovum into many. We would like, however, to add a word by way of explanation of how the odd number of five is arrived at. It has to be assumed that the first stage in the process consists in the division of one into two, that during the second stage the two further divide into four, and that during the terminal phase only one of the four undergoes a still further subdivision into two, thereby resulting in a total of five. In this particular case foetuses A, D, and E may be taken to represent three of the four resulting from the second division, and that foetuses B and C probably represent the twinning brought about by the further division of the remaining one of the four.

Summary and Conclusions

A short descriptive account of quintuplets prematurely born during the sixth month of pregnancy is given. Arguments in favour of the identical or uni-ovular nature of the quintuplets are adduced. Statistics are given to show that the incidence of the condition is very rare. The aetiology of multiple pregnancies is also briefly discussed. Two photographs, one taken before and the other after mounting, are reproduced.

We have much pleasure in acknowledging our indebtedness to Dr. S. T. Stephen, who first conducted the labour and secured the specimen; to Lieutenant-Colonel S. C. Alagappan, I.M.S., D.M.O., East Godavari, for having presented it to the Medical College, Vizagapatam; and finally to Major J. F. Shepherd, I.M.S., principal of the college, for having handed it to the department of anatomy.

"Aculene" from *Matricaria*.—The essential oil of the so-called German chamomile contains a fraction which has a strongly protective action in a number of inflammatory processes—for example, the mustard-oil chemosis of the rabbit's eye and the insolation erythema of human skin. The fraction contains a hydrocarbon of dark blue colour, to which the name "aculene" is given.—Antiphlogistic Action of "Aculene" from *Matricaria chamomilla*. W. Heubner and W. Albath.—*Arch. exp. Path. Pharmac.*, June 3, 1939, **192**, 383.