

# FREQUENCY OF THORACOOMPHALOPAGUS CONJOINED TWINS IN THAILAND

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*Twenty-two cases of conjoined twins have been collected in Thailand. The numbers occurring in the various parts of Thailand are listed. No known cases have occurred between the years 1968-1973. The extent of union between the conjoined twins is described and illustrated. Some theories are offered as to etiological factors which might account for the occurrence of conjoined twins.*

Siamese conjoined twins occur as a result of incomplete or abnormal splitting of the daughter cells of a fertilized, single egg. This usually occurs after several cleavages have taken place or at the time of the inner cell mass formation (Levitan and Montagu 1971). Conjoined twins have been well known in Thailand since the time of Eng-Chang, more than a century ago.

The literature relating to the occurrence of conjoined twins in Thailand has been reviewed (Ungprasit 1949, Sangwichian 1951, Kunawisan 1957, Pringpuangkao 1958) and the author has also had personal communications from various health centres of Thailand, so that a total of 22 cases is recorded (Table 1).

Ten of the pairs were alive at birth, but some of them died during the neonatal period (records are incomplete), while some others have been successfully separated. The other 12 pairs were dead on delivery. Some of them may have been dead for some time in utero and others probably died at the time of delivery. It is interesting to note that during the past six years (1968-1973) there have been no cases of conjoined twins delivered in four of the largest hospitals in Bangkok. The number of deliveries in these hospitals and the incidence of multiple pregnancies is shown in Table 2. These figures show that the incidence of twins is 1:80, and of triplets 1:6400. No explanation is offered as to why there have been no cases of conjoined twins in this large number of deliveries.

As can be seen in the Figures, the degree of union between the conjoined twins varied from a common skin band (bridge) to a common liver and a common heart. The sterni were sometimes joined at the xiphoid process or at a higher level. The twins always had the same placenta and the same amniotic and chorionic sac. A Caesarian section was only done in a few cases.

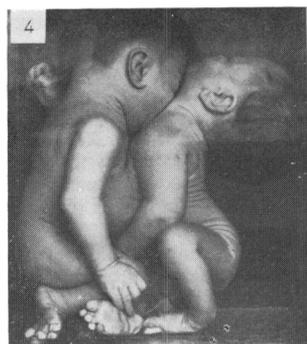
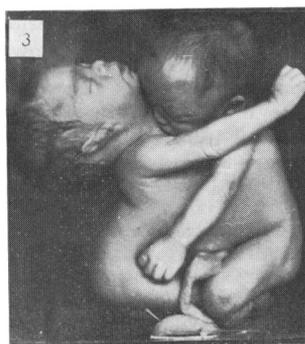
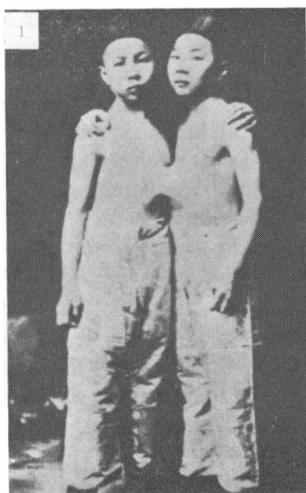
All the cases described in Thailand have been of the thoracoomphalopagus type. Other types of union such as craniopagus, pygopagus and manuopagus have been described elsewhere, but have not been seen in Thailand.

Table 1. Conjoined twins in Thailand

No. of cases	Name of twins or reference	Years	Area of Thailand
1	Eng-Chang	1811	Central
1	Napis-Prisna	1953	NE
1	Wannee-Sriwan	1954	Central
3	Pers. comm.	1952-1954	Central
5	Pers. comm.	1959-1962	E
4	Pers. comm.	1951-1961	S
3	Pers. comm.	1958-1960	N
4	Pers. comm.	1955-1963	NE

Table 2. Number of deliveries in four large Bangkok hospitals (1968-1973)

Hospital	Total deliveries	Twins	Triplets	Quad-ruplets
Ramathipodi	21,722	190	2	1
Siriraj	74,519	624	3	—
Chulalongkorn	42,448	495	5	—
Womens <sup>a</sup>	114,119	818	9	—



Figs. 1-4. Various degrees of union in conjoined twins.

Fig. 1. Conjoined twins united by a skin bridge at the level of the xiphoid process of the sternum.

Fig. 2. Conjoined twins sharing a common liver.

Figs. 3 and 4. Extensive union at the thoraco-abdominal level. The extent of the internal union is not known, no dissection having been performed.

It is accepted that DZ twinning is genetically conditioned through an autosomal recessive gene which is transmitted by both female and male genotypes (McKusick 1968). There is no direct genetic involvement in MZ twinning, but it seems possible that some environmental factor occurring at an early stage of development may provoke some chromosomal aberration which may affect certain individuals and their families. This may also apply to conjoined twins. It is interesting to note that, although their appearances are similar, their disposition, behaviour and emotional responses may differ widely.

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