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Case Report

Siamese Twins Double Monsters

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ABSTRACT

Conjoined twins are inappropriately named as "Siamese twins" in relation to twin brothers Chang and Eng, born in Siam (Thailand) in 1811. Chang and Eng Bunker (1811–1874) were brothers born in Siam (now Thailand) who travelled widely for many years and were known internationally as the Siamese Twins. Chang and Eng were joined at the torso by a band of flesh and cartilage, and by their fused livers. In modern times, they could easily have been separated.[2] Due to the brothers' fame and the rarity of the condition, the term Siamese twins came to be associated with conjoined twins.

Keywords*: Conjoined twins, Siamese twins (historical term), Chang and Eng Bunker, Thailand, Twin anomaly / congenital malformation.*

INTRODUCTION

Conjoined twins with monoamniotic placenta result from the incomplete splitting of the embryonic disc at 13th to 15th day of gestation. This represents a unique structural defect of monozygotic monoamniotic twins. Conjoined twins are inappropriately named as "Siamese twins" in relation to twin brothers Chang and Eng, born in Siam (Thailand) in 1811. Chang and Eng Bunker (1811–1874) were brothers born in Siam (now Thailand) who travelled widely for many years and were known internationally as the Siamese Twins. Chang and Eng were joined at the torso by a band of flesh and cartilage, and by their fused livers. In modern times, they could easily have been separated.[2] Due to the brothers' fame and the rarity of the condition, the term Siamese twins came to be associated with conjoined twins.

CASE REPORT

The present study aimed for documenting a rare case of cranio-thoraco-omphalopagus twins born at 24 weeks period of gestation, preserved as a museum specimen in our college Bankura Sammilani Medical College to educate students and visitors of the anatomy museum about one of the embryogenesis anomalies.

EXTERNAL FEATURES – This specimen shows fused head, face, thorax and anterior abdominal wall upto umbilical cord. It has only one pair of eyes, two pairs of ears, one nose, one mouth & two pairs of each limb, two external genitalia and one umbilical cord.

FIG: A. FRONT VIEW OF SPECIMEN

FIG: B. BACK VIEW OF SPECIMEN

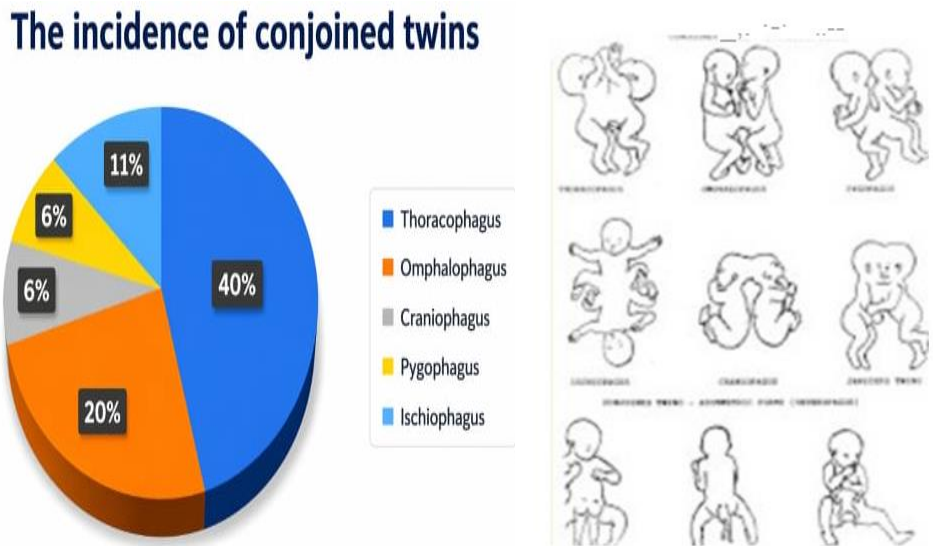
DISCUSSION

The exact pathophysiological etiology of conjoined twins is still unknown. They are born because the non-separated parts of the otherwise normal twins remain fused throughout the period of development. There are two hypotheses about the development of conjoined twins—

1. A single fertilized egg does not fully split during the process of forming identical twins. If the zygote division occurs after two weeks of the development of the embryonic disc, it results in the formation of conjoined twins.
2. Fusion of two fertilized eggs occurs early in development. Partial splitting of the primitive node and streak may result in the formation of conjoined twins.

These twins are classified according to the nature and degree of their union. Occasionally, monozygotic twins are connected only by a common skin bridge or by a common liver bridge. The type of twins formed depends on when and to what extent abnormalities of the node and streak occurred. Misexpression of genes, such as goosecoid, may also result in conjoined twins. Goosecoid activates inhibitors of BMP4 and contributes to regulation of head development. Over or under expression of this gene in laboratory animals results in severe malformations of the head region, including duplications, similar to some types of conjoined twins.

The incidence of conjoined twins is 1 in 50,000 i.e. 1,25,000 births, among which 70%–80% are females. Approximately 18%–40% are joined at chest (thoracophagus), 10%–34% at anterior abdominal wall, 2%–6% at head (craniophagus). About 40% of conjoined twins are stillborn, and an additional 35% survive only one day.



DIAGNOSIS & TREATMENT

I'm presenting this case owing to the rarity and importance of timely antenatal screening. The best early pregnancy diagnosis method is still first trimester ultrasonography. Embryological abnormalities, tissue characterisation, and determining the kind of conjunction can all be aided by prenatal MRI.

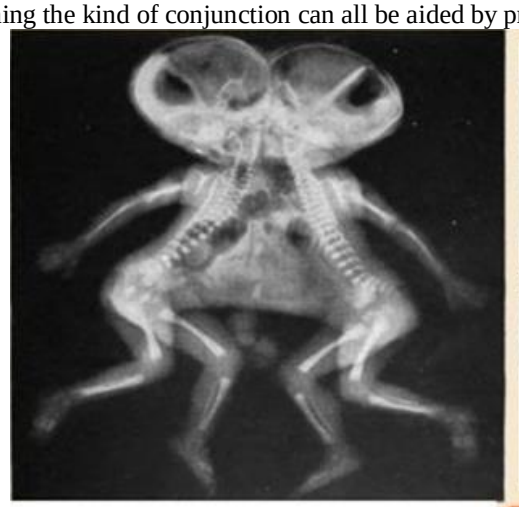


FIG C. XRAY OF CONJOINED TWINS

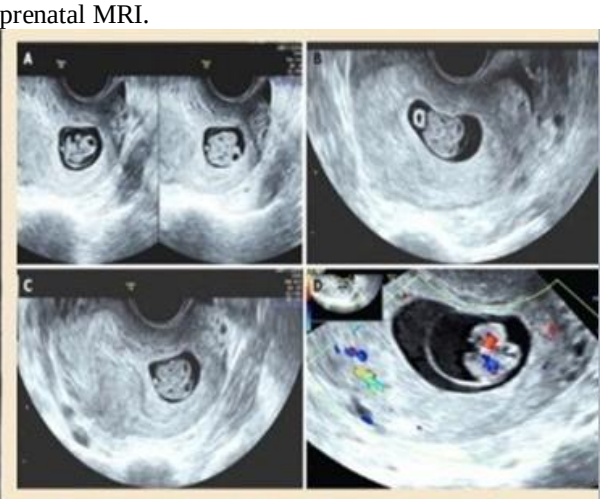


FIG D. EARLY PRENATAL DAIGNOSIS BY ULTRASONOGRAPHY

TREATMENT

Treatment of conjoined twins depends on their unique situation — their health issues, where they're joined, whether they share organs or other vital structures, and other possible complications.

Monitoring during pregnancy — In case of conjoined twins, close monitoring throughout the pregnancy is required. When needed, other pediatric specialists can be referred:

- Surgery (pediatric surgeon)
- Urinary system, such as kidneys and bladder (pediatric urologist)
- Bone and joint surgery (pediatric orthopedic surgeon)
- Surgical repair and correction (plastic and reconstructive surgeon)
- Heart and blood vessels (pediatric cardiologist)
- Heart and blood vessels surgery (pediatric cardiovascular surgeon)
- Care of newborn babies (neonatologist)

Specialists and others on the health care team learn as much as possible about conjoined twins. This includes learning about their body structures, their ability to perform certain activities (functional capabilities), and their likely outcome (prognosis) to form a treatment plan for twins. A C-section is planned ahead of time, often 3 to 4 weeks before your due date. After conjoined twins are born, they're fully evaluated. With this information, the health care team can make decisions regarding their care and whether separation surgery is appropriate.

Separation surgery

If a decision is made to separate the twins, separation surgery is usually done around 6 to 12 months after birth to allow time for planning and preparation. Sometimes an emergency separation may be needed if one of the twins dies, develops a life-threatening condition, or threatens the survival of the other twin.

CONCLUSION

Our case report highlights limitations in the investigative capacity of health facilities in developing countries where not all mothers have access to the full package of antenatal care that includes ultrasonography to screen for congenital abnormalities. The findings also emphasize the need to decentralize specialist surgical services at the regional level in the country and the need to equip facilities with enough trained personnel to comprise a multidisciplinary team and equipment to carry out relevant imaging investigations.

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