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Case Report

Sirenomelia (Mermaid Foetus): An Autopsy Report

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Abstract: Sirenomelia, also known as mermaid syndrome, is a very rare fatal developmental abnormality in which the legs are fused together, and a variable combination of visceral abnormalities. We are presenting a rare autopsy case of Mermaid foetus.
Keywords: Sirenomelia, Mermaid syndrome.

INTRODUCTION

Sirenomelia is a very rare congenital abnormality in which the legs are fused together, giving them the appearance of a mermaid's tail. This condition is found in approximately 1 in 100,000 live births [1] and is usually fatal [2]. It is commonly associated with renal agenesis, absent or malformed external and internal genitalia, a single umbilical artery, imperforate anus, and a blind ending large intestine [3].

CASE REPORT

An 18 years primigravida with history of 24 weeks gestation presented with premature labour pains. She gave birth to a still born foetus by spontaneous vaginal delivery. She had no medical illness. There was no history of consanguinity. There was no family history of congenital abnormality.

A complete autopsy was performed. The dead foetus weighed 500gms. There was fusion of the entire lower limbs from the hip to the foot, with bones present in the thighs and the legs (Fig.1).

Fig. 1: Gross photograph showing fusion of the entire lower limbs from the hip to the foot

Radiological examination revealed fusion of pelvic bones, both the femurs and partial fusion of tibia. Foot showed only three metatarsals, three toes with phalanges (Fig. 2).

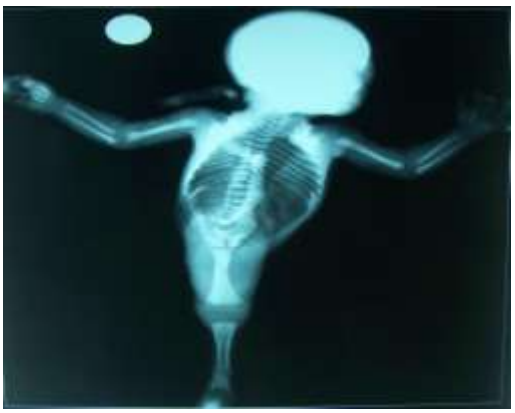

Fig. 2: Radiological photograph revealing fusion of pelvic bones, both the femurs and partial fusion of tibia, with three metatarsals, three toes with phalanges in the foot

There was no anal opening and no discernible external genital organs. The umbilical stump revealed only one artery and one vein.

Internal examination revealed absence of renal organs, genital organs, adrenals. The intestine ended into a blind sac. The thoracic organs were unremarkable and the brain was autolysed.

DISCUSSION

Sirenomelia, also known as sirenomelia sequence, is a severe malformation of the lower body characterized by fusion of the legs and a variable combination of visceral abnormalities [1].

The cause of sirenomelia remains unclear, however, maternal diabetes mellitus [3, 4], genetic predisposition, environmental factors and vascular steal phenomenon with the single vitelline umbilical artery diverting blood supply and nutrients from the lower body and limbs [5] have been proposed as possible causative factors.

The pattern of birth defects seen in sirenomelia is associated with abnormal umbilical cord blood vessels. Most babies with sirenomelia have only one umbilical artery and one vein, as was seen in the present case.

The spectrum of malformation of the lower limbs seen in babies with sirenomelia ranges from fusion of the legs into one lower limb with only two bones present in the entire limb (a femur and a tibia) and absence of foot structures to fusion of the skin of the lower limbs along the inner leg with fully formed and separate lower limb bones and fully formed feet which are fused at the ankles [6]. The latter form was seen in our case.

There are 3 known variants of the different degrees of lower extremities fusion:

- symelia apus: No feet are present and the limbs are completely fused into a single limb; one femur and one tibia are present. Our case partially fits into this category.
- symelia unipus: One foot is present (a partial fusion of both feet), 2 femurs, 2 tibiae and 2 fibulae.
- symelia dipus: Two feet are present giving the appearance of fins, hence the term ‘mermaid fetus’ for this condition. The fusion of the limbs extends only as far as the ankles [7].

More than half the cases of sirenomelia result in stillbirth and those born alive usually die within a day or two of birth because of complications associated with abnormal kidney and bladder development and function [6]. Nine mermaid cases surviving after reconstructive surgery have been reported [8].

The diagnosis is currently performed by prenatal ultrasonography. Antenatal ultrasonography clues include oligohydramnios, renal agenesis and a fibula positioned between the tibiae.

CONCLUSION

Sirenomelia is a very rare, curious, interesting abnormality in the foetal autopsies.

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