

## SIRENOMELIA OR MERMAID

by

K. SRINIVASA RAO, B.Sc., M.D.,  
M. K. LALITHAKUMARI, M.D., D.G.O.

and

K. RAJAKUMARI, M.B.B.S.

Fusion of lower extremities in a foetus is known as symphodia or sirenomelia and is associated with a disturbance in the formation of the pelvis and genito-urinary system. This fused single extremity contains normal number of bones with fusion of soft tissues, or it may be one in which bones are entirely absent and only a small tail-like appendage exists. Most commonly the femur is single or partially divided and two or three bones are present below the knee and 5 or 6 digits are attached to the single foot. The position of the extremity may be reversed with the knee cap on the back, the leg bends anteriorly and the sole of the foot directed anteriorly. Sacrum is absent and the iliac bones are fused. The anus is always imperforate and the genito-urinary system may be absent. Gonads are normally present but the genital organs are rarely found (Potter, 1952).

The subject is briefly described by Potter (1952) in her text-book.

\*Prof. of Pathology.

\*\*Addl. Prof. of Obst. & Gynec.

\*\*\*Tutor in Pathology.

Andhra Medical College, Visakhapatnam 2, (A.P.) S. India.

Received for publication on 14-2-68.

Three cases of her own are shown in illustrations. Recent case reports in the British literature were published by Resnick (1954) and Foulkes and McMurry (1954). Hendry *et al* (1956) recorded cases of sirenomelia with autopsy findings of their cases. Though the literature on this subject of mermaids is by no means scanty, it is a rare malformation that is seen and met with in obstetrics and hence is being recorded here for its rarity.

### Case History

D. A., Hindu female, aged 25 years, was admitted in K. G. Hospital, Visakhapatnam, on 23-9-1967 at 1-30 A.M. for delivery. History of 8 months' amenorrhoea, pains since 48 hours, draining since 4 hours. First full-term normal delivery, male child 8 years' alive; second is the present conception.

Per abdomen uterus 32 weeks, acting vigorously once in 3-5 minutes lasting for 30-40 seconds. Foetal heart not heard.

Per vaginam draining present; cervix 8 cm., dilated. Membranes absent. Breech at the outlet. Patient delivered immediately on admission, a dead foetus with multiple congenital anomalies — one leg, one thigh, one buttock. Hare lip deformity. Sex could not be made out (Fig. 1).

**X-ray of the mermaid:** The long bones of the lower extremity show 2 femora with mid-shaft fractures, 2 tibia with absent fibular bones (Fig. 2). Only radii seen in the forearms with absent ulnar bones.

V.D.R.L.: Negative.

**Autopsy examination:** Length of foetus 12 inches (six inch length of the symphysis), sirenomelia weighing 1,500 gms., showed the following congenital anomalies: (Fig. 3).

(1) Fusion of the soft parts of the thighs and legs forming one single extremity called symphysis;

(2) No external genitalia seen except a genital bud;

(3) Imperforate anus. Absence of urethra and genital opening. Ureters and bladder absent though hypoplastic kidneys are seen;

(4) Colon ending blindly into a sac.

(5) Pulmonary artery continuing as thoracic portion of aorta.

(6) Testes in the inguinal regions suggesting gonadal male sex of the mermaid.

In place of a regular pelvis, a rounded single bone (pelvis) was present with absence of sacrum and other bones.

#### Comment

Contrary to the popular belief the majority of "mermaids" have male gonads. In Kampmeir's series out of a total of 52 cases in which sex was determined, 38 were males. In most reported cases there were no visible external genitalia and this probably led to the belief that these mermaids were feminine. New Bill (1941) described a mermaid who differed from the great majority in having a well developed phallus and scrotum but the testes were undescended. No genital, urethral or anal orifices were present in any of the so far recorded cases in the literature. Malformations of the upper urinary tract were recorded in the great majority of cases and considerable variations were noted. The most common finding is complete agenesis of kidneys and ureters which adds the features of renal aplasia to those of sirenomelia.

Oligohydramnios is the rule in the cases that are associated with renal aplasia. Lack of amniotic fluid is regarded as the mechanical cause of minor malformations of the extremities and also for sirenomelia.

Kampmeir (1927) stresses a single umbilical artery as the essential cause of sirenomelia. Also stressed by Hendry *et al* (1956) are parenteral sub-fertility, elderly primipara and consanguinity as predisposing factors. None of them were seen in the present case except a single umbilical artery. Experimentally, the production of sirenomelia in chick embryos by irradiation of the posterior end of the body at the stage of primitive streak is quoted by Hendry *et al* (1956) in the sirenomelia. These can be comparable to spontaneous malformations in humans.

#### Summary

(1) A rare case of sirenomelia with autopsy findings is recorded.

(2) The essential features of sirenomelia are briefly discussed.

#### Acknowledgements

We offer our thanks to the Principal, Andhra Medical College, Visakhapatnam, for permitting us to record this case. With pleasure we acknowledge the help rendered by Mr. K. Ch. Appalaswamy, photographer and Mr. V. Satyanarayana, stenotypist of the Dept. of Pathology.

#### References

1. Foulkes, J. F. and McMurray, J.: J. Obst. & Gynec. Brit. Emp. 61: 827, 1954.

