

Case Report

CASE REPORT: FOETAL FEMUR LENGTH IN ANENCEPHALY WITH POSTMATURITY

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INTRODUCTION

Post-maturity is defined as a pregnancy that exceeds 42 complete weeks (292 days) from the first day of the last menstrual period. The foetal femur length (FFL) measurement is used as an USG indicator of foetal growth. The other growth parameters measured are Biparietal diameter(BPD), Head circumference(HC), Abdominal circumference(AC) etc. to determine foetal growth and to assign sonographic gestational age to the foetus and to find out growth restriction. The foetal femur length in the last trimester of pregnancy beyond 42 weeks gestational age may be 8 cm. The table for measurement of femur length (Hadlock *et al.*, 1982) describes the maximum FFL of 7.9 cm at menstrual age of 40.4 wks. It is rare to have measurement of foetal femur length more than 8 cm. Post-maturity in anencephaly is known to be associated. In anencephaly, delay in onset of labour is known to occur due to physical defects or absence of endocrine glands, the pituitary and the suprarenal whose hormones have a definite effect on the parturient uterus. This case is being reported because the pregnancy prolonged to 11 months (326 days), the longest foetal femur measurement and the newborn female survived for a month after delivery by C-section.

Keywords: Anencephaly, Post-maturity, Foetal Femur Length, USG in Foetal Anomaly

CASES

The patient A.L., W/O L.L., aged 23 years, a primigravida, had the first day of LMP on 05/08/2013 complained of delay in delivery after 11 months of conception. The LMP age assigned to her was 46.5 weeks. No H/O abortion in the past.

General examination & systemic examination were normal. Per abdomen examination revealed full term uterus and the presence of foetal heart.

Per speculum revealed normal healthy cervix with no evidence of dilatation. External os was closed.

Haemoglobin was 10 g/dl. TLC, DLC, platelet count and coagulation profile was normal. Blood group was 'A' positive. HIV 1/2 was non-reactive.

Hbs AG was non-reactive. Random blood sugar was 77 mg%. Blood urea & serum creatinine were normal.

Urine examination was normal.

USG done for the first time at that stage of pregnancy (Fig1) revealed a single live foetus in cephalic position having average Gestational age (GA) 31.1 weeks, expected foetal weight (EFW) was 2616 grams +150 grams. Foetal heart rate (FHR) was 141/minute and regular.

Moderate poly-hydramnios was present. Placenta was located in anterior uterine wall with grade III maturation having dense calcifications. Placenta previa was not present. Foetal head was not visualised, hence BPD could not be measured.

Foetal face & bulging foetal eyes were visualised. The foetal femur length measured 8.4 cm corresponding to <42 weeks GA. AC was 29.4 cm = 33.3 weeks GA.

Case Report

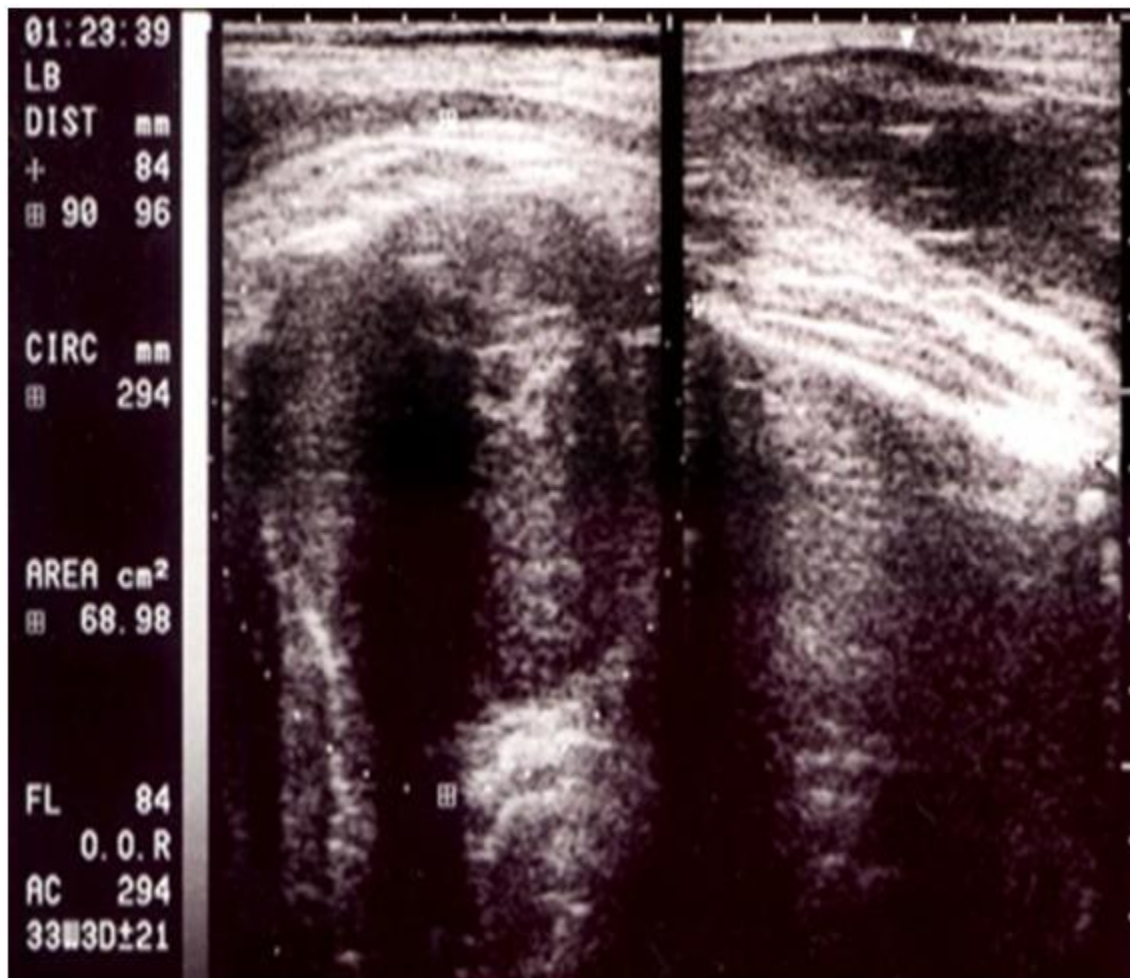


Figure 1: Measurement of Abdominal Circumference & Femur length

DISCUSSION

The incidence of anencephaly has been described to be 1:1000 and the female to male ratio being 4:1. Anencephaly is the most severe form of cranial neural tube defect (NTD). It is characterised by absence of cranial vault as well as the absence of cortical tissue. Brain stem & cerebellum may be present. Abnormalities associated may be spina bifida (especially cervical), congenital heart defect, cleft lip/cleft palate, diaphragmatic hernia, spinal dysraphism, skeletal anomalies (club feet), GI abnormalities such as omphalocele and hydronephrosis. Anencephaly is incompatible with life and the recurrence risk in future pregnancies is about 2.5% (Goldstein *et al.*, 1988).

Anencephaly results from a failure of closure of antral end of neural tube which is expected to occur approximately 24 days of foetal life and the sacral end closes around days 27 to 29 (6 weeks GA). Therefore, the two most common neural tube defects anomalies are anencephaly and lumbo-sacral spina bifida (myelomeningocele) (Romero *et al.*, 1988).

USG has an accuracy of 100% at 14 weeks gestation. No tissue is found above the orbits and the calvarium is absent. Parts of occipital bone and midbrain may be present.

A “frog’s” eye or ‘Mickey mouse’ appearance may be seen due to absent cranial bone/brain and bulging orbits. Eyes although appear normal structurally but may have no connection to the brain centrally.

Polyhydramnios due to impaired swallowing is present in up to 50% of cases and usually develop in the late 2nd trimester. The morphological spectrum of anencephaly varies from merocrania (mildest form) to holocrania (severest form) (Percy, 2005).

Case Report

In holocrania, there is absence of most or all the cranium vault above foramen magnum.

In merocrania, there is partial or complete median cranial defect with ectopia of the brain. The foramen magnum is normal and there is no cervical lordosis. Merocrania does not have skin covering the ectopic brain which enables one to differentiate it from cephalocele.

Anencephaly has to be differentiated from amniotic band syndrome if band goes through head and severe microcephaly. Anencephaly should not be confused with hydranencephaly in which the cranial vault is present and the absence of cerebral tissue is due to anterior vascular insult (Percy, 2005).

MSAFP are highly elevated (x2.25 Mom). Of all the NTDs anencephaly usually gives the highest elevation of MSAFP (Harrison *et al.*, 1990).

The literature describes anencephaly with post maturity beyond 42 weeks, 44 weeks & 46 weeks. Post-maturity in anencephaly is known to be associated. In anencephaly, delay in onset of labour is known to occur due to physical defects or absence of endocrine glands, the pituitary and the suprarenal whose hormones have a definite effect on the parturient uterus (Theron, 1945). However, there is no mention of the measurement of femur length since the facility of USG was not available at that time.

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