

ViewPoint 6

GE Healthcare

**Requesting Provider:**

Albert Walsh, MD
West End OB-GYN
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Kokimo IN 46901

WH GE-DEMO

DOB: 2/15/1988, 31 years
MRN: 458321
Exam Date: 11/5/2019
Report finalized

Detailed Ultrasound with Fetal Echocardiography

Indication

Diabetes Mellitus, Controlled by Oral Hypoglycemic Drugs
Fetal Renal Anomaly

History

General History Blood group: 0, **Rh negative**
OB History Gravida 3. Para 1

Maternal Assessment

Physical Exam Height 163 cm, 5 ft 4 in. Initial weight 86 kg, 190 lb. Initial BMI 32.61 kg/m²

Pregnancy

Singleton pregnancy. Number of fetuses: 1

Dating

	Date	Details	Gest. age	EDD
LMP	6/8/2019		21 w + 3 d	3/14/2020
U/S	11/5/2019	based upon AC, BPD, Femur, HC	21 w + 5 d	3/12/2020
Assigned dating	based on the LMP, selected on 08/12/2019		21 w + 3 d	3/14/2020

Fetal Biometry

BPD	50.0 mm	21w 1d	36%	Hadlock
OFD	64.0 mm	21w 5d	62%	
HC	179.7 mm	20w 3d	7%	Hadlock
Nuchal fold	4.0 mm			
AC	180.0 mm	22w 6d	85%	Hadlock
Femur	38.0 mm	22w 1d	66%	Hadlock
HC / AC	1.00			

Fetal Weight Calculation:

EFW	490 g	84%	Hadlock
EFW (lb,oz)	1 lb 1 oz		

Head / Face / Neck Biometry:

Cephalic index	0.78	44%	Nicolaides
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Extremities / Bony Struc Biometry:

FL / HC	0.21		
FL / AC	0.21		

General Evaluation

Cardiac activity present. FHR 143 bpm. **Fetal movements:** visualized. **Presentation:** cephalic

Placenta: Placental site: anterior. Placental edge-to-cervical os distance 10 mm

Umbilical cord: Cord vessels: 3 vessel cord. Insertion site: normal placental insertion

Amniotic fluid: Amount of AF: normal. MVP 5.0 cm

Fetal Anatomy

The following structures appear abnormal:

Abdomen Left kidney: multicystic dysplasia.

The following structures appear normal:

Head / Neck Cranium. Head size. Head shape. Right lateral ventricle. Left lateral ventricle. Choroid plexus. Midline falx. Cavum septi pellucidi. Cerebellum. Cisterna magna. Parenchyma. Posterior fossa. Cerebellar lobes. Vermis. Neck. Nuchal fold.

Face Lips. Profile. Nose. Maxilla. Mandible. Lens.

Heart / Thorax 4-chamber view. RVOT view. LVOT view. 3-vessel view. 3-vessel-trachea view. Right lung. Left lung. Diaphragm. Ribs.

Abdomen Abdominal wall. Cord insertion. Stomach: left-sided, left-sided. Right kidney. Bladder. Right adrenal gland. Left adrenal gland. Liver. Bowel. Small bowel. Large bowel.

Spine Cervical spine. Thoracic spine. Lumbar spine. Sacral spine.

Extremities / Skeleton Arms. Hands. Right arm. Right upper arm. Right forearm. Right hand. Right fingers. Left arm. Left upper arm. Left forearm. Left hand. Left fingers. Legs. Feet. Right leg. Right upper leg. Right lower leg. Right foot. Right toes. Left leg. Left upper leg. Left lower leg. Left foot. Left toes. Position of feet.

Fetal Echocardiogram

Cardiac axis	normal		
4-chamber view	normal		
LVOT view	normal		
RVOT view	normal		
3-vessel view	normal		
3-vessel-trachea view	normal		
High short axis view	normal		
Low short axis view	normal		
Aortic arch view	normal		
Ductal arch view	normal		
SVC	normal		
IVC	normal		
Venous-atrial connections	normal		
AV connections	normal		
VA connections	normal		
Pulmonary veins	normal		
Atria	normal		
Atrial septum	normal		
Foramen ovale	normal		
Ventricles	normal		
Ventricular septum	normal		
Tricuspid valve	normal		
Mitral valve	normal		
Pulmonary valve	normal		
Aortic valve	normal		
Cross-over gr. arteries	normal		
Main PA	normal		
Echogenic focus	yes		
Pericardial effusion	no		
Color Doppler (Qualitatively):			
4-chamber view diast	normal		
LVOT view	normal		
RVOT view	normal		
3-vessel view	normal		
3-vessel - trachea view	normal		
Valvular regurgitation	no		
IVC inflow into RA	normal	Flow in pulmonary arteries	normal
SVC inflow into RA	normal	Flow in ductus arteriosus	normal
Pulm. veins inflow into LA	normal	Flow in aortic arch	normal
Flow through foramen ovale	right-left shunt (normal)	Flow in brachioceph. arteries	normal
		Flow in descending aorta	normal
Tricuspid valve flow	no regurgitation seen	Flow in ductus venosus	normal
Mitral valve flow	no regurgitation seen	Flow in the umbilical vein	normal
Ventricular septum	normal	Flow in the umbilical arteries	normal
RVOT / Pulmonary valve flow	normal		
LVOT / Aortic valve flow	normal		

Cardiac Biometry:

RV width diast	7.0 mm	22%	Tan
LV width diast	6.0 mm	10%	Tan
RV inlet	3.0 mm		
LV inlet	2.0 mm		
TV annulus diast	5.0 mm		
PV annulus syst	3.0 mm		
MV annulus diast	4.0 mm		
AoV annulus syst	1.0 mm		
MV annulus diast / TV annulus diast	0.80		
AoV annulus syst / PV annulus syst	0.33		

Heart Z-Scores:

		Z- FL	Z- BPD	Z- GA	Z- EFW	Zscore by
RV width diast	7.0 mm	-1.09	-0.28	-0.55		Schneider
LV width diast	6.0 mm	-1.93	-0.98	-1.26		Schneider
RV inlet	3.0 mm	-7.10	-6.45	-7.42	-6.89	Krishnan
LV inlet	2.0 mm	-17.31	-15.20	-14.79		Schneider
TV annulus diast	5.0 mm	-2.05	-1.14	-1.45		Schneider
MV annulus diast	4.0 mm	-4.14	-3.05	-3.25		Schneider
PV annulus syst	3.0 mm	-2.85	-1.74	-1.93		Schneider
AoV annulus syst	1.0 mm	-11.12	-8.62	-9.00		Schneider

Cardiac Doppler:

Superior Vena Cava: normal

Tricuspid Valve: normal

Mitral Valve: normal

Right Ventricular Outflow Tract: normal

Left Ventricular Outflow Tract: normal

Fetal Doppler

Umbilical Artery: normal					
PI	1.20		39%		Baschat
Mid Cerebral Artery: normal					
PI	2.00		78%		Bahlmann
PS	45.00 cm/s				
PS	1.65 MoM				
CPR PI	1.67		76%		Baschat
Ductus Venosus: normal					
Umbilical Vein: normal					
Inferior Vena Cava: normal					

Maternal Structures

Uterus	Fibroid(s) Size 32 mm x 33 mm x 32 mm. Mean 32.3 mm. Vol 17.7 cm ³ . Anterior. Intramural. Homogeneous structure
Cervix	normal Approach - Transvaginal: Cervical length 32.0 mm
Right Ovary	Normal
Left Ovary	Normal

Impression

Thank you for allowing me to participate in the care of WH GE-DEMO for Diabetes Mellitus, Controlled by Oral Hypoglycemic Drugs; Fetal Renal Anomaly.

Assigned gestational age is 21w 3d and corresponds to an EDD of 03/14/2020. Today's biometry averages 21w5d.

Fetal anatomy survey reveals left multicystic renal dysplasia on today's study with renal enlargement and cortical cysts.

Echogenicity is normal at this time. An isolated left ventricular echogenic focus is also seen.

No other fetal anomalies are seen within the limits of ultrasound at this gestational age.

The placenta is anterior and measures 10 mm from the internal os.

Amniotic fluid volume is normal.

Consultation

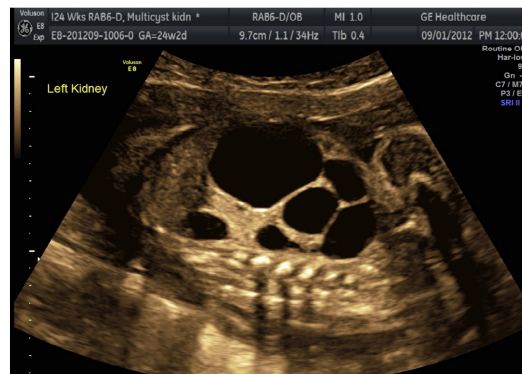
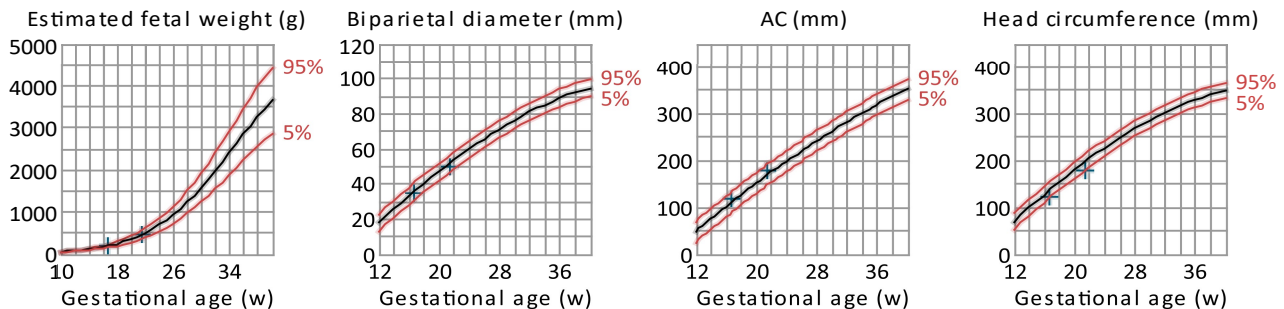
Fetal imaging denotes a left kidney with multicystic dysplastic changes. The left kidney, bladder and amniotic fluid are normal appearing, suggesting normal left kidney function. There is no apparent ureteral dilation on either side. There are no other fetal abnormalities.

MCDK is generally thought to be a sporadic condition. Families with autosomal dominant inheritance have been described but defects are usually bilateral. The differential for an enlarged echogenic kidney may also occur as part of a congenital syndrome with Meckel-Gruber being the most likely. However, there are no other ultrasound findings consistent with Meckel-Gruber (encephalocele, microcephaly, polydactyly). Aneuploidy such as Trisomy 13 may also present in this fashion but is rarely an isolated finding. There is no family history of renal disease on either side. I counseled the patient and her husband about the findings, the benefit of reassessment, the increased potential that the right kidney is non-functional, and that neonatal evaluation take place by a pediatric nephrologist. In general serial follow up for AFV and BPP is recommended. The neonatal prognosis will depend upon severity of disease in that kidney and possible development of hypertension. Close monitoring is generally recommended with only few patients requiring nephrectomy.

Follow-up

Recommendations:

- Return for growth, amniotic fluid volume assessment, and renal evaluation.
- Pediatric Urology/nephrology consultation, which we will arrange.
- Fetal echocardiogram at 22 – 24 weeks.
- Serial ultrasound in third trimester to assess fluid and growth.
- Cesarean delivery should be reserved for usual obstetric indications.



Alan Jeffries, MD
Reading physician
Electronically signed by Alan Jeffries, MD at 9:50 AM on 11/10/2020

Lisa Brown, RDMS
Sonographer

CC: Daniel Burns, MD, Pediatric Nephrology Associates, St. Louis