AIC
Quality Medical Imaging
An ISO 9001 : 2015 Certified Centre
ADISHAKTI IMAGING CENTRE
आदिशक्ति इमेजिंग सेंटर

NFMC
Supporting Feto-Maternal Care
An ISO 9001 : 2015 Certified Centre
NAGPUR FETAL MEDICINE CENTRE
नागपुर फिटल मेडीसीन सेंटर

Dr. JITENDRA SAHU
MBBS, DMRD, IIMFM, ACFRG, BCFRG, DIDSU
Fellowship in Fetal Medicine, Barcelona (Spain)
Consultant Fetal Medicine
Consultant Radiologist and Sonologist
Fetal Medicine Foundation (U.K.) Certified
Certified Fetal Echocardiologist
MMC Reg. No. 083537
FMF ID No. 61485

Patient name	Mrs. BHAGYASHREE SUNIL AGARKAR	Age/Sex	31 Years / Female
Patient ID	E31922-24-02-12-7	Visit No	1
Referred by	Dr. RAMANAND SOMANI MBBS, FCGP	Visit Date	12/02/2024
LMP Date	12/11/2023 LMP EDD: 18/08/2024		

USG OBS - FIRST TRIMISTER ANOMALY & NUCHAL SCAN

Real time B-mode ultrasonography of gravid uterus done.

Route: Transabdominal

Single intrauterine gestation

LMP GA : 13 Wks 1 Day **USG GA : 13 Wks 1 Day**

Maternal

Cervix measured 4.00 cms in length.
Internal os is closed.
Both uterine artery screening done, shows normal spectral pattern.
Mean uterine artery PI is normal.

Right uterine PI : 2.21.
Left uterine PI : 1.47.
Mean PI : 1.84

Fetus

Survey

Placenta - Developing Anteriorly

Liquor - Normal

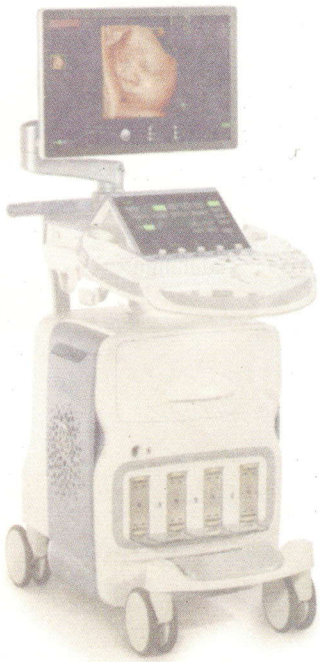
Umbilical cord - Two arteries and one vein

Fetal activity present

Cardiac activity present
Fetal heart rate - 170 bpm

Biometry(Hadlock)

BPD 21.2 mm 13W 2D	HC 81 mm 13W 3D	AC 68.7 mm 13W 3D	FL 10.7 mm 13W 1D
5% 50% 95%	5% 50% 95%	5% 50% 95%	5% 50% 95%



CRL - 70 mm(13W 1D)

IT - 2.7 mm

BSOB ratio - 0.42 mm

Aneuploidy Markers

Nasal Bone : 3.4 mm - Normal
Nuchal translucency : 2.3 mm Present.
Ductus venosus : Normal flow.
Tricuspid regurgitation : Absent.

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Fetal Anatomy

Head

Intact Cranial vault seen. Mid line falx seen. Butterfly sign present. Visualised intracranial structures appear normal.

Neck

Neck appeared normal.No e/o cystic hygroma noted.

Spine

Spine appeared normal. Vertebrae appear normal. Intact overlying skin noted. No e/o open neural tube defect

Face

Face profile appear normal. Maxilla normal length. FMF angle normal. Mandibular gap sign seen. Premaxillary nasal traingle well seen. Both orbits well seen.

Thorax

Bilateral symmetrical lung fields seen. No effusion / masses.

Heart

Four chambered Heart noted. Symmetrical chambers noted. on colour flow two ventricular inflow tracts noted.Two outflow tracts (tick sign / V sign) noted.

Abdomen

Abdominal situs appeared normal. Abdominal wall intact, No omphalocele / gastrochisis notes.Stomach bubble seen, liver appear normal.

KUB

Both kidneys and bladder appeared normal.

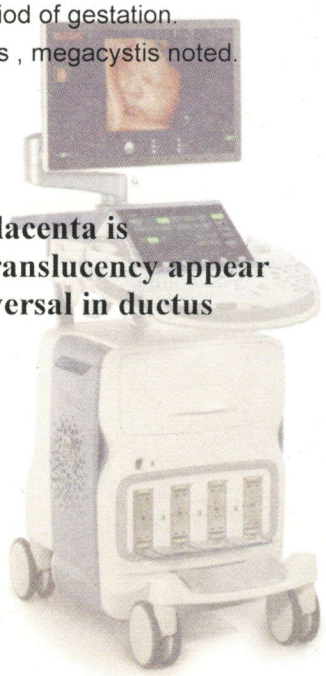
Extremities

All four limbs well visualised . All visualised long bones well visualiused, appear normal for the period of gestation.

No major marker of aneuploidy viz. Holoprosencephaly, Atrioventricular septal defect, Examphalos , megacystis noted.

Fetal doppler

DuctusVenosus PI : 1.22



Impression

A single live early intrauterine gestation of average maturity 13 wks 1 days. Placenta is developing anteriorly. No obvious congenital anomaly seen for date. Nuchal translucency appear normal (83 th percentile for CRL as per FMF calculator). No TR, No Flow reversal in ductus venosus. Normal nasal bone seen.

Risk for developing FGR before 37 weeks	: 0.5 % (1 in 199)
Preeclampsia risk from only history < 37 weeks	: 1 in 105
Preeclampsia risk from history plus MAP, UTPI < 37 weeks	: 1 in 233

Suggested :

1) NIPT / Double marker test for aneuploidy risk calculation.
2) Anomaly scan study between 18-22 weeks

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(I, DR.JITENDRA SAHU DECLARE THAT WHILE CONDUCTING ULTRASONOGRAPHY OF THIS PATIENT I HAVE NEITHER DETECTED NOR DISCLOSED THE SEX OF HER FETUS TO ANYBODY IN ANY MANNER)

Note - Not All Fetal Anomalies can be detected on an Ultrasound Scan

DR. JITENDRA SAHU
RADIOLOGIST & FETAL MEDICINE CONSULTANT

Disclaimer

Disclaimer for First trimester NT scan

Patient's identity is based on her own declaration.

This investigation has been done as per request of the referring doctor.

Diagnosis of Ultrasonography is based on various echoes and shadows produced by both normal & abnormal tissues. Variety of disease process may produce similar echopattern or shadows.

Science of ultrasound, Ultrasonography machine and probe, all have their own limitations. Even the most sophisticated ultrasound machine can make error in interpreting echoes and has limitations in diagnosing lesions. Disparity in final diagnosis can occur due to technical pitfalls like False Positive and False Negative results. Hence, only the report should not be taken as final diagnosis but should be correlated clinically with /or other investigations. In case of disparity between report and clinical evaluation, second opinion is always advisable before commencing final treatment.

It must be noted that detailed fetal anatomy may not always be visible due to technical difficulties related to fetal position, amniotic fluid volume, fetal movements and maternal abdominal wall thickness.

Not all fetal anomalies can be detected at every examination.

All measurement including fetal weight is subject to statistical variations. Different author growth chart of same parameter varies and should be considered during interpretation of reports.

This scan is a comprehensive obstetric sonography scan and is not intended to guarantee the absence of birth defects or congenital anomalies. Not all birth defects are present during the pregnancy. If no abnormalities are found on scan, this is not a guarantee of a healthy child.

Objective for first trimester NT scan is to confirm the presence of a pregnancy, viability, numbers of embryos, dating, measurement of the NT and any other markers necessary for Aneuploidy screening and finally to give the patient an Aneuploidy risk assessment.

Tricuspid regurgitation is seen in 65% of trisomy 21 fetuses, 30% of trisomy 18 fetuses & in Less than 5% of chromosomally normal fetuses. TR is trivial if not associated with cardiac defects & TR is severe if associated with cardiac defects.

Ductus venousus flow reversal is seen in chromosomal anomalies, cardiac defects, twin twin transfusion syndrome in monochorionic twins

Following is the list of Detection rate of Anomalies at 11-13 weeks scan 1

Absent hand / foot	77%	Polydactyly	60%	Diaphragmatic hernia	50%
Lethal skeletal dysplasia	50%	Cleft palate	24%	Open spina bifida	14%
Ventriculomegaly	09 %				

Following is the list of of Anomalies cannot be diagnosed at 11-13 weeks scan 1

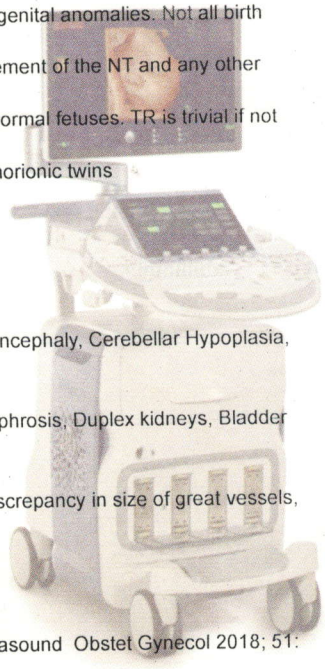
Neural tube, brain, face - Hemivertebtra, Microcephaly, Craniosynostosis, Agenesis of corpus callosum, Semilobar Holoprosencephaly, Cerebellar Hypoplasia, Vermian agenesis, Nasopharyngeal teratoma, Retrognathia

Lungs, Heart - Cystic adenamatoid malformation, Extralobar sequestration, Isolated VSD, Cardiac tumors

Abdominal, Renal - Duodenal atresia, Bowel obstruction, Renal agenesis - Bilateral , unilateral, Multicystic kidneys, Hydronephrosis, Duplex kidneys, Bladder exstrophy,

Other - Arthrogryposis, Talipes, Ectrodactyly

Following are False positive structural anomaly findings in 11-13 weeks scan 2 - Echogenic choroid plexus, Omphalocele, Discrepancy in size of great vessels, Megacystis, Intra abdominal cyst, Cleft Palate



References

1. First trimester ultrasound diagnosis of fetal abnormalities 1st edition, Alfred abuhamad, rabih chaoui.
2. Effectiveness of 12 - 13-week scan for early diagnosis of fetal congenital anomalies in the cell-free DNA era Ultrasound Obstet Gynecol 2018; 51: 463 - 469 Published online 4 March 2018 in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/uog.17487

Obstetrics Report

ADISHAKTI IMAGING CENTRE NFMC

Patient / Exam Information — Date of Exam: **12.02.2024**

Name	BHAGYASHREE SUNIL AGARKAR	LMP	12.11.2023	Gravida	1
		GA	13w1d	Para	0
DOB,Age	22.04.1992,31	EDD	18.08.2024	AB	0
Sex	Female	GA(AUA)	13w3d	Ectopic	
Patient ID	E31922-24-02-12-7	EDD(AUA)	16.08.2024	Fetus	1

Perf. Phys.	DR.JITENDRA SAHU	Ref. Phys.	DR.RAMANAND SOMANI	Indication

2D Measurements	AUA	Value	m1	m2	m3	Meth.	GP	GA
IT		2.20 mm	1.70	2.70		avg.		
BPD (Hadlock)	☑	2.12 cm	2.12			max	43.4%	13w3d
OFD (HC)		2.80 cm	2.80			avg.		
HC (Hadlock)	☑	8.10 cm	8.10			avg.	36.5%	13w3d
AC (Hadlock)	☑	6.87 cm	6.87			avg.	70.8%	13w3d
FL (Hadlock)	☑	1.07 cm	1.07			avg.	44.1%	13w1d
HL (Jeanty)	☐	1.07 cm	1.07			avg.	38.2%	12w5d
CRL (Hadlock)	☑	7.00 cm	7.00			avg.	49.9%	13w1d
NT		2.30 mm	1.90[1]	2.30[1]		max		
NBL (Sonek)		3.40 mm	3.16	3.40		max	58.7%	

EFW (Hadlock)	Value	Range	Age	Range	GP (Hadlock)
AC/BPD/FL/HC	74g	± 11g	13w0d		42.5%

2D Measurements	Value	m1	m2	m3	m4	m5	m6	Meth.
Cervix	4.09 cm	4.09						avg.

2D Calculations		Range
CI (BPD/OFD)	76%	(70 - 86%)
FL/AC	16%	(20 - 24%)
FL/BPD	50%	(GA: OOR)
FL/HC (Hadlock)	0.13	(GA: OOR)
HC/AC (Campbell)	1.18	(1.14 - 1.31)

Name: **BHAGYASHREE SUNIL AGARKAR** *Patient ID:* **E31922-24-02-12-7**

M-Mode Measurements	*Value*	*m1*	*m2*	*m3*	*m4*	*m5*	*m6*	*Meth.*
Fetal Heart Rate								
Ventricular FHR	**170 bpm**	**170**						**avg.**

Doppler Measurements	*Value*	*m1*	*m2*	*m3*	*m4*	*m5*	*m6*	*Meth.*
Left Uterine								
PS	**107.64 cm/s**	**107.64**						**max**
ED	**31.60 cm/s**	**31.60**						**max**
TAmax	**51.90 cm/s**	**51.90**						**max**
MD	**30.25 cm/s**	**30.25**						**max**
VTI	**30.77 cm**	**30.77**						**max**
RI	**0.71**	**0.71**						**avg.**
PI	**1.47**	**1.47**						**avg.**
S/D	**3.41**	**3.41**						**avg.**
HR	**102 bpm**	**102**						**max**
Right Uterine								
PS	**63.90 cm/s**	**63.90**						**max**
ED	**10.77 cm/s**	**10.77**						**max**
TAmax	**24.07 cm/s**	**24.07**						**max**
MD	**7.95 cm/s**	**7.95**						**max**
VTI	**13.67 cm**	**13.67**						**max**
RI	**0.83**	**0.83**						**avg.**
PI	**2.21**	**2.21**						**avg.**
S/D	**5.93**	**5.93**						**avg.**
HR	**104 bpm**	**104**						**max**
Tricuspid valve								
E-Wave	**26.27 cm/s**	**26.27**						**max**
A-Wave	**45.51 cm/s**	**45.51**						**max**
E/A	**0.58**	**0.58**						
Ductus Venosus								
S	**-27.21 cm/s**	**-30.17**	**-27.21**					**last**
TAmax	**-17.84 cm/s**	**-19.57**	**-17.84**					**last**
a	**-5.41 cm/s**	**-5.77**	**-5.41**					**last**
D	**-22.15 cm/s**	**-23.65**	**-22.15**					**last**
PI	**1.22**	**1.25**	**1.22**					**last**
S/a	**5.03**	**5.23**	**5.03**					**last**
a/S	**0.20**	**0.19**	**0.20**					**last**
PVIV	**0.98**	**1.03**	**0.98**					**last**

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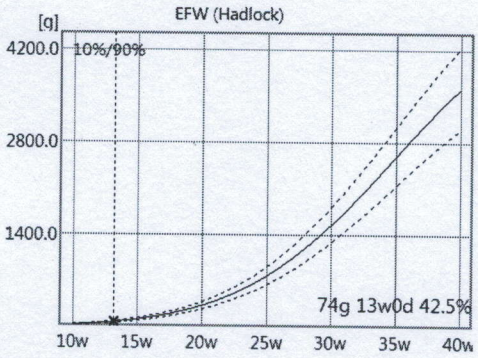
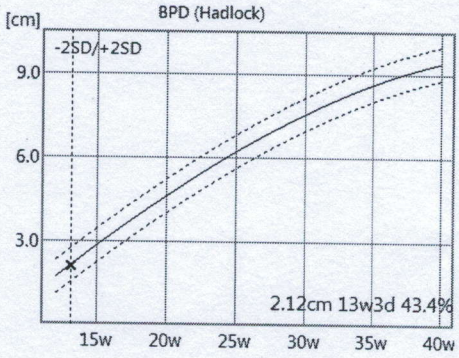
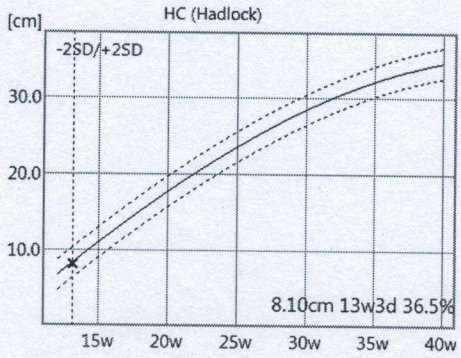
Doppler Measurements	Value	m1	m2	m3	m4	m5	m6	Meth.
Ductus Venosus								
PLI	**0.80**	**0.81**	**0.80**					**last**

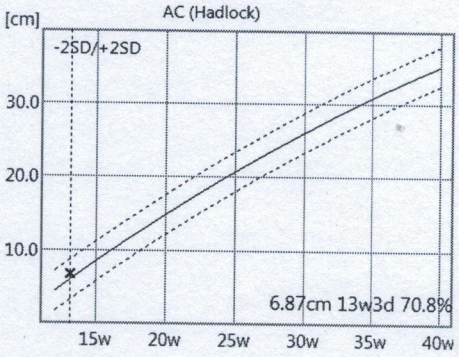
Graph — GA Reference: GA(LMP)

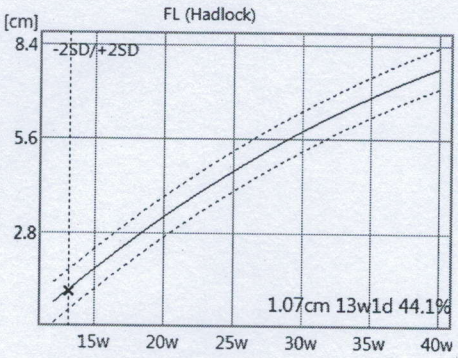
Fetus: A

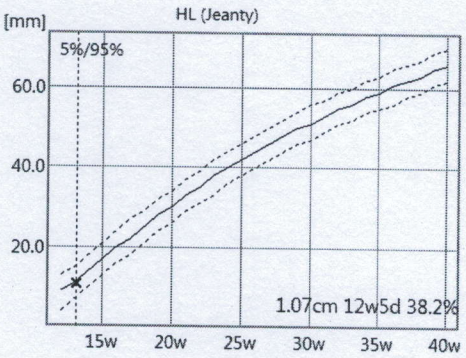












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Graph *GA Reference: GA(LMP)*

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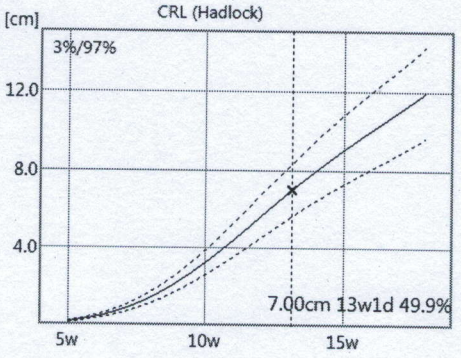

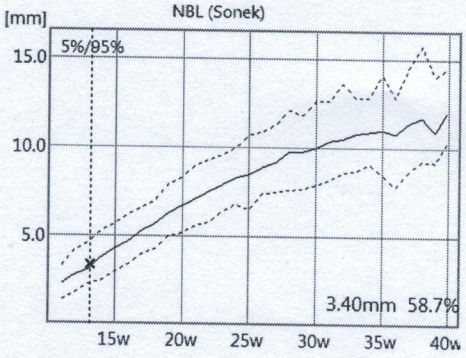

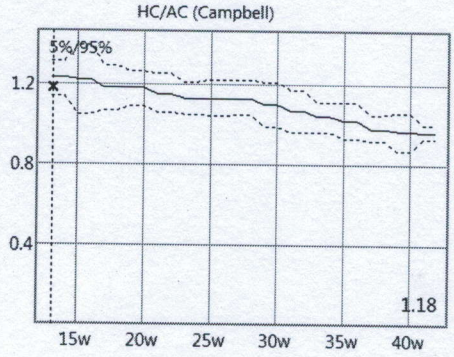

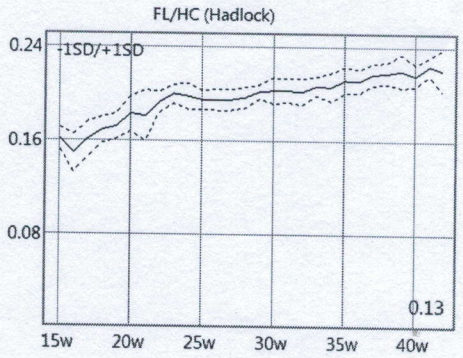

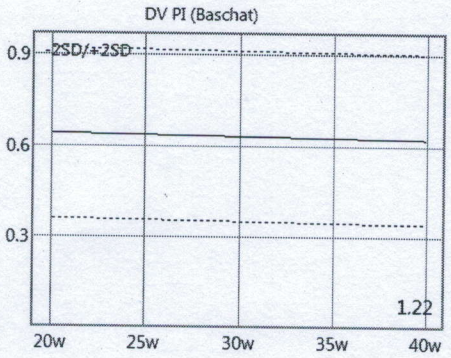

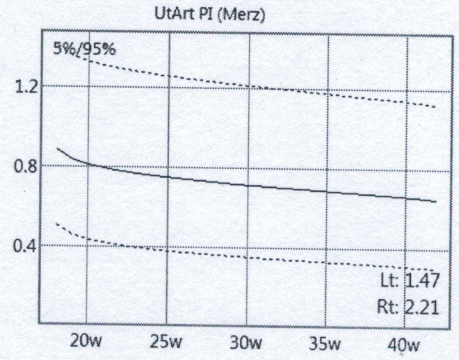

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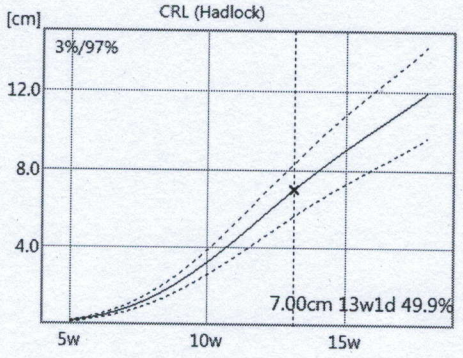

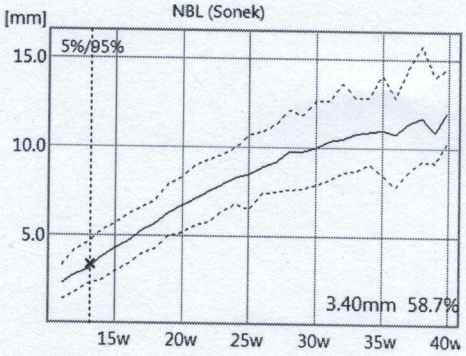

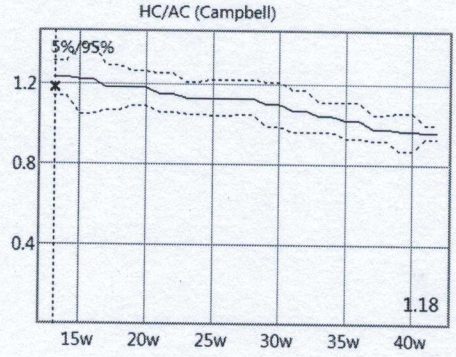

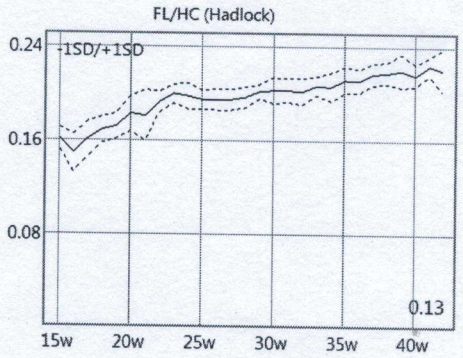

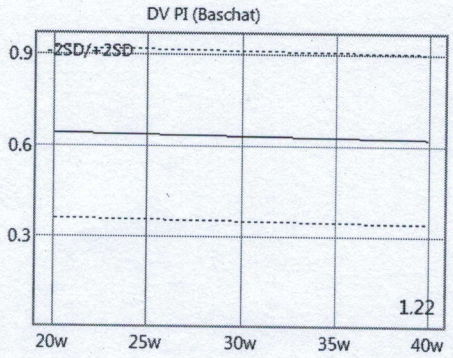

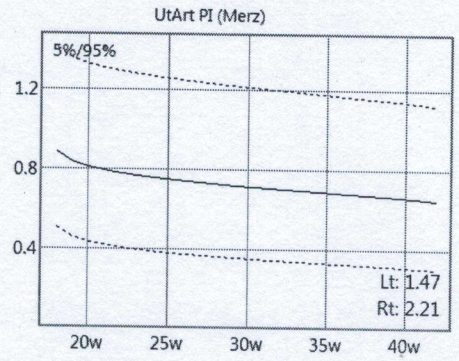

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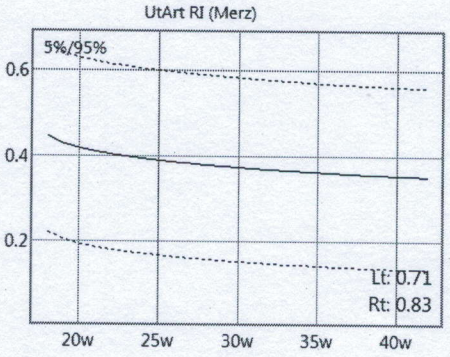
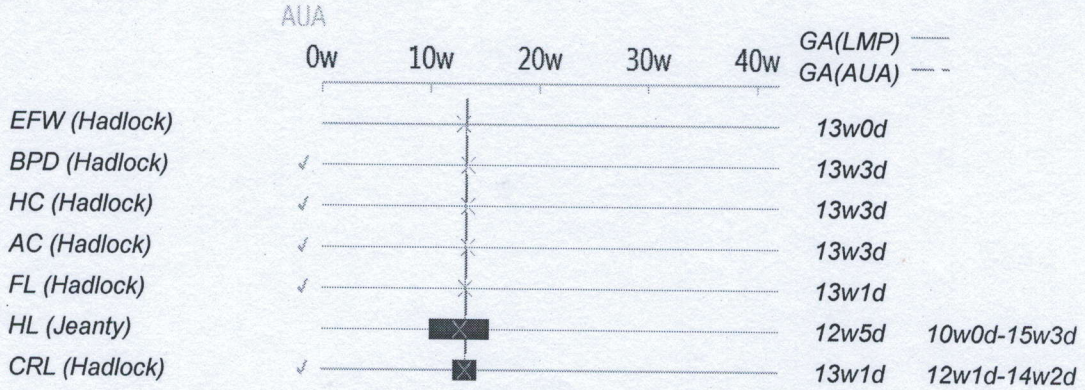
Fetus: A

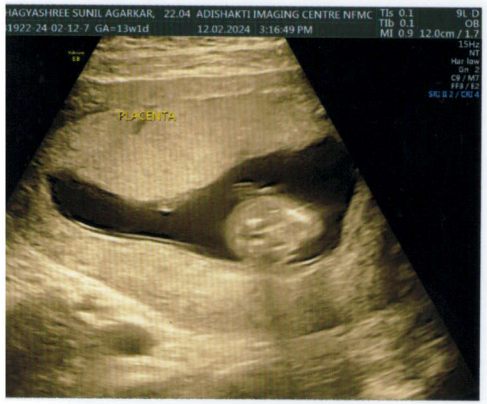


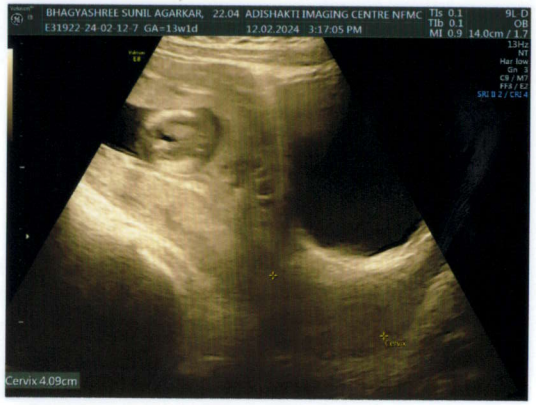
Bar Graph

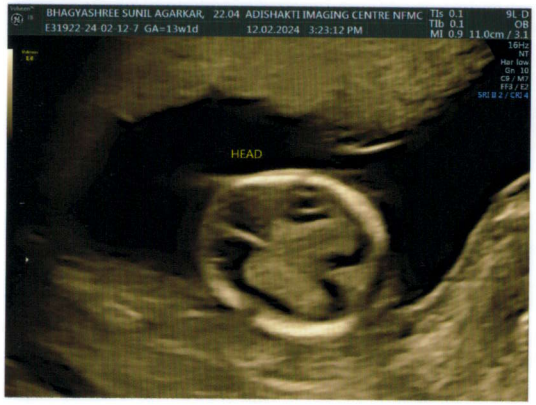


2D Generic	Value	m1	m2	m3	m4	m5	m6	Meth.
Dist.								
D	**0.47 cm**	**0.94**	**0.52**	**0.24**	**0.45**	**0.20**	**0.48**	**avg.**

Date: **12.02.2024** *Perf. Physician:* **DR.JITENDRA SAHU** *Sonographer:*


PLACENTA


Cervix 4.09cm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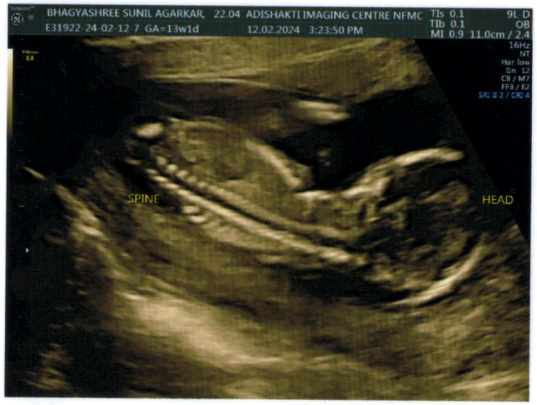
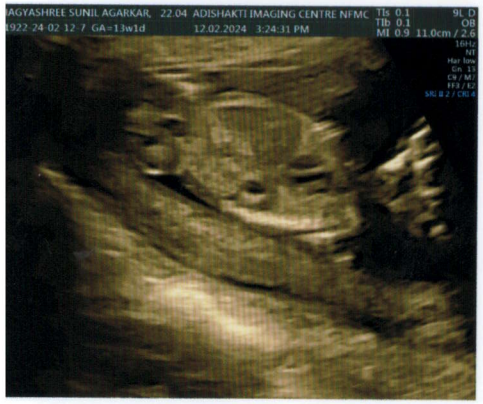
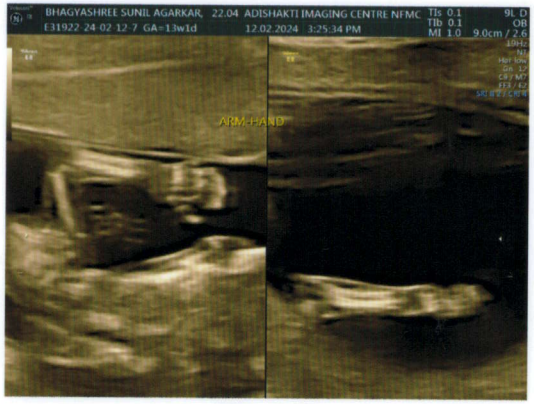
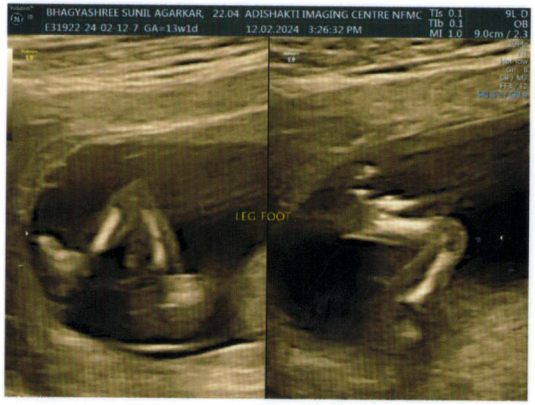
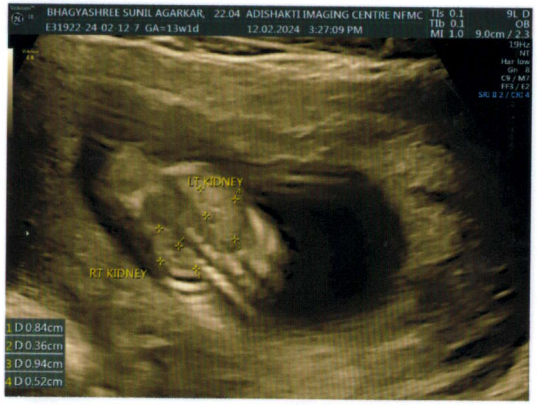
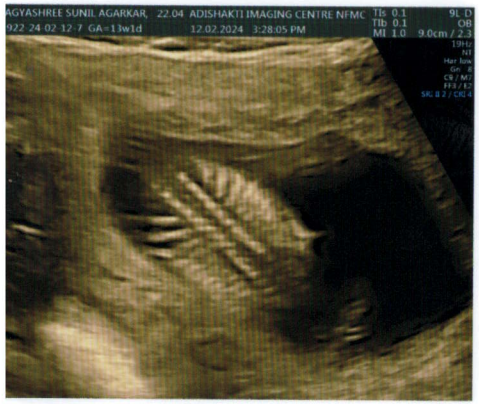

SPINE
HEAD

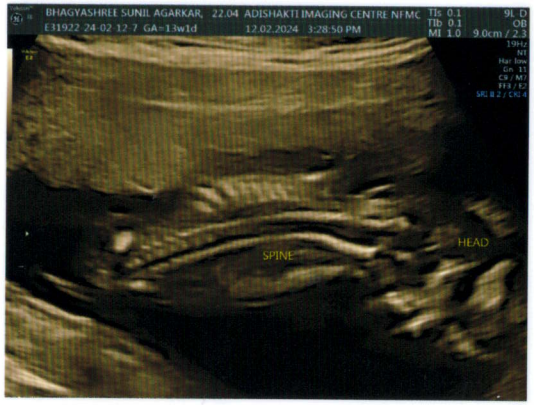


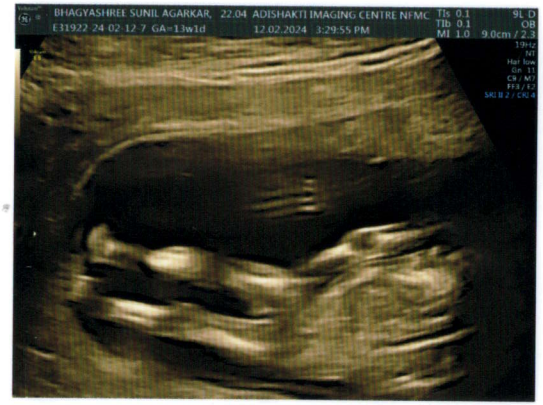

ARM-HAND

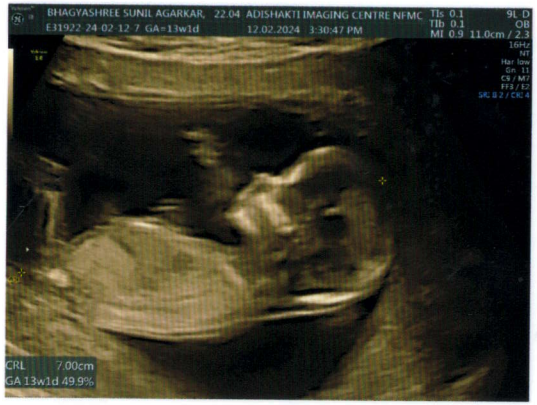

LEG-FOOT

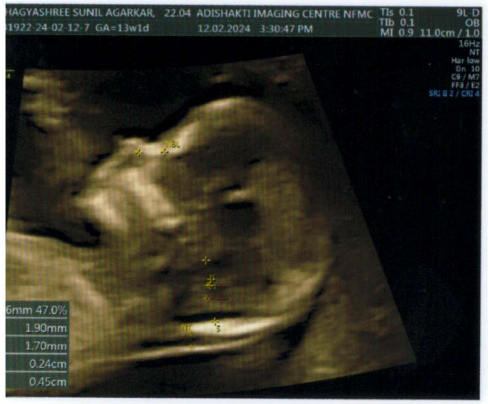

LT KIDNEY
RT KIDNEY
1 D 0.84cm
2 D 0.36cm
3 D 0.94cm
4 D 0.52cm

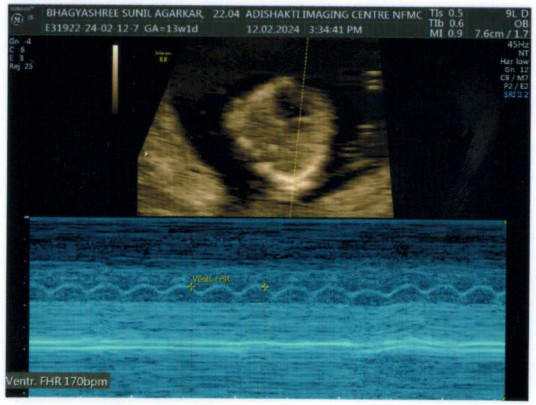


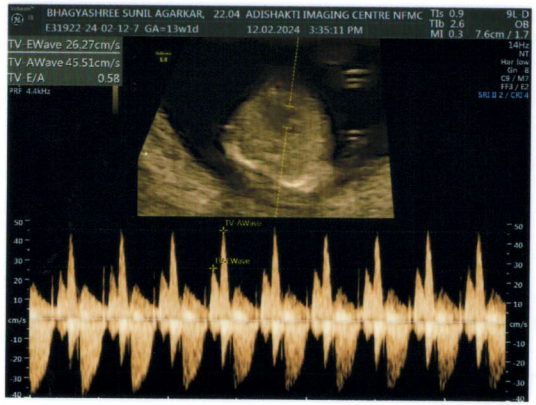

SPINE
HEAD

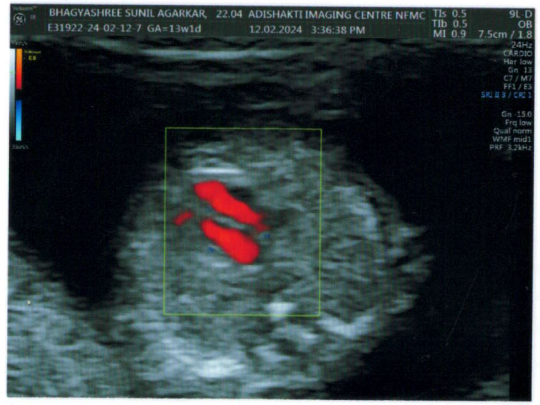


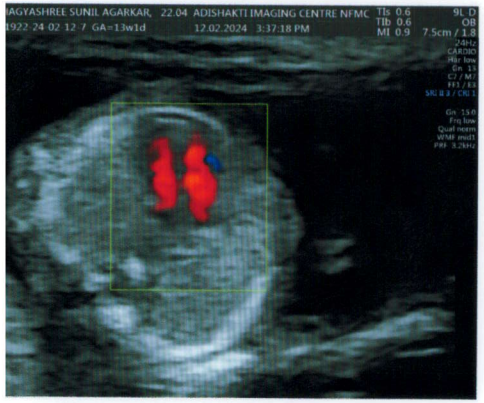

CRL 7.00cm
GA 13w1d 49.9%

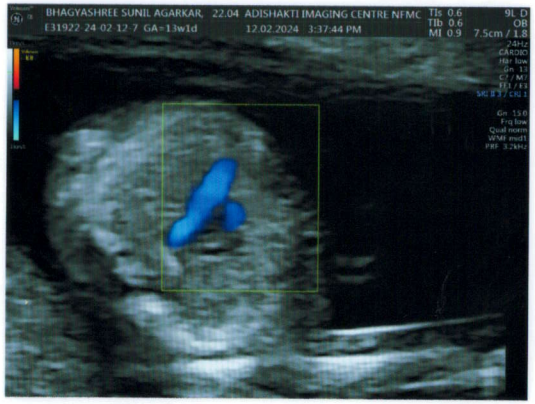

6mm 47.0%
1.90mm
1.70mm
0.24cm
0.45cm

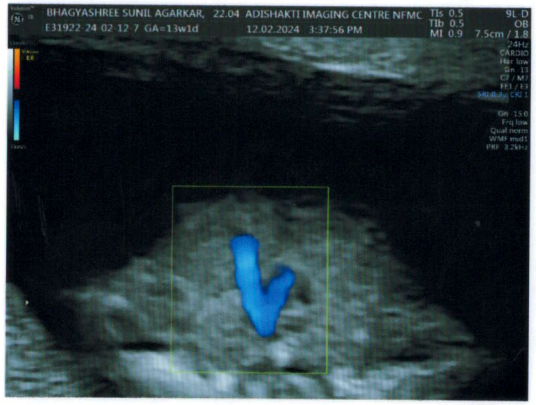

Ventr. FHR 170bpm

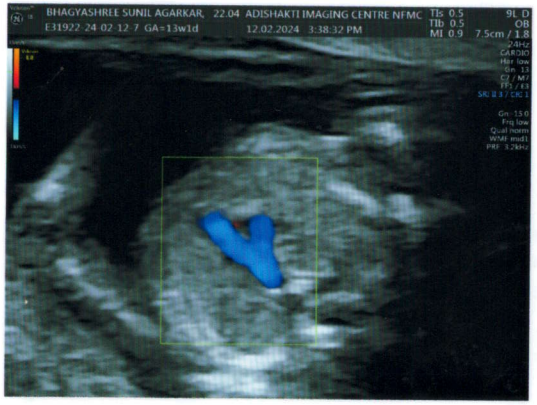

TV EWave 26.27cm/s
TV AWave 45.51cm/s
TV E/A 0.58
TV AWave
TV EWave

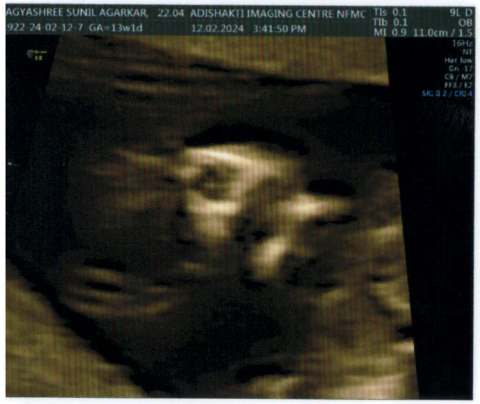


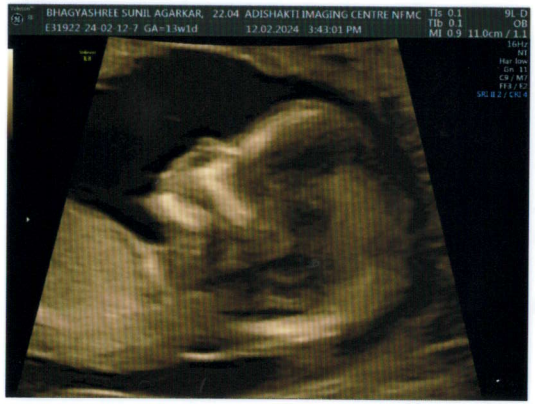


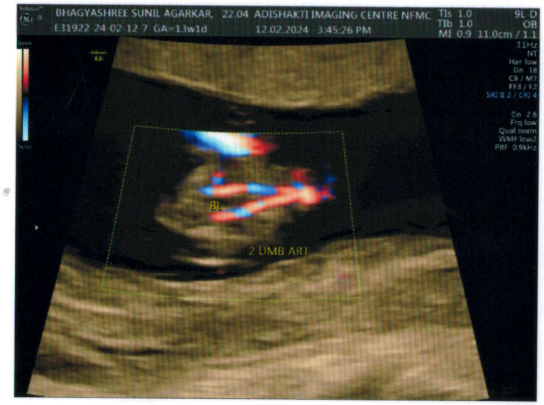


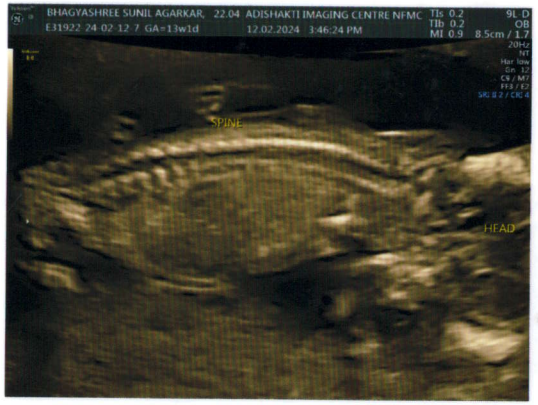


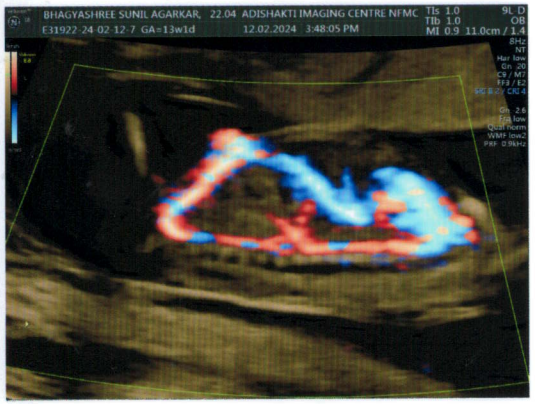


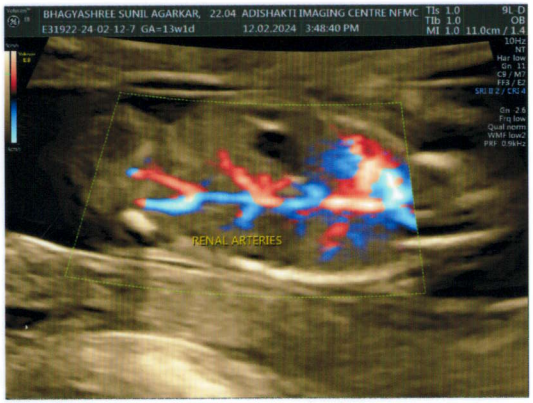





2 UMB ART


SPINE
HEAD


BHAGYASHREE SUNIL AGARKAR, 22.04 ADISHAKTI IMAGING CENTRE NFMC
E31922-24-02-12-7 GA=13w1d 12.02.2024 3:48:05 PM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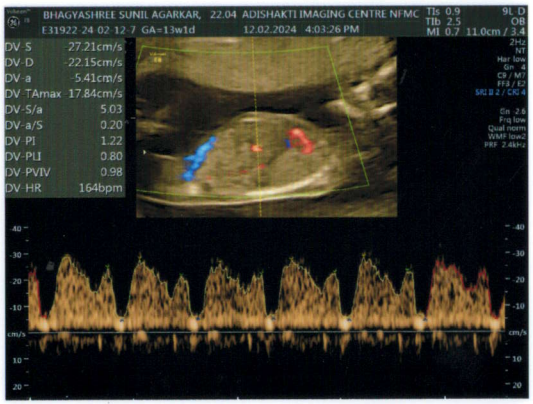
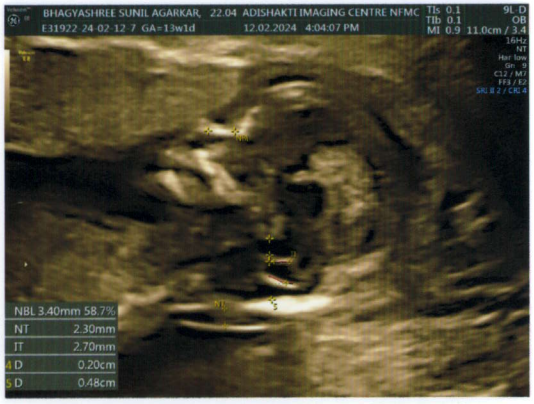
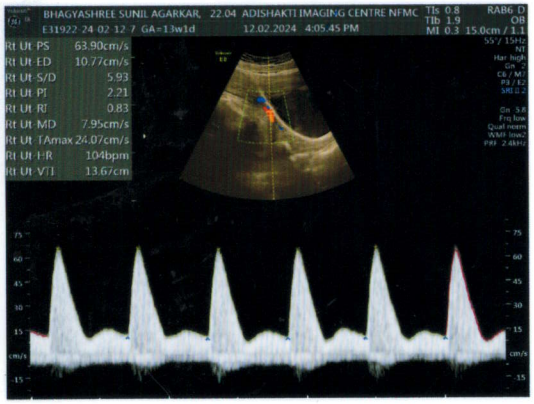
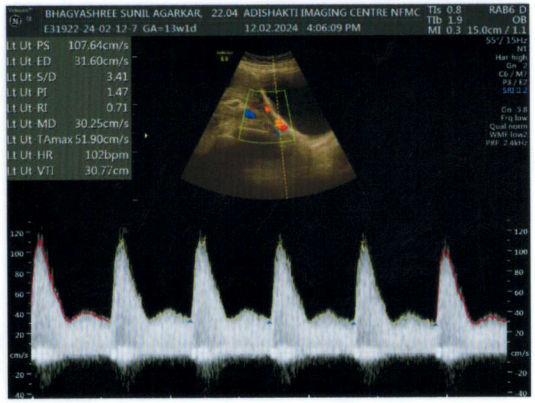
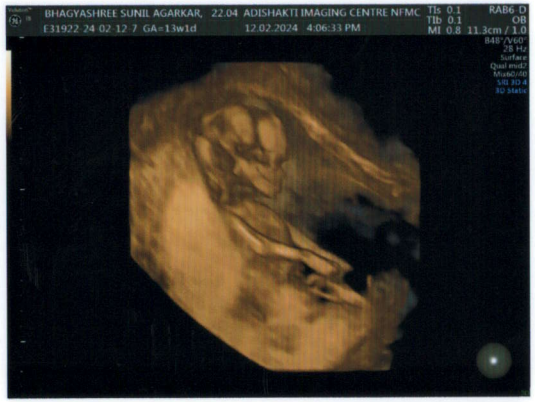
RENAL ARTERIES


BHAGYASHREE SUNIL AGARKAR, 22.04 ADISHAKTI IMAGING CENTRE NFMC
E31922-24-02-12-7 GA=13w1d 12.02.2024 4:03:26 PM
DV-S 27.21cm/s
DV-D 22.15cm/s
DV-a 5.41cm/s
DV-TAmax 17.84cm/s
DV-S/a 5.03
DV-a/S 0.20
DV-PI 1.22
DV-PLI 0.80
DV-PVIV 0.98
DV-HR 164bpm


BHAGYASHREE SUNIL AGARKAR, 22.04 ADISHAKTI IMAGING CENTRE NFMC
E31922-24-02-12-7 GA=13w1d 12.02.2024 4:04:07 PM
NBL 3.40mm 58.7%
NT 2.30mm
IT 2.70mm
4 D 0.20cm
5 D 0.48cm


BHAGYASHREE SUNIL AGARKAR, 22.04 ADISHAKTI IMAGING CENTRE NFMC
E31922-24-02-12-7 GA=13w1d 12.02.2024 4:05:45 PM
Rt Ut PS 63.90cm/s
Rt Ut ED 10.77cm/s
Rt Ut S/D 5.93
Rt Ut PI 2.21
Rt Ut RI 0.83
Rt Ut MD 7.95cm/s
Rt Ut TAmax 24.07cm/s
Rt Ut HR 104bpm
Rt Ut VTI 13.67cm


BHAGYASHREE SUNIL AGARKAR, 22.04 ADISHAKTI IMAGING CENTRE NFMC
E31922-24-02-12-7 GA=13w1d 12.02.2024 4:06:09 PM
Lt Ut PS 107.64cm/s
Lt Ut ED 31.60cm/s
Lt Ut S/D 3.41
Lt Ut PI 1.47
Lt Ut RI 0.71
Lt Ut MD 30.25cm/s
Lt Ut TAmax 51.90cm/s
Lt Ut HR 102bpm
Lt Ut VTI 30.77cm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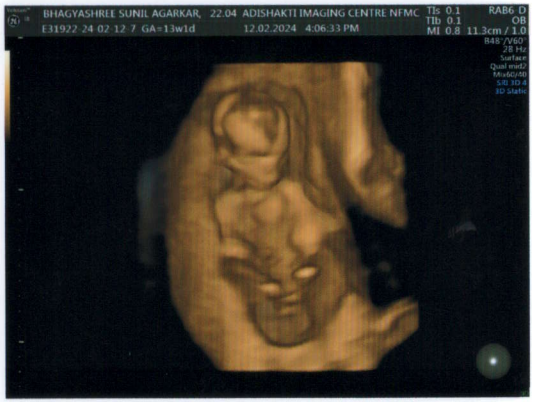
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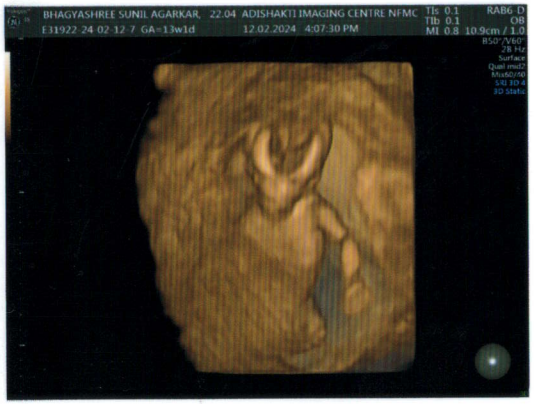
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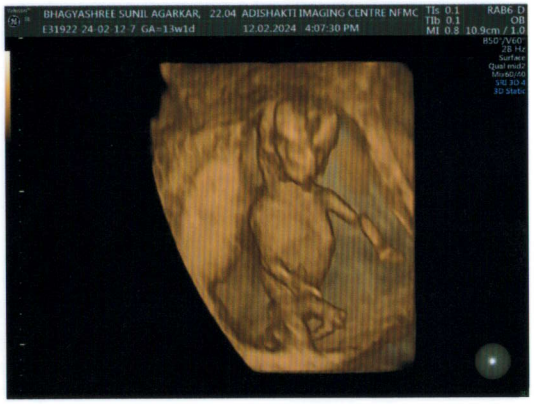
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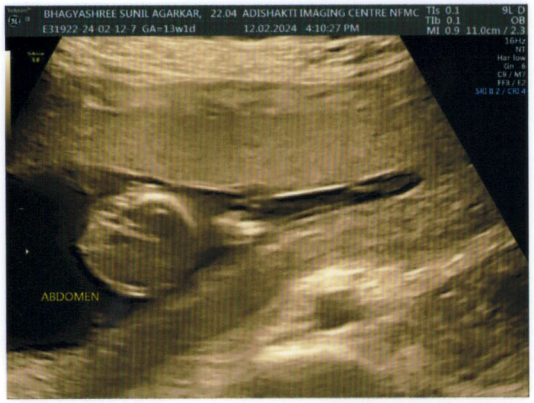
BHAGYASHREE SUNIL AGARKAR, 22.04 ADISHAKTI IMAGING CENTRE NFMC
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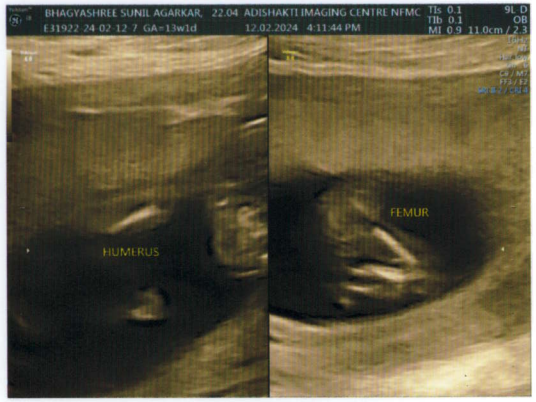
ABDOMEN


BHAGYASHREE SUNIL AGARKAR, 22.04 ADISHAKTI IMAGING CENTRE NFMC
E31922-24-02-12-7 GA=13w1d 12.02.2024 4:11:44 PM
HUMERUS
FEMUR