

**Overview:**

The targeted fetal anomaly scan involves detail evaluation of the fetus, ascertaining the presence or absence of any fetal abnormality. While conventional curvilinear transducers satisfy the basic requirements, they fail to provide a high resolution that is needed to visualise the fetal anatomy in detail. Linear transducers overcome this impediment by delivering a high resolution image, but at the cost of penetration. The newly introduced, Philips eL18-4 linear transducer, by virtue of its high frequency, PureWave technology, elevation focusing capability and the high number of elements (1920), is an excellent solution that offers both - better resolution and penetration.

The following cases depicts the utility of this transducer in diagnosing anomalies and delivering unprecedented clinical information

Evaluation of Fetal Anomalies with eLI8-4 PureWave linear array transducer



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About the author:

Dr Praveen is currently Director and Consultant, Abhishek's Institute Of Imageology, Hyderabad, India. His main clinical and research interests are in ultrasound - both diagnostic and interventional, with special interest in Obstetrics and Gynaecology. He has written a Chapter on Ultrasonography in Obstetrics & Gynaecology in Text Book of Diagnostic Radiology and Imaging, 1997, and also has various publications in National and International journals. His work has been published in the American Journal of Ultrasound and Journal of Clinical Ultrasound as well.

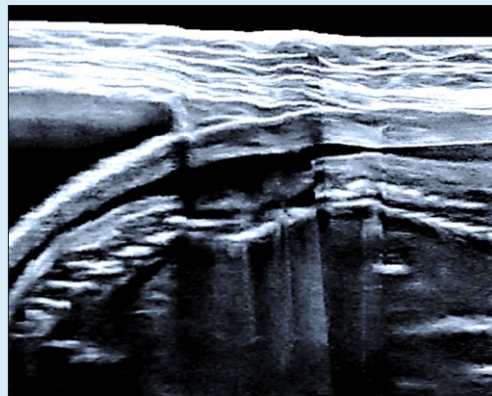
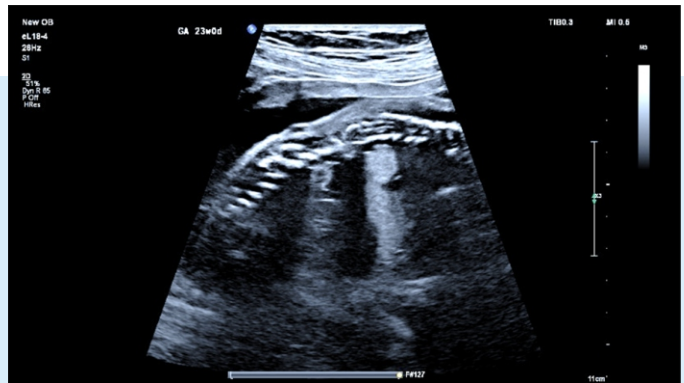
Case study I:

Clinical history: A 21 year old primigravida had come for a TIFFA scan. She had no previous bad obstetric history. No ultrasound scanning was done prior to this scan.

Ultrasound findings:

A detailed ultrasound evaluation of the fetus was done. The ultrasound evaluation revealed a single live intrauterine pregnancy of

23-24 weeks gestation. The liquor volume was found to be higher than that for the gestational age. The fetal spine showed multiple dorso-lumbar vertebral abnormalities. The scan with **eLI8-4 clearly demonstrated the failure of fusion of lamina at the lumbar sacral region, suggesting the diagnosis of spinal dysraphism**. There was no evidence of coning. Incidentally, presence of rocker bottom foot on left side was also diagnosed in this case.



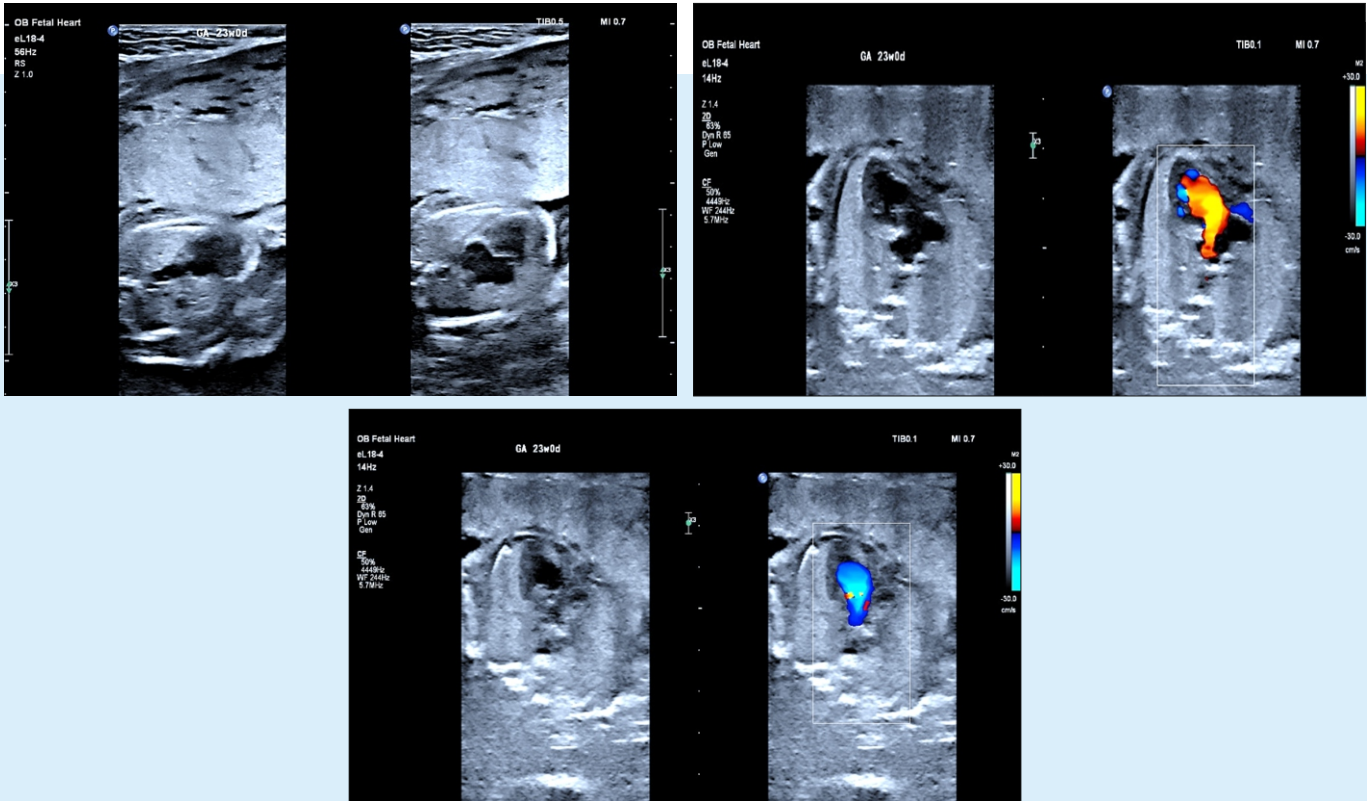
The eLI8-4 clearly demonstrates dorso-lumbar regional abnormalities.

Case study 2:

Clinical history: A 23 year old primigravida had been referred for a targeted fetal anomaly scanning.

Ultrasound findings:

The ultrasound revealed a single live intrauterine pregnancy in cephalic presentation and normal liquor. The detail fetal echocardiography done with **eL18-4 transducer showed multiple cardiac abnormalities**. There was evidence of a hypoplastic left ventricle, along with single A-V (atrio-ventricular) valve and a double-outlet right ventricle. Rest of the fetal evaluation was normal.



The eL18-4 confirms the single A-V valve and DORV abnormalities

Conclusion:

High frequency scanning in the evaluation of fetal abnormalities provides greater clinical information, however is marked by poor penetration, especially in high BMI/ obese patients. The eL18-4 transducer, with its PureWave technology and elevation focusing capabilities help overcome this limitation and delivers high image resolution, even in the far-field. As these cases have proved, eL18-4 is extremely useful in diagnosing vertebral and spinal cord deformities, and structural fetal cardiac defects with ease.

Acknowledgment : Clinical Cases of this edition of USCAN have been submitted by Philips Ultrasound Application Specialists, Anushree and Sreya working closely with Dr Praveen.

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Philips eL18-4 – PureWave High Frequency Linear Transducer with MicroFlow imaging

Superb imaging details for ObGyn scanning!

The eL18-4 transducer leverages a combination of Philips innovations in order to support a diverse range of clinical applications while delivering extraordinary imaging and depth-of-field performance

- Ultra-broadband
- PureWave crystal technology
- nSIGHT Imaging architecture
- Elevation focusing
- Integrated electromagnetic tracking (optional)



Unique features of eL18-4 transducer:

- ✓ High-frequency, Broadband Linear Transducer (Generates frequencies from 2 to 22 MHz)
- ✓ PureWave technology with Fine-Elevation focusing
- ✓ Superb 2D resolution with penetration
- ✓ Micro Flow Imaging – for low flow, low volume flow in fetal, placental, uterine and ovarian vasculature.
- ✓ Trapezoid view for extending FOV
- ✓ A.I.Breast Imaging (Anatomical Intelligence based)

MicroFlow Imaging

Philips MicroFlow Imaging (MFI), found on the eL18-4, is a proprietary imaging mode designed to detect low volume, low velocity blood flow found in fetal, placental, uterine and ovarian vasculature. New 2D image subtraction, 2D blending and side-by-side display options offer excellent visualization versatility



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