

## **The Hard Palate Sweep: a simple 2D sonographic method for diagnosing cleft palate**

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### **Objective**

The prenatal diagnosis of cleft palate remains challenging, especially when isolated. Numerous 2D and 3D methods have been proposed to assess the integrity of the fetal palate. We propose the "Hard Palate Sweep", a method that enables the direct demonstration of the entire fetal palate in a single sweep, avoiding acoustic shadows cast by facial bones.

### **Methods**

A prospective cross-sectional study was performed between 2019-2022 in singleton pregnancies between 12 and 40 weeks of gestation referred for either a routine or targeted anomaly scan. The fetal palate was assessed as follows: a supine fetal lie with a slightly extended neck was anticipated. The fetal face was scanned in an axial plane with the probe angled cephalad until the palatine bone and uvula were clearly seen. Thereafter, a sweep of the entire palate was performed, reaching the alveolar ridge, anteriorly. The integrity of the palate was confirmed postnatally. The study protocol was approved by the institutional ethics committee. All participating patients were informed and consented.

### **Results**

Five hundred thirty-five fetuses were included in the study. The hard palate sweep was successfully performed in all cases. Of these, 527 were determined to have a normal palate and 8 were diagnosed as a cleft palate, 3 of which were isolated. Postnatally, a normal palate was confirmed in 534/535 fetuses, rendering a 99.8% detection rate and 0.2% false negative rates.

### **Conclusion**

Presented is a method for prenatally detecting a cleft palate based on a dynamic sweep of the entire palate. The method offers promising performance, demonstrating high feasibility and detection rates, with a low false negative rate.