“Single Umbilical Artery and Its Associated Findings”  
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1. Describe the study design. How were patients included in the study? What are the strengths and limitations of this study design?

2. Over the past 6 months, how many patients with single umbilical artery (SUA) have you managed in your practice or institution? Describe your current counseling for these patients including pregnancy management, testing, and delivery.

3. How do you diagnose a case of SUA? When you diagnose a fetus with SUA, what are you concerned about, what else do you look for, and what tests do you recommend?

4. In what percent of cases is the SUA the only abnormality found on prenatal ultrasonography? Does that change your management plan?

5. What were the primary outcome(s) of the study? Why were these chosen? If you were to design a study evaluating SUA, what primary outcome(s) would you choose?


7. The authors report that of their consecutively collected patient population, 11.5% did not have complete pregnancy outcome information available. How might this affect the results of the study? At what point is a loss of outcome information too great (what percent of the total)? Is there a way to evaluate the missing 11.5% to determine if the missing data is likely to impact the findings? Review the discussion and the authors’ comments on this issue.

8. The authors report an over twofold increased risk (adjusted odds ratio of 1.9 to 2.1) in intrauterine growth restriction in the setting of SUA, even in isolated SUA. Define what a twofold increased risk means and what the adjusted odds ratios reflect. How could you describe this to your patient?

9. The authors highlight the significant increase in fetal growth restriction and cardiac and renal anomalies. Review the results, in which the authors report a significant increase in the risk of preterm birth less than 34 weeks and 37 weeks with adjusted odds ratios of 3.1 and 2.2. Speculate on why you think the authors did not choose to highlight or comment on these findings.

10. Discuss the difference between statistical significance and clinical relevance. Is it possible to have an outcome that is statistically significant but not clinically relevant? How is this determined?
11. The authors conclude that serial ultrasounds to assess fetal growth in the setting of SUA are warranted given the significant increase in fetal growth restriction. Do you agree that their data support this recommendation?

12. To serially evaluate fetal growth, how often should growth scans be performed? Assuming the anatomical survey and diagnosis of SUA was at 18–20 weeks, describe what follow-up you would recommend if you were interested in following serial growth of the fetus.

13. Will the findings from this manuscript alter your practice? What changes, if any, will you make?