

Cervical length in placenta accreta spectrum (PAS) and its association with unscheduled delivery

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Objective

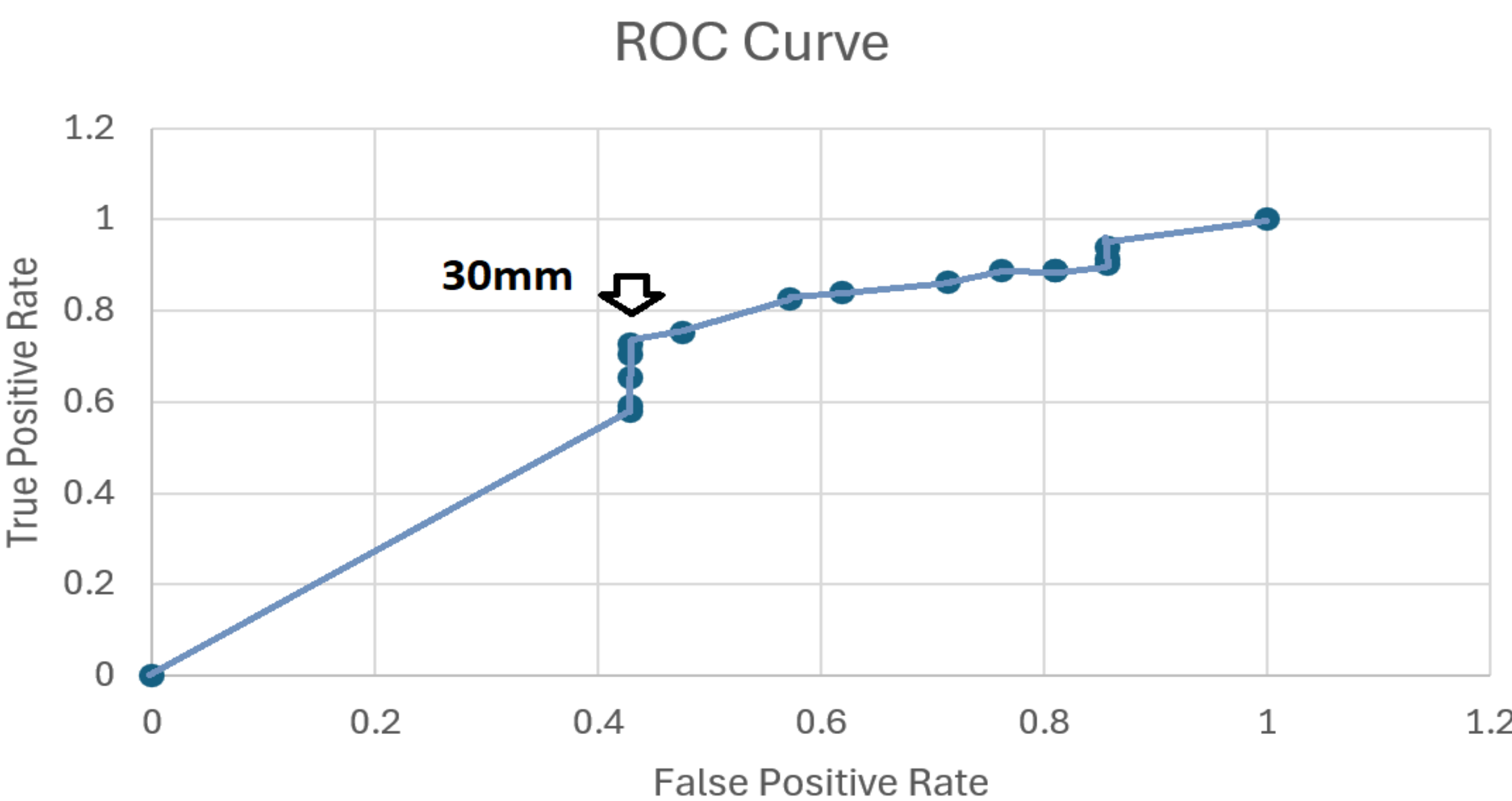
- Patients with PAS face significant morbidity at the time of delivery, that morbidity is increased when delivery occurs in an unscheduled manner.
- In this study, our objective was to evaluate the association between cervical length (CL) and unscheduled delivery in patients with PAS.

Study Design

- Retrospective cohort of patients with PAS from January 2018 to June 2024 at a quaternary referral center.
- Patients with suspected PAS underwent serial ultrasounds including transvaginal CL measurements every 4 weeks.
- Final CL measurement prior to delivery was used for analyses.
- Unscheduled delivery was defined as urgent delivery prior to the scheduled date due to either bleeding or preterm contractions.
- An ROC curve was created to identify the optimal CL associated with unscheduled delivery
- Multivariable Poisson regression models were used to determine adjusted relative risk for unscheduled delivery.

Results

- There were no differences in demographic characteristics between patients who underwent scheduled vs unscheduled delivery including age, gravidity, parity, race/ethnicity, history of spontaneous preterm delivery, presence of placenta previa, and depth of placental implantation.



- Patients undergoing unscheduled delivery had a shorter mean CL.
- Patients delivered prior to 34w0d had a shorter mean CL.
- CL <30mm was associated with higher risk of unscheduled delivery.
- Unscheduled delivery was associated with higher EBL and blood products transfused.



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Results

- The best CL cut-off value according to ROC analysis for prediction of unscheduled delivery was 30 mm
- A CL≤30mm showed sensitivity 52.4%, specificity 75.3%, NPV 85.9%, and PPV 35.5%
- Mean EBL, and mean blood products transfused were: 4,759 mL vs. 2,696 mL (p=0.049), and 19 vs. 8 units (p=0.009) for unscheduled vs. scheduled deliveries, respectively.
- Patients who underwent unscheduled delivery delivered at an earlier gestational age (30w5d vs 34w0d, p=0.001)

Table 1. Average cervical length (CL) and associated maternal outcomes.

	Cervical Length (mm) mean (standard deviation)	p-value
Was delivery scheduled		0.02
Scheduled (n=81)	36.1 (10.3)	
Unscheduled (n=21)	29.9 (10.2)	
Gestational Age at Delivery		<0.001
Before 34w0d (n=53)	31.6 (11.1)	
34w0d or later (n=49)	38.5 (8.6)	

Table 2. Rates of unscheduled delivery and delivery prior to 34 weeks stratified by cervical length (CL) on final ultrasound prior to delivery.

	Unscheduled Delivery n (%)	Delivery <34w0d n (%)
CL ≤30mm (n=31)	11 (35)	24 (77)
CL >30mm (n=71)	10 (14)	28 (39)
Crude relative risk (95% confidence interval)	2.52 (1.19-5.33)	1.90 (1.35-2.66)
Adjusted relative risk[†] (95% confidence interval)	2.33 (1.08-5.03)	1.82 (1.28-2.58)
p-value	0.03	0.001

* Adjusted relative risk was performed by multivariable Poisson regression models with robust error variance.

[†]Variables that were examined and [adjusted for](#) included age, parity, gestational age at the last ultrasound, depth of placental implantation, placenta previa, and history of spontaneous preterm delivery.