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Ultrasound demonstration of fetal corpus spongiosum in the normal fetal population and in male fetuses with genital pathologies

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AIM

To establish a nomogram for the Corpus spongiosum length (CSL) of male fetuses at different gestational ages, and compare the CSL of penile anomalies to the nomogram.

METHOD

Prospective cross-sectional study of 360 low-risk singleton pregnancies (15–37 weeks). CSL was measured from the proximal edge of the corpus spongiosum to the glans tip and analyzed by gestational age. A gestational-age–based nomogram was produced and compared with CSL in fetuses with suspected genital abnormalities.

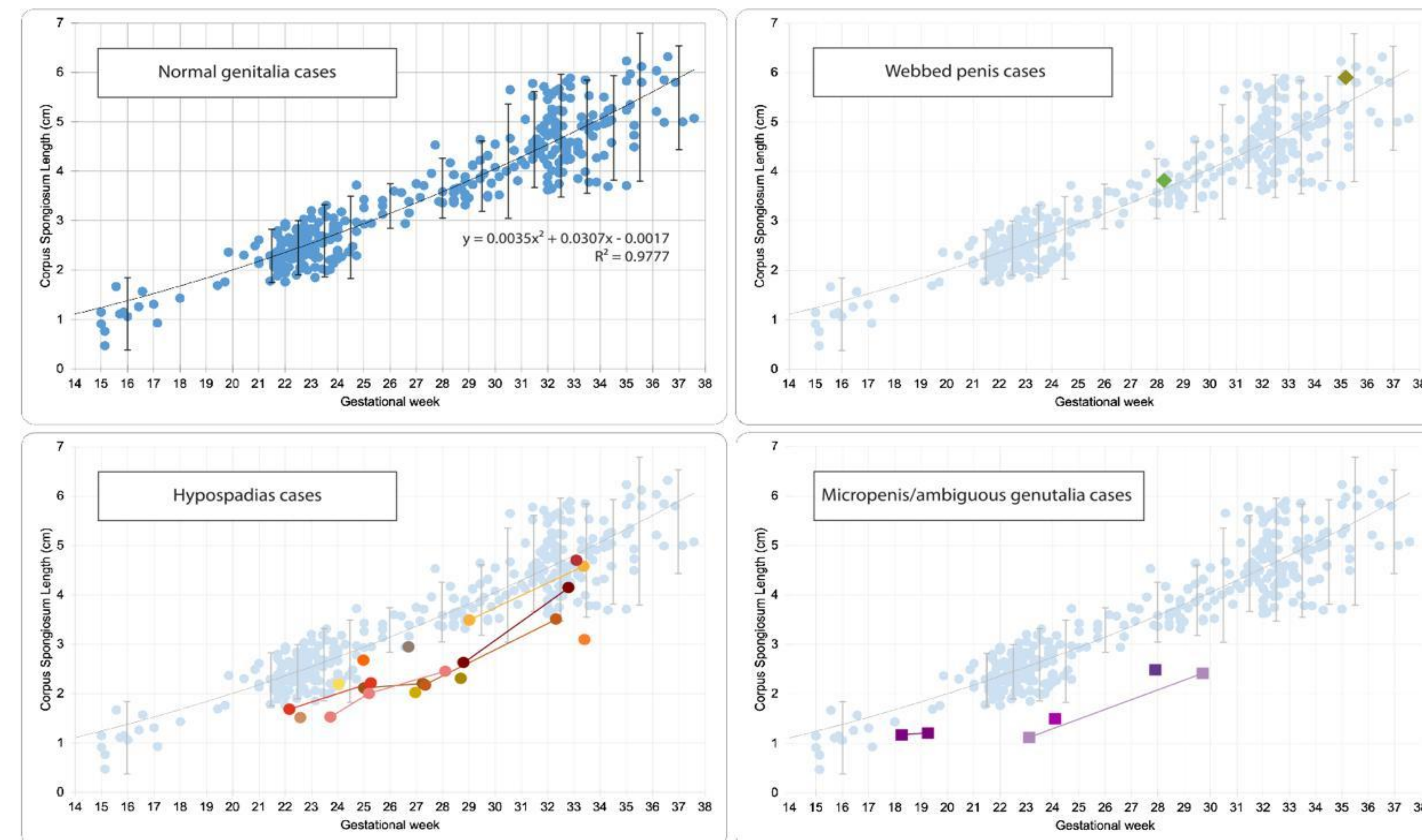
RESULTS

Mean CSL values and variability were obtained (Table 1). A nomogram was formed with a regression equation ($R^2 = 0.977\%$). Of 29 fetuses with suspected penile anomalies, 21 were confirmed. Fetuses with webbed penis (2/5 confirmed) exhibited values within the normal range, supporting a benign variant. Hypospadias cases (16/19 confirmed) demonstrated CSL in the low-normal range. Micropenis (3/5 confirmed) and ambiguous genitalia (1/2 measurable) had markedly reduced CSL, below two standard deviations for gestational age.

Table 1- The Corpus spongiosum length (cm) according to the week of gestation

Gestational week	-2SD	-1SD	Average	+1SD	+2SD
15-18	0.48	0.80	1.12	1.44	1.76
20-21	1.54	1.86	2.19	2.52	2.84
22	1.66	2.00	2.33	2.66	2.99
23	1.95	2.22	2.48	2.74	3.00
24	1.83	2.19	2.55	2.90	3.26
25-26	2.10	2.53	2.97	3.40	3.83
27-28	2.81	3.18	3.56	3.93	4.31
29	3.16	3.41	3.65	3.90	4.14
30	3.35	3.69	4.03	4.38	4.72
31	3.04	3.63	4.23	4.82	5.41
32	3.60	4.16	4.72	5.28	5.83
33	3.56	4.16	4.77	5.37	5.98
34	3.50	4.08	4.65	5.22	5.79
35	3.55	4.26	4.98	5.69	6.41
36-38	4.35	4.91	5.47	6.03	6.58

The CSL(cm) according to the week of gestation



CONCLUSION

The CSL nomogram provides a reliable adjunct for prenatal evaluation of suspected penile anomalies. It enables differentiation between a webbed penis and ambiguous genitalia/micropenis (abnormally small CSL), while also characterizing hypospadias as presenting with relatively reduced yet mostly normal-range CSL. Incorporating CSL into routine prenatal ultrasound may guide counseling, and refine clinical decision-making.

CONTACT INFORMATION

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