

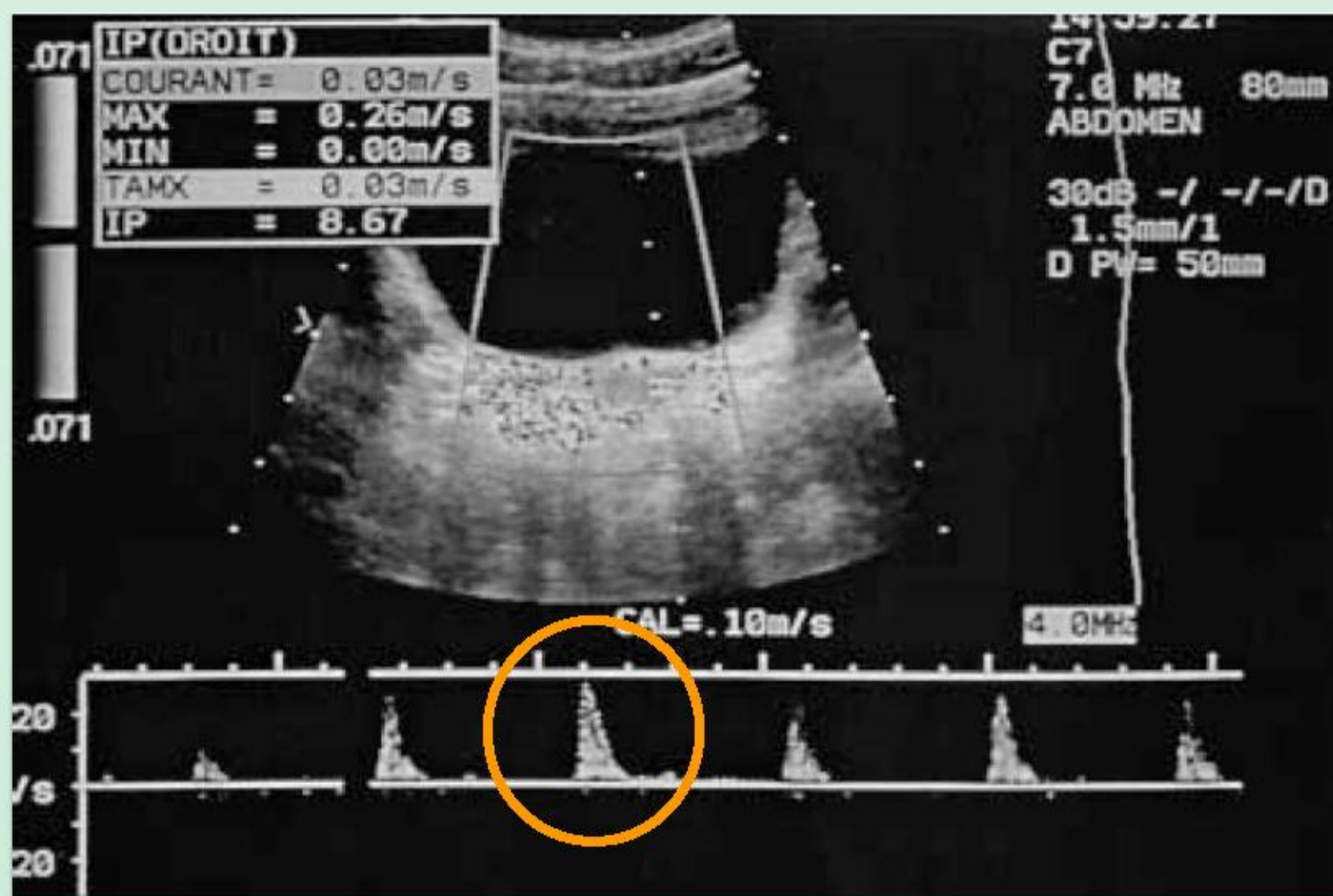
DOPPLER EVALUATION OF THE UTERINE ARTERY FOR THE DIAGNOSIS AND FOLLOW-UP OF PATIENTS WITH PRECOCIOUS PUBERTY



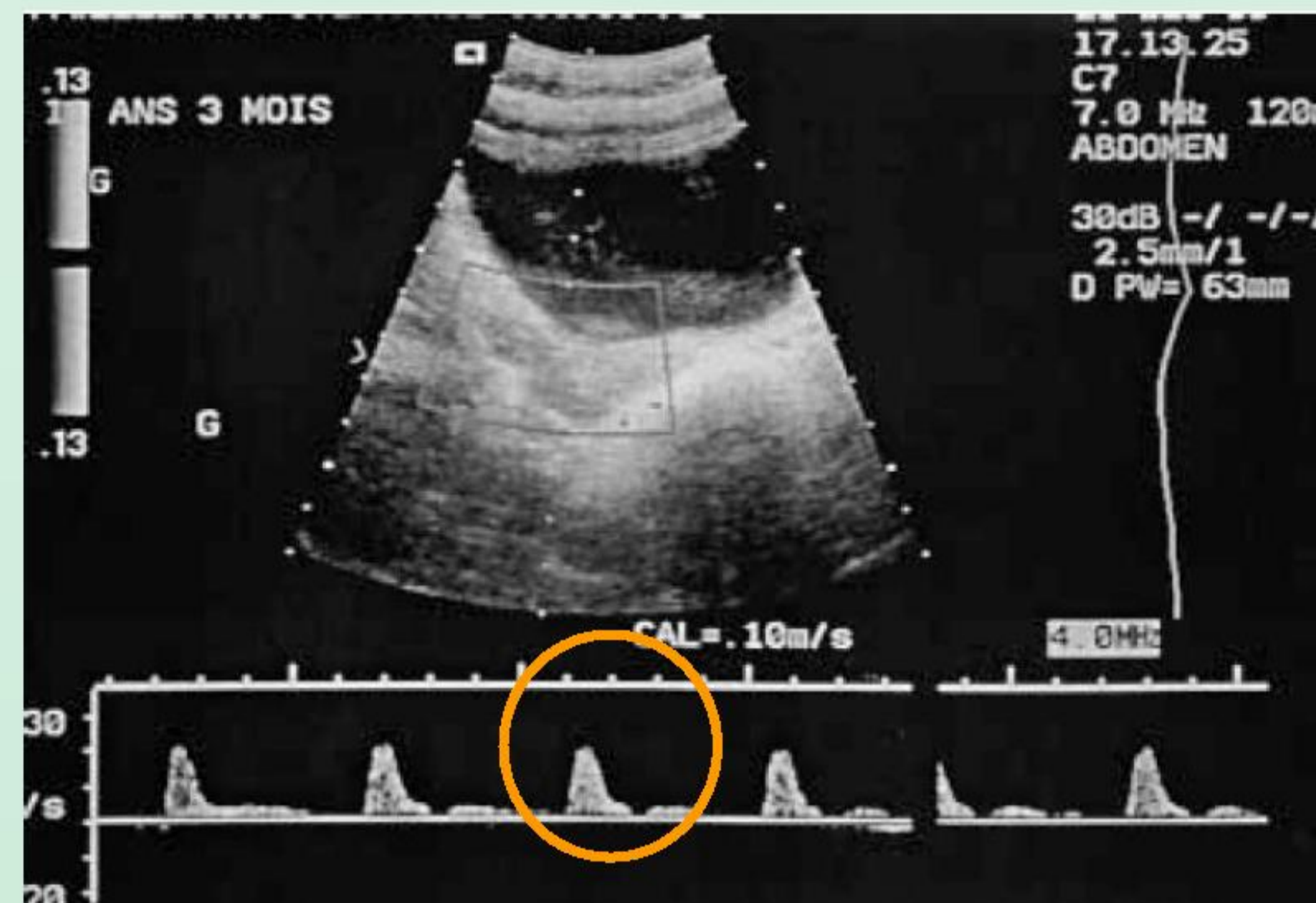
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Background

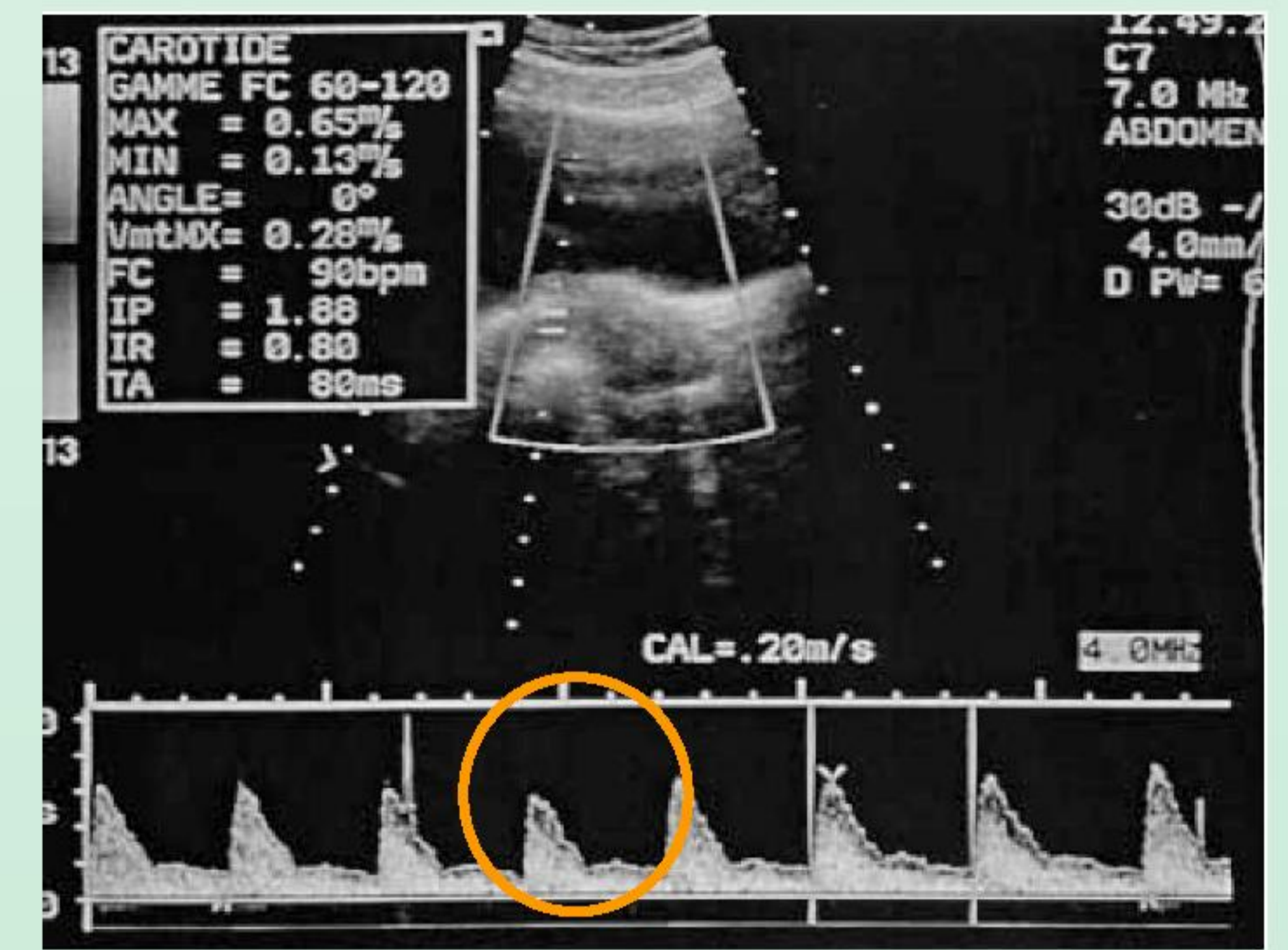
- Pelvic ultrasound is used for the diagnosis and follow-up of girls with precocious puberty (PP)
- During treatment some patients may persist with pubertal uterine and ovarian anatomy
- Estrogens decrease the resistance of the uterine arteries
- Doppler evaluation of these vessels could be a useful complementary exam to determine the effects of treatment in these patients



Before puberty. Narrow systolic waves without diastolic flow



Onset of puberty. Systolic flow waves with interrupted Doppler signal during diastole



Puberty. Broad systolic flow waves with uninterrupted flow signal during diastole

Objective

- To evaluate the usefulness of uterine artery Doppler analysis in the diagnosis and follow-up of girls with precocious puberty

Subjects and Methods

- 14 girls with central PP: breast Tanner stage II-V, <8 years, LH >6,0 IU/L after leuprolide stimulation test, >3,5 cm uterus length
- Treated with long acting triptorelin pamoate 22,5 mg, which lasts 6 months
- A single operator performed a pelvic ultrasound at the time of diagnosis (0), and after 6 and 12 months of analog therapy
- Measuring uterine size, ovarian volume and a Doppler analysis of the uterine arteries was performed
- Uterine blood flow velocity waveform categories: high resistance (lack of pubertal development) and low and/or intermediate resistance (active puberty)
- Doppler analysis was correlated with LH levels observed in these patients at time 0 and during treatment (triptorelin pamoate 22,5 mg.)

Results

- All patients received 1 dose of triptorelin at times 0 and 6 months, and completed 1 year of treatment
- Mean age at the beginning of treatment: 7,9 years \pm 1,3 (4-8), and LH peak before treatment: 34,0 IU/L \pm 23,0(8,6-91,0)

Table 1. Doppler analysis of uterine arteries during precocious puberty treatment with triptorelin pamoate 22,5 mg. and LH levels at Times 0, 6 and 12 months

	Time 0	6 months	12 months
Doppler High resistance N (%)	2 of 12* (17%)	13 (93%)	14 (100%)
Doppler Low/intermediate resistance N (%)	10 of 12* (83%)	1 (7%)	0 (0%)
LH IU/L mean \pm SD	34,0 \pm 23 (8,6 – 91)	2,2 \pm 0,8 (0,7 – 3,7)	1,8 \pm 1,0 (0,4 – 4)

* Two missing Doppler analysis due to technical difficulties

Conclusions

Uterine artery Doppler color analysis is a valuable complementary tool for the diagnosis and management of girls with central PP, with a good correlation with LH levels. Thus and may be useful for patients with this condition during LHRH analog treatment

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