

PENILE DOPPLER PROTOCOL

Indication: Urethral injury, prior to repair, to assess arterial inflow.

Technique:

- Patient supine.
 - Penis with dorsum along abdomen.
 - 15 MHz linear transducer.
 - Evaluate cavernosal arteries longitudinally at base of penis/ Angle correct.
1. Prior to vasodilator injection, measure diameter of right and left cavernosal arteries, obtain waveforms and measure PSVs.
 2. Urologist injects intracavernosal vasodilator (10 μ g PGE-1).
 3. Measure PSV of cavernosal arteries at 5 minute intervals, up to 30 minutes if necessary.
 4. Re-measure diameter of cavernosal arteries (once, at estimated max diameter).
 5. Patient is observed by urologist for 4 hours to ensure no priapism.

Normal:

- PSV 35-100 cm/sec = normal arterial inflow.
- Arterial diameters should increase by 75%.
- Waveforms transform from low-resistance to high-resistance.

Abnormal:

- PSV 25-34 cm/sec \Rightarrow 75% have decreased arterial inflow.
- PSV < 25 cm/sec \Rightarrow all have decreased arterial inflow.
- PSV > 100 cm/sec \Rightarrow vascular spasm or small vessel occlusive disease (diabetes, e.g.).