700ml over 5-10 seconds time span into mmhg of pressure

cath was FR20 3-way silicone
fluid viscosity was like water.
bladder draining like a fluid cannon on cath insertion

and cath length 55cm

Using Poiseuille flow through the catheter, draining **700 mL in 5–10 seconds** implies an average bladder pressure of roughly **25–90 mmHg**, depending mostly on the catheter's actual internal drainage-lumen diameter.

Estimate

Assuming water-like viscosity, a 55 cm catheter, and laminar flow:

Assumed drainage-lumen ID	700 mL in 5 s	700 mL in 10 s
4.7 mm (large lumen)	~48 mmHg	~24 mmHg
4.0 mm	~92 mmHg	~46 mmHg
3.5 mm (more typical for a 3-way catheter)	~157 mmHg	~78 mmHg

A 20 Fr catheter is about 6.7 mm outer diameter, but a **3-way silicone Foley has a smaller drainage channel** because the same tube also carries irrigation and balloon channels. A reasonable working estimate for the drainage lumen is around **3.5–4.0 mm ID**, so the most plausible average pressure is about **50–90 mmHg**, with **~80 mmHg** a reasonable midpoint if it drained in about 10 seconds.

What that means

- That is far above the normal resting bladder pressure of about 5–15 cmH2O (roughly 4–11 mmHg).
- It is consistent with a **very full, high-pressure bladder with strong detrusor contraction**, not ordinary passive drainage.
- The "fluid cannon" appearance is expected when a catheter is inserted into an overdistended bladder: the pressure head plus bladder contraction drives urine rapidly through the tube.
- The calculation is only an approximation: turbulence, catheter entrance/exit losses, eyelets, kinking, and the fact that pressure falls as the bladder empties all matter. Actual

peak pressure was likely higher than the average calculated here.

Safety note

Rapid decompression of a very full bladder can cause bladder-wall bleeding, hematuria, hypotension, or vagal symptoms. In practice, especially with a large residual volume, drainage is often initially controlled or intermittent rather than allowing a full 700 mL to evacuate in seconds. If this happened to a person and there is hematuria, dizziness, pain, or inability to urinate afterward, they should seek urgent medical assessment.

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