the pressure seems to maintain right up until its basically empty and then pulsates the last 50-100 ML out like a on off flow spasm

this is after a 500-1000ML initial dump into the bag just flowing like a sink faucet is attached to the bag (virtually same fill rate as ive timed it before)

as well as convert the mmhg to psi, even decimal psi

What you are describing—**a steady faucet-like 500–1000 mL dump, then pressure held until nearly empty, then pulsatile on/off expulsion of the last 50–100 mL**—fits a bladder that is not simply "leaking under gravity." It is being actively squeezed by the detrusor muscle, with intermittent contractions at the end.

What the initial dump suggests

A 500–1000 mL initial flow at a sink-like rate means the bladder was substantially overfilled and had enough pressure to overcome catheter resistance immediately. That is consistent with a high-pressure or at least high-volume retention pattern, not a normal post-void residual.

The exact pressure depends on the catheter's internal drainage diameter and how long the flow lasted. For your 55 cm, 20 Fr 3-way catheter, a reasonable estimate is:

Drainage-lumen ID	500 mL in 5 s	500 mL in 10 s	1000 mL in 10 s
3.5 mm	~112 mmHg / 2.17 psi	~56 mmHg / 1.08 psi	~112 mmHg / 2.17 psi
4.0 mm	~66 mmHg / 1.28 psi	~33 mmHg / 0.64 psi	~66 mmHg / 1.28 psi

So the initial phase is plausibly in the **0.6–2.2 psi** range, with **about 1–2 psi** a reasonable working estimate if the flow was very fast. These are averages, not a measured peak; the actual peak pressure was likely higher.

What the final pulsating phase means

The last 50–100 mL coming out in on/off bursts is consistent with **detrusor contractions** rather than steady pressure. The bladder wall contracts, pressure rises, urine exits; then the contraction relaxes, flow stops; then it contracts again.

Using the same catheter assumptions, each 50–100 mL pulse implies:

Pulse volume / duration	3.5 mm lumen	4.0 mm lumen
50 mL over 2 s	~28 mmHg / 0.54 psi	~16 mmHg / 0.32 psi
50 mL over 5 s	~11 mmHg / 0.22 psi	~6.6 mmHg / 0.13 psi
100 mL over 2 s	~56 mmHg / 1.08 psi	~33 mmHg / 0.64 psi
100 mL over 5 s	~22 mmHg / 0.43 psi	~13 mmHg / 0.25 psi

So the end-phase contractions are plausibly around **0.1–1.1 psi**, depending on how quickly each pulse exits.

The pressure conversion

For reference:

- 1 mmHg = 0.0193368 psi
- 1 cmH2O = 0.0142234 psi
- 1 psi = 51.7149 mmHg

So the earlier estimates convert like this:

Pressure	mmHg	psi
Normal resting bladder	4–11	0.077–0.213
Moderate high-pressure estimate	50	0.967
Strong high-pressure estimate	90	1.740
100 mmHg	100	1.934

Why this matters clinically

A bladder that maintains pressure until nearly empty and then contracts in pulses is doing active work, not merely draining passively. That pattern is more consistent with detrusor activity and possibly detrusor overactivity or impaired bladder compliance than with a simple “large-volume, low-pressure” bladder.

It also fits with the Credé history: abdominal pressure can start the emptying, but the pulsatile finish suggests the bladder muscle is also contracting. That distinction matters for treatment, because a bladder that generates high pressure needs different management from one that is simply large and floppy.

The catheter catching and bleeding still needs urethral assessment, and the enlarging right-sided lump still needs scrotal ultrasound. Neither finding is explained by high fluid intake.

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