

Optilume for Male Urethral Stricture Disease: A New Minimally Invasive Option

A Common Problem Often Overlooked

Urethral stricture disease—narrowing of the urethra due to scar tissue—is more common than many GPs realise. Reported incidence ranges from 0.6 to 1.4 per 1,000 males, rising to nearly 5 per 1,000 in men over 65. In Australia and similar populations, this translates to several thousand new cases annually.

The condition typically follows prior urethral instrumentation (catheters, cystoscopy, prostate surgery), pelvic trauma, or infections such as gonococcal urethritis. Many patients present to general practice with non-specific symptoms: slow stream, hesitancy, incomplete emptying, or post-void dribbling. These are often misattributed to benign prostatic hyperplasia (BPH), leading to delayed diagnosis and repeated courses of alpha-blockers that do not address the underlying obstruction.

Why Traditional Minimally Invasive Treatments Fall Short

For decades, GPs referring men with confirmed strictures had two endoscopic options: direct vision internal urethrotomy (DVIU) or balloon dilation. Both crack or cut the scar tissue, but neither prevents it from reforming. Recurrence rates exceed 50% at 1–2 years, and repeat procedures often make the stricture longer and denser. The gold standard remains urethroplasty (open surgical reconstruction), which is highly effective (85–90% long-term success) but carries risks of bleeding, infection, and prolonged recovery—barriers for older or frailer men.

Optilume: A Drug-Coated Balloon

Optilume is a recent innovation that directly addresses the limitations of traditional endoscopy. It works in two steps:

1. Mechanical dilation: A high-pressure balloon expands to fracture the scar tissue and restore urethral width.
2. Local drug delivery: The balloon surface is coated with paclitaxel, an antiproliferative agent. As the balloon expands, paclitaxel transfers into the urethral wall, suppressing the fibroblast activity that drives scar reformation.

Importantly, the drug remains locally within the urethra, so systemic side effects are negligible. The procedure is performed as a day case under general or regional anaesthesia.

Success Rates: What GPs Should Know

Recent five-year data from the ROBUST trials show that for short bulbar strictures (≤ 3 cm), 71.7% of men remain free from any repeat intervention—a substantial improvement over historical DVIU outcomes (often $<30\%$ at five years).

The table below summarises key outcomes:

Outcome Measure	Before Optilume	After Optilume	Follow-up	Clinical Meaning
Freedom from re-intervention	—	71.7%	5 years	Most men avoid further procedures
IPSS (symptom score, 0–35)	25.2 (severe)	7.2 (mild)	5 years	Meaningful symptom improvement
Peak urine flow (mL/s)	5.0	19.9	5 years	Near-normal voiding
Radiation-induced stricture success	—	80–81%	12–24 months	Useful option for complex history
Penile stricture reintervention	—	0%	16.5 months	Early promise for difficult location

When to Consider Optilume (and When Not)

Optilume is best suited for:

- Men with short bulbar strictures (≤ 3 cm)
- Those who have failed one or two prior DVIU/dilations
- Older or frailer patients seeking to avoid open surgery

It is not appropriate for long strictures (>3 cm), complete obliteration, or active urethral infection.

What GPs Should Ask Specialists

When referring a man with suspected or confirmed stricture, consider asking the urologist:

- Is this patient a candidate for Optilume?
- If not, why—stricture length, location, or prior treatment history?
- What is your unit's experience with the device?

Take-Home Message

Optilume offers a genuine advance for a common but under-recognised condition. For carefully selected men, it provides durable five-year outcomes with day-case recovery—a meaningful middle ground between repeat endoscopic failures and open surgery.

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