

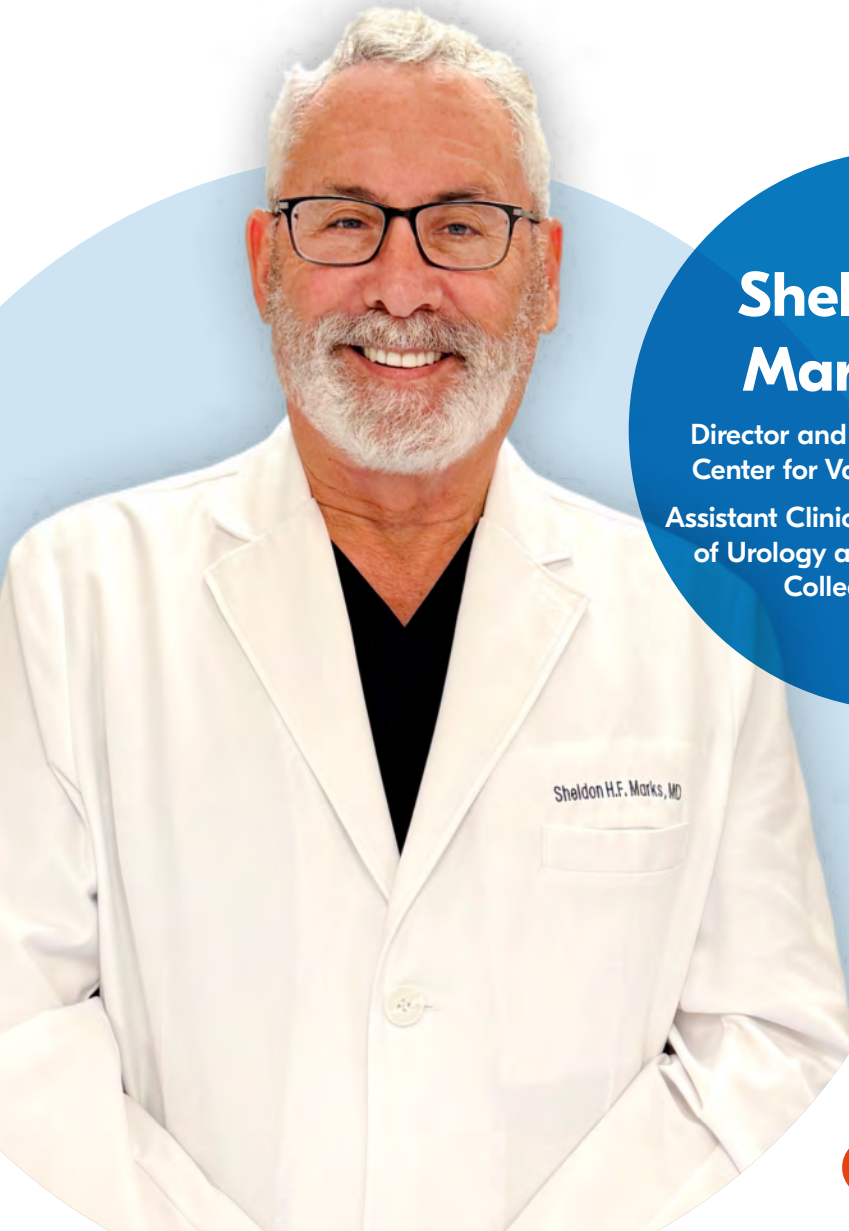
## CLINICAL CASE STUDY

# Microsurgical Vasovasostomy & Vasoepididymostomy.

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Sharpint M.E.T. Bi-Curve Microsutures:  
Mastering Microvascular Anastomosis.

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## Sheldon H.F. Marks, M.D.

Director and Founder, International  
Center for Vasectomy Reversal, P.C.

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of Urology at University of Arizona  
College of Medicine.

## Vasectomy Reversal – Key Facts



**500,000+**

Vasectomies performed each year in the U.S.<sup>1</sup>



**1 in 20**

Men seek fertility restoration<sup>2</sup>.



**Preferred technique**

Microsurgical vasectomy reversal offers the highest success and is cost-effective<sup>3,4</sup>.



**High skillset**

Among the most technically demanding procedures in microsurgery<sup>5</sup>.



**M.E.T. Bi-Curve**

Mastering microvascular anastomosis for greater precision and better outcomes.



**270+**

Microsurgical vasectomy reversals performed annually  
International Center for Vasectomy Reversal Tucson,  
Arizona, USA.

## Patient History

A healthy 43-year-old male, BMI 28, presented seeking restoration of fertility. He had fathered two children in a previous marriage and underwent vasectomy twelve years ago, complicated postoperatively by a large left hematoma that resolved without surgical drainage. He is now in a relationship with a 34-year-old woman who has had no prior pregnancies. Together they wish to conceive naturally.

## Examination

**Right**, medium sperm granuloma at the vasectomy site, mid-scrotum, nontender. Metal clips palpable. Epididymis flat, without induration or cysts.

**Left**, small 2 cm vasal gap low in the spermatic cord, just above the testicle, with dense peri-vasal firmness. Metal clips palpable. Head and body of epididymis full and firm, no cysts. Testicles normal size and consistency, without masses or induration.

## Surgical Procedure

Elective outpatient surgery.

Mild IV sedation with local: 1% lidocaine and 0.5% bupivacaine.

Vertical 3 cm midline incision.

Right granuloma delivered and excised, vasal fluid + for whole motile sperm.

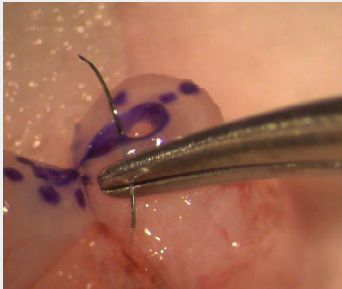
### Right microsurgical 4-layer vasovasostomy:

- Mucosal layer: 6 interrupted 10-0 nylon double sutures with M.E.T. Bi-Curve 70- $\mu$ m needle.
- Muscularis: 10 interrupted 9-0 nylon sutures with M.E.T. 140- $\mu$ m  $\frac{3}{8}$ -circle needle.
- Adventitial: 2 layers, 8 interrupted 7-0 nylon sutures, each layer.
- The left vasal defect was delivered and excised. No sperm or sperm parts were observed in the vasal fluid.
- Left testicle delivered, tunica vaginalis opened. Head of epididymis with plump, full tubules; induration palpated mid body consistent with epididymal blow-out.
- The tubule was teased out, and its top was inked and opened, confirming motile sperm.

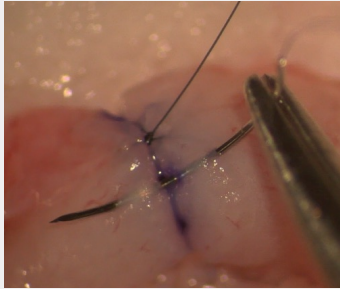
### Left microsurgical 3-layer intussusception vasoepididymostomy:

- 3 interrupted 9-0 nylon sutures with M.E.T. 140- $\mu$ m  $\frac{3}{8}$ -circle needle to reinforce posterior vasal muscularis to posterior epididymal tunica.
- 2 sutures parallel alongside longitudinal epididymal defect with 10-0 nylon sutures with double-armed M.E.T. Bi-Curve 70- $\mu$ m needle.
- The posterior, then anterior, 10-0 needles were passed into the vasal lumen and brought out through the muscularis, then tied.
- 3 interrupted 9-0 nylon sutures with M.E.T. 140- $\mu$ m  $\frac{3}{8}$ -circle needle to reinforce anterior vasal muscularis to anterior epididymal tunica.
- 7-0 interrupted for securing adventitia of vas to tunica to reduce tension over VE anastomosis.
- Tunica vaginalis closed with running 4-0 Polysyn.
- Closure hemi-scrotal compartments interrupted 4-0 Polysyn.
- 5-0 Monoderm running subcuticular skin closure.

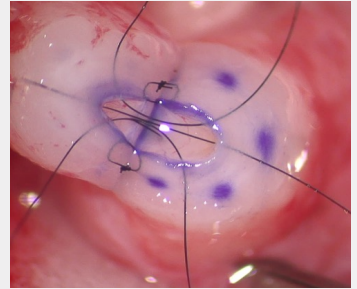
## Vasovasostomy (VV)



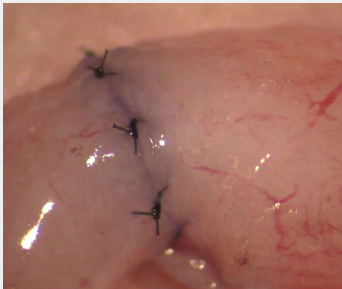
Inner layer: passage of the **M.E.T. Bi-Curve needle** in through the muscularis and out just inside the vasal lumen.



2<sup>nd</sup> layer: passage of an interrupted vasal muscularis **9-0 M.E.T. Bi-Curve needle**.

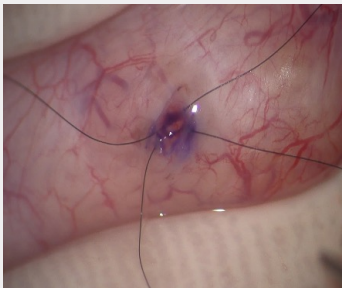


Posterior mucosal layer **10-0 sutures** tied, anterior mucosal layer **10-0 sutures** placed.

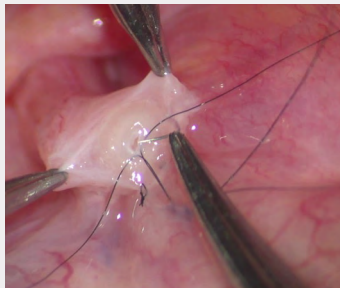


2<sup>nd</sup> layer: completed interrupted vasal muscularis **9-0 sutures**.

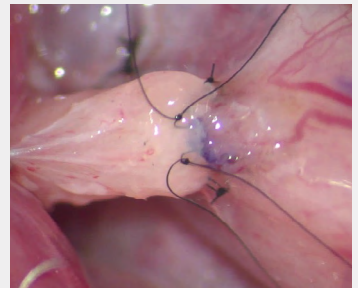
## Vasoepididymostomy (VE)



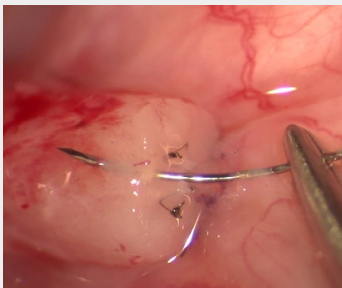
Placement of the **10-0 sutures** with **M.E.T. Bi-Curve needles** longitudinally alongside epididymal tubule window,



Passing the **10-0 suture** on **M.E.T. Bi-Curve needle** into the vasal lumen.



Tying the **10-0 nylon** to complete the intussusception of the open epididymal tubule into the vasal lumen.



Passage of the **9-0 M.E.T. Bi-Curve needle** to secure the epididymal tunica to the vas.



Completed interrupted **9-0 nylon** of the vas to epididymal tunica.

*The information contained in this case study is based on the clinical experience of the author and is intended for educational purposes only. Clinical decisions should always be based on the individual patient's condition and the treating physician's professional judgment.*

## CONCLUSIONS

In this case, Dr. Marks reported that **Sharp<sup>point</sup> M.E.T. Bi-Curve microneedles** supported **precise microsuture placement** with **minimal collateral tissue disruption**, which he associates with **reduced inflammation and scarring**.

In Dr. Marks' experience, the use of the **M.E.T. Bi-Curve needle** contributed to a **shorter operating time**.

Based on his clinical experience, Dr. Marks reports **favorable outcomes** using this technique.



### AA-2492

1. 1" Suture Length
2. Double-Armed
3. Flat Pressed, Square Needle Body
4. M.E.T. Optimized Needle Tip
5. **Bi-Curve Ergonomics**

## The **Golden 5** Advantages of M.E.T. Bi-Curve Technology

Products featuring the Golden 5 Advantages: AA-2492 and AA-1824.

*“SharpPoint M.E.T. Bi-Curve microneedles provide the precision, control and tissue preservation required for successful microsurgical vasectomy reversal.”*

**Sheldon H.F. Marks, M.D.**  
International Center for Vasectomy Reversal, University of Arizona

Preferred Suture Selection for  
Microsurgical Vasectomy Reversal

|                             |          |              |                           |        |     |
|-----------------------------|----------|--------------|---------------------------|--------|-----|
| MUCOSAL ANASTOMOSIS         | AA-2492  | 10-0 Nylon   | M.E.T. Bi-Curve           | 70 μm  | 1"  |
| MUSCULARIS                  | AA-012I  | 9-0 Nylon    | M.E.T. ¾ Circle           | 140 μm | 5"  |
| REINFORCEMENT SUTURES       | OL318060 | 7-0 Nylon    | Reverse Cutting           | 8 mm   | 12" |
| TENSION RELIEF & ADVENTITIA | OL318060 | 7-0 Nylon    | Reverse Cutting           | 8 mm   | 12" |
| SUBCUTICULAR SKIN CLOSURE   | Y493N    | 5-0 Monoderm | Precision Reverse Cutting | 13 mm  | 18" |
| TUNICA VAGINALIS CLOSURE    | G422N    | 4-0 Polysyn  | Reverse Cutting           | 19 mm  | 27" |
| TISSUE LAYERS (1–2 layers)  | G422N    | 4-0 Polysyn  | Reverse Cutting           | 19 mm  | 27" |

Disclaimer: The testimonials reflect the surgeon’s personal opinion and experience, which may not represent other surgeons or the medical community. Results may vary; consult all relevant data for clinical decisions.

1. Ostrowski KA, Holt SK, Haynes B, et al. Evaluation of Vasectomy Trends in the United States. *Urology*. 2018;118:76–79. — and Eisenberg ML, Lipshultz LI. *J Urol*. 2010 (PMID 20850832). Namekawa T, et al. Vasectomy reversal: a clinical update. *Asian J Androl*. 2016;18(3):365–371 (PMID 26975488). — and Dickey RM, et al. *Transl Androl Urol*. 2015;4(2):168–178 (PMC5583052). Belker AM, Thomas AJ Jr, Fuchs EF, Konnak JW, Sharlip ID. Results of 1,469 microsurgical vasectomy reversals by the Vasovasostomy Study Group. *J Urol*. 1991;145(3):505–511 (PMID 1997700). — and Seth A, et al. *Andrology*. 2024 (doi:10.1111/andr.13543). Pavlovich CP, Schlegel PN. Fertility options after vasectomy: a cost-effectiveness analysis. *Fertil Steril*. 1997;67(1):133–141 (PMID 8986698). — corroborated by Lee R, et al. *Hum Reprod*. 2008. Schlegel PN, Sigman M, Collura B, et al. Diagnosis and Treatment of Infertility in Men: AUA/ASRM Guideline. *J Urol*. 2021. 2. Namekawa T, et al. Vasectomy reversal: a clinical update. *Asian J Androl*. 2016;18(3):365–371 (PMID 26975488). — and Dickey RM, et al. *Transl Androl Urol*. 2015;4(2):168–178 (PMC5583052). 3. Belker AM, Thomas AJ Jr, Fuchs EF, Konnak JW, Sharlip ID. Results of 1,469 microsurgical vasectomy reversals by the Vasovasostomy Study Group. *J Urol*. 1991;145(3):505–511 (PMID 1997700). — and Seth A, et al. *Andrology*. 2024 (doi:10.1111/andr.13543). 4. Pavlovich CP, Schlegel PN. Fertility options after vasectomy: a cost-effectiveness analysis. *Fertil Steril*. 1997;67(1):133–141 (PMID 8986698). — corroborated by Lee R, et al. *Hum Reprod*. 2008 5. Schlegel PN, Sigman M, Collura B, et al. Diagnosis and Treatment of Infertility in Men: AUA/ASRM Guideline. *J Urol*. 2021.

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