

# MEDICAL CASE

Improving Vascular Treatment with  
Innovative Stent Design



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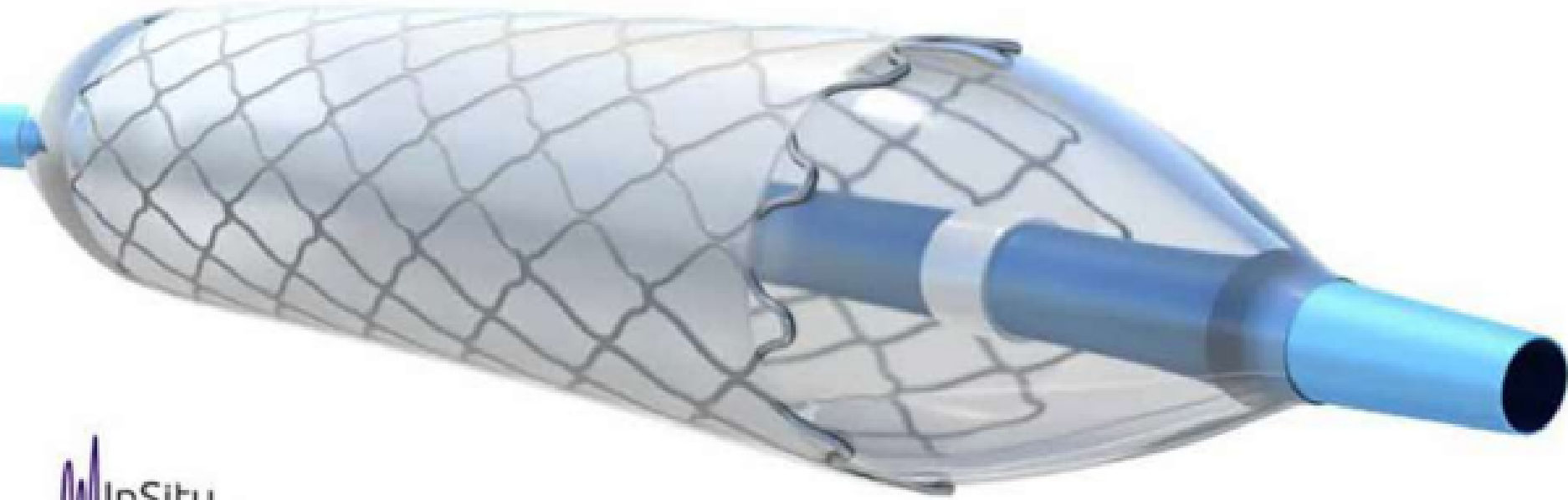
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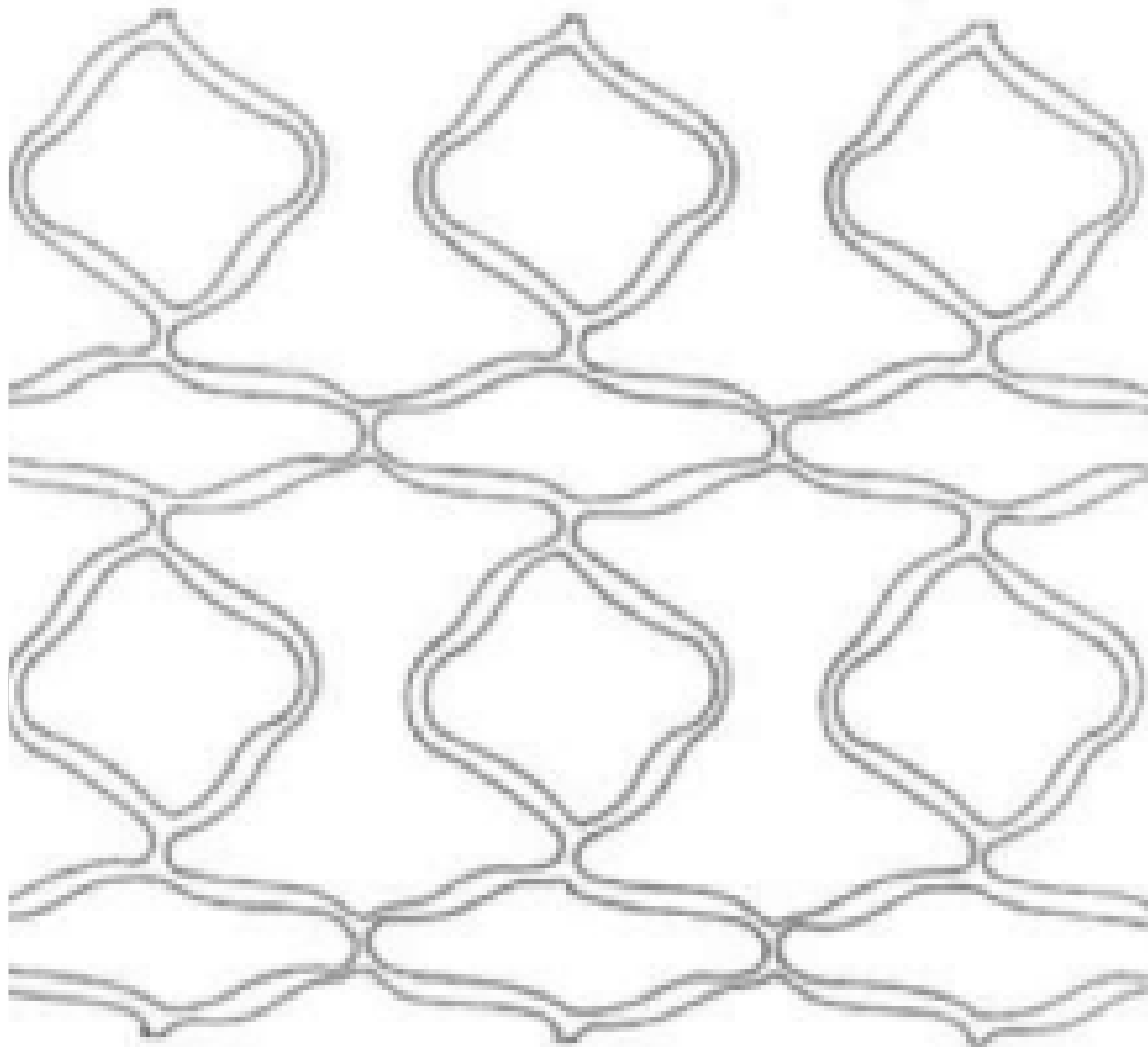


# CASE INTRODUCTION

This case study focuses on the use of an advanced graft stent (**SILENE™**) designed to treat complex vascular diseases such as aortic aneurysms and arterial blockages.

Vascular conditions often present challenges due to irregular vessel structures, high risk of restenosis, and limitations of traditional stent designs. These challenges require solutions that combine precision, flexibility, and long-term stability.

The case highlights how innovative stent design and endovascular techniques can improve treatment effectiveness, reduce procedural risks, and support better patient outcomes in complex clinical scenarios.



# OBJECTIVES



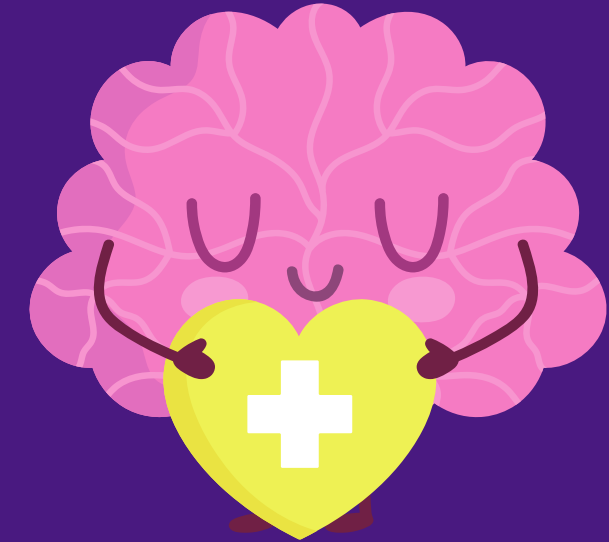
## CASE OVERVIEW

To analyze the clinical problem of vascular obstruction and aneurysm treatment, focusing on the limitations of conventional stent solutions and the need for improved design performance.



## PROJECT BACKGROUND

To examine the development and application of the SILENE™ graft stent, including its structure, material composition, and deployment mechanism in endovascular procedures.



## PROFESSIONAL TEAMWORK

To highlight the role of collaboration between vascular surgeons, engineers, and healthcare professionals in ensuring precise stent placement and successful patient outcomes.



## MIND MAP

### Strategic process

#### Ethical approach

The treatment approach prioritizes patient safety, minimally invasive procedures, and long-term clinical outcomes. The use of biocompatible materials such as ePTFE reduces complications and ensures safer interaction with vascular tissues. Ethical decision-making also involves selecting the most suitable intervention based on patient anatomy and risk level.

#### Main insights

The case highlights that successful vascular treatment depends on both device design and clinical execution. Flexibility, radial strength, and secure anchoring are critical factors that improve performance. Advanced stent designs can significantly reduce complications compared to traditional approaches.

#### Research context

This case is based on advancements in endovascular therapy and stent engineering, focusing on improving treatment for complex vascular conditions such as aortic aneurysms. It reflects ongoing research aimed at enhancing device performance, reducing restenosis, and expanding treatment options.

#### Clinical perspective

From a clinical standpoint, the SILENE™ stent demonstrates strong applicability in real-world procedures, including complex anatomies. Its ease of navigation and deployment supports precision during surgery, while its structural properties contribute to better patient recovery and reduced procedural risks.

# MEDICAL TEAM

**Dr. Roberto Chiappa**

LEAD VASCULAR  
SURGEON



\*Supporting clinical and surgical team (not individually specified)

# FUTURE GOALS

## MEDICAL INNOVATION

Future developments aim to enhance stent design through improved materials, smarter coatings, and better adaptability to complex vascular structures. Advancements in biomedical engineering can further reduce complications, improve long-term patency, and expand treatment options for high-risk patients.



## CONTINUOUS IMPROVEMENT

Ongoing clinical research and real-world data analysis will support continuous refinement of stent performance. Improvements in deployment techniques, imaging guidance, and procedural accuracy can lead to safer surgeries and more consistent outcomes across diverse patient cases.



## HUMAN CONNECTION

Beyond technology, patient-centered care remains essential. Clear communication, personalized treatment planning, and collaboration between medical teams ensure better patient experience, trust, and recovery throughout the treatment process.





## DID YOU KNOW THAT...?

**This case highlights how advanced stent design can significantly improve outcomes in complex vascular procedures.**

Modern vascular treatments require more than just device placement they depend on precision engineering and clinical expertise. The SILENE™ graft stent demonstrates how flexibility, radial strength, and biocompatibility work together to reduce complications such as restenosis and stent migration.

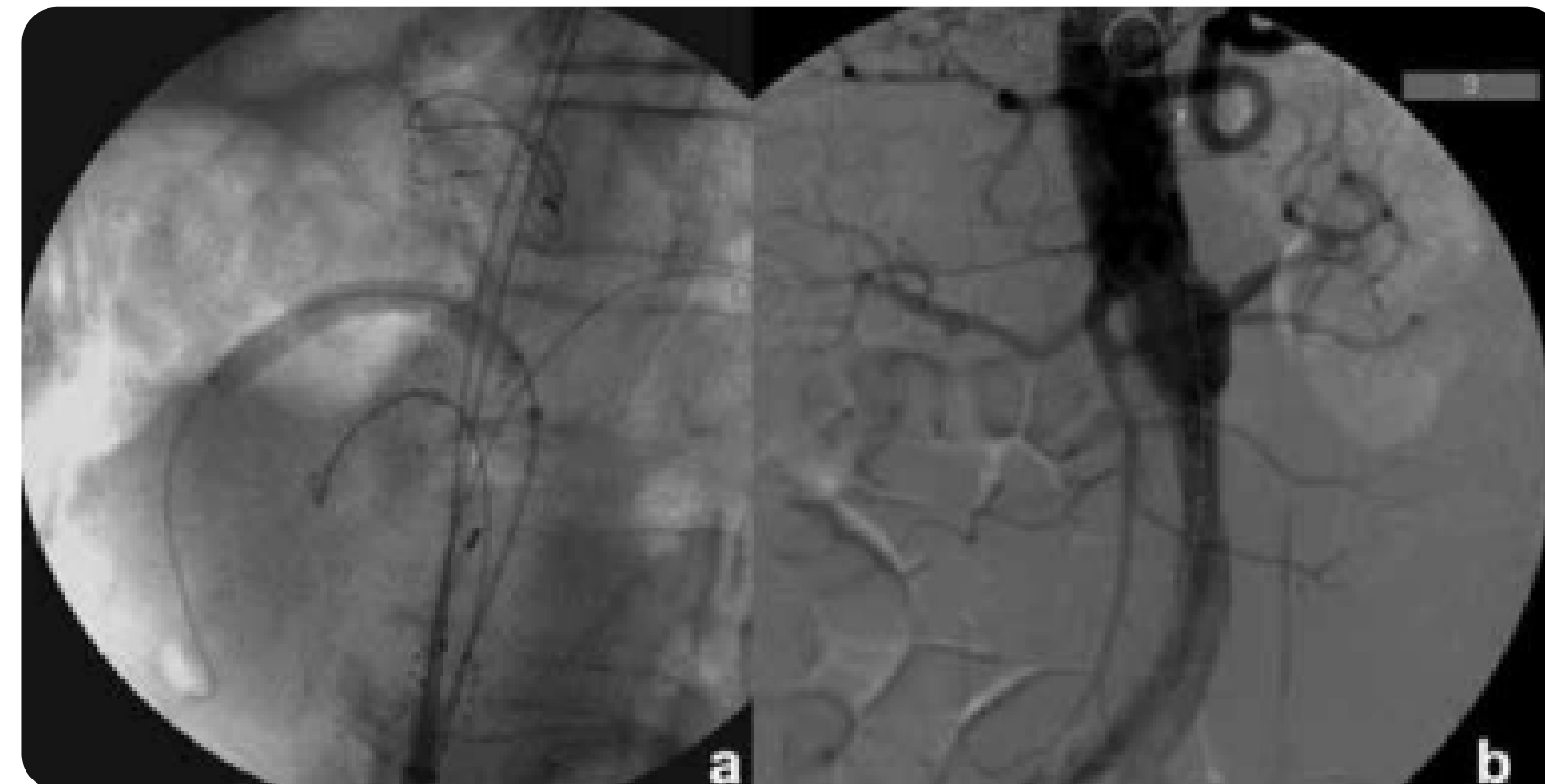
It also shows that successful outcomes are not only driven by technology, but by coordinated teamwork between surgeons, imaging specialists, and medical engineers during endovascular procedures.

# Clinical Evidence

The angiographic images demonstrate successful deployment of the **SILENE™** graft stent in complex vascular anatomy.

The procedure shows precise placement, effective vessel reconstruction, and improved blood flow following intervention.

These results highlight the reliability of the stent design in supporting safe and accurate endovascular treatment.



# CONCLUSIONS

**This case study demonstrates how innovation in medical device design can directly improve clinical outcomes in complex vascular treatments.**

**The **SILENE™** graft stent highlights the importance of combining flexibility, strength, and biocompatibility to ensure safe and effective procedures.**

This case reflects how engineering and medicine together can solve real-world healthcare challenges.



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