

**HOW I SEE THE  
FUTURE OF CAS**

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**FRANK J. VEITH**

**MEET - 2015**

**NICE – JUNE 9, 2015**

**THE SHORT ANSWER**

**IS**

**THE FUTURE IS BRIGHT**

**DESPITE CURRENT LEVEL 1 EVIDENCE  
THE OUTLOOK FOR AN UPSURGE IN  
CAROTID STENTING (CAS) IS BRIGHT  
& THEREFORE**

**WE ARE READY FOR  
THE NEXT BREAKTHROUGH**

**I HAVE NO  
FINANCIAL CONFLICTS  
ALTHOUGH I HAVE  
LOTS OF **BIASES****

**DESPITE SOME OPINIONS  
TO THE CONTRARY  
CAROTID STENTING OR CAS  
IS CURRENTLY IN DECLINE  
GENERALLY  
FOR TREATMENT OF SYMP &  
ASYMPTOMATIC CAR STENOSIS  
THIS IS BECAUSE...**

**WITH  
SYMPTOMATIC  
CAROTID STENOSIS  
PATIENTS**

**RECENT RCTs\* & POPUL STUDIES  
SHOW HIGHER STROKE RATES  
WITH CAS THAN CEA, AND...**

**\*(CREST, ICSS, ETC)**

**WITH MOST  
ASYMPTOMATIC  
CAROTID STENOSIS  
PATIENTS**

**BEST MEDICAL TREATMENT  
HAS SUCH LOW STROKE RATES  
THAT IT MAKES MOST  
CAS (& CEA) UNNECESSARY**



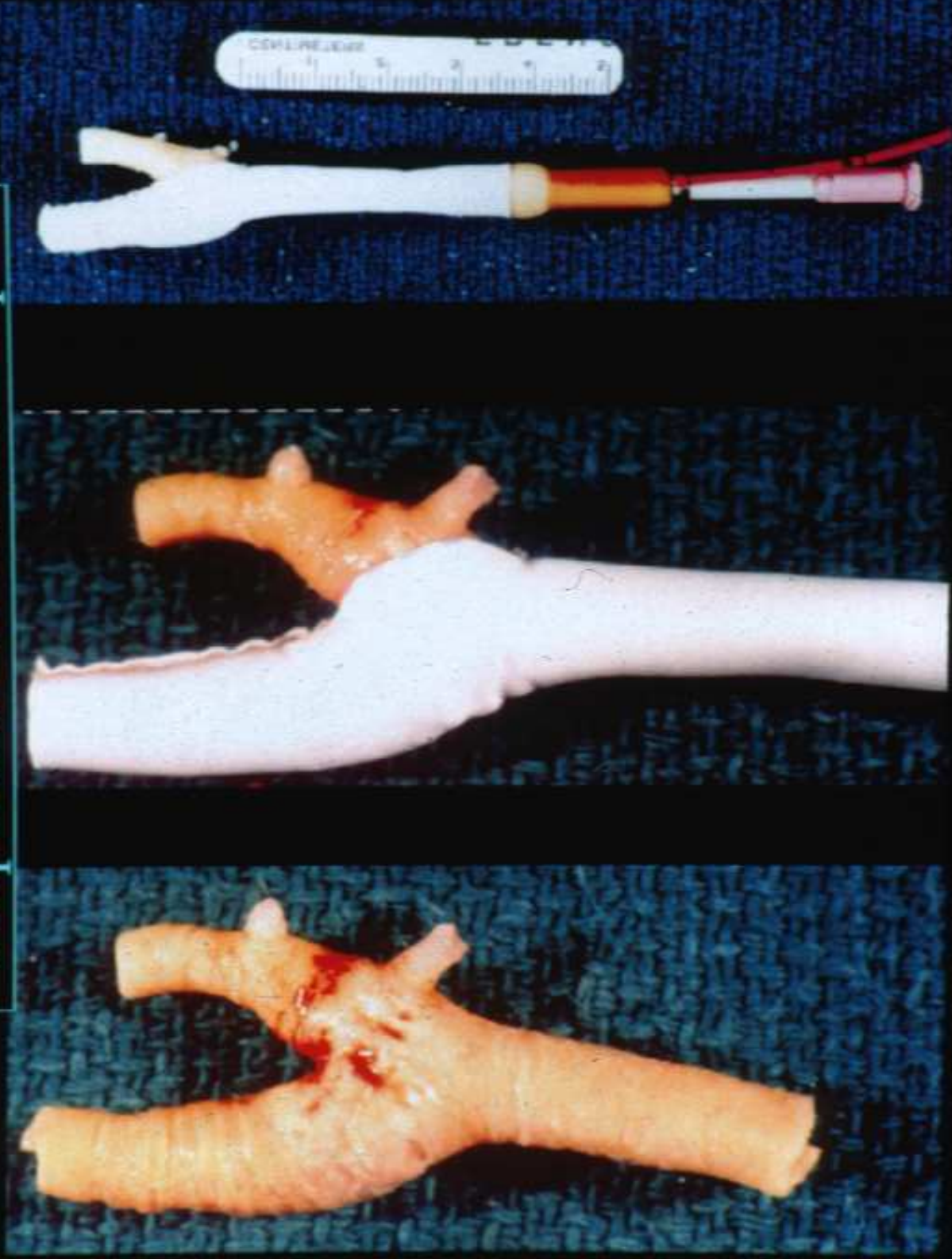


**HOWEVER, I BELIEVE OUTLOOK FOR  
CAS IS BRIGHT BECAUSE 3 ADVANCES  
MAY DECR STROKES, IMPROVE CAS  
RESULTS & MAKE CURR RCTs OBSOLETE**

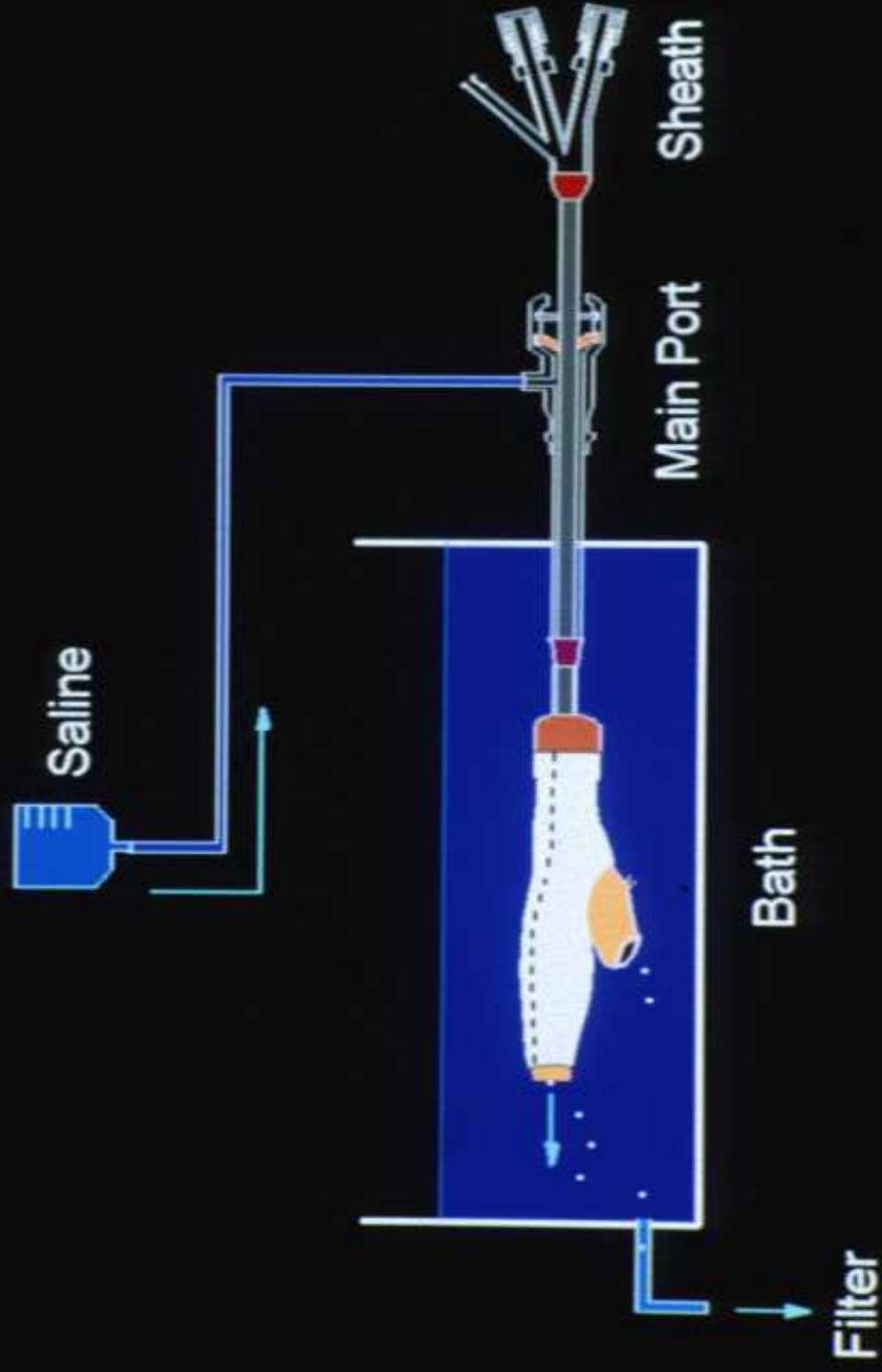
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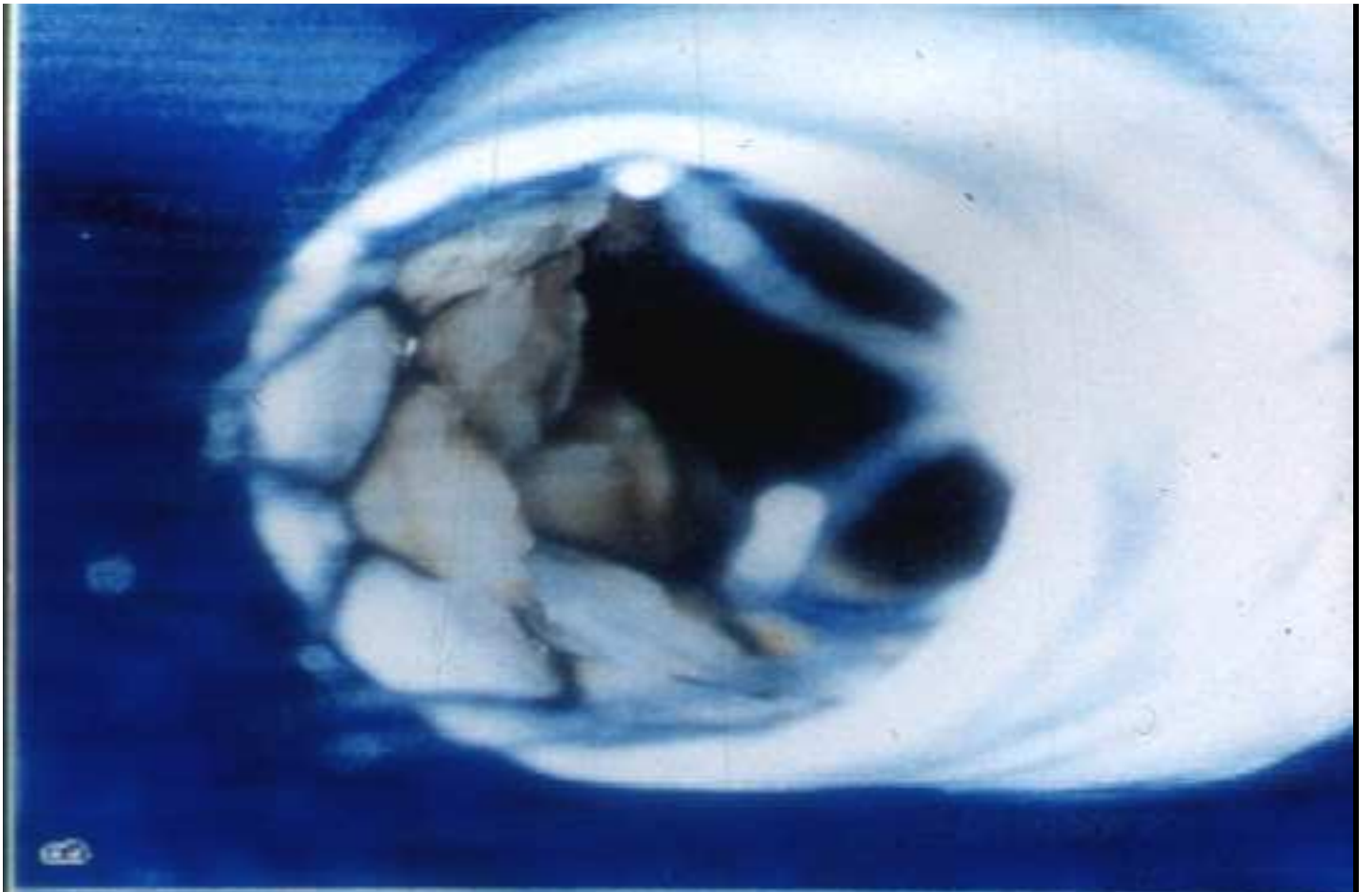
- 1. BETTER EMBOL PROTECT DEVICES  
WITH CESS/REVERSAL OF FLOW**
- 2. CERVICAL ACCESS (SILK ROAD SYSTEM)  
TO AVOID THE AORTIC ARCH & REV FL**
- 3. MEMBRANE OR MESH COVERED  
STENTS TO STOP DELAYED STROKES**

# OUR 1995 EX VIVO MODEL OF CAS

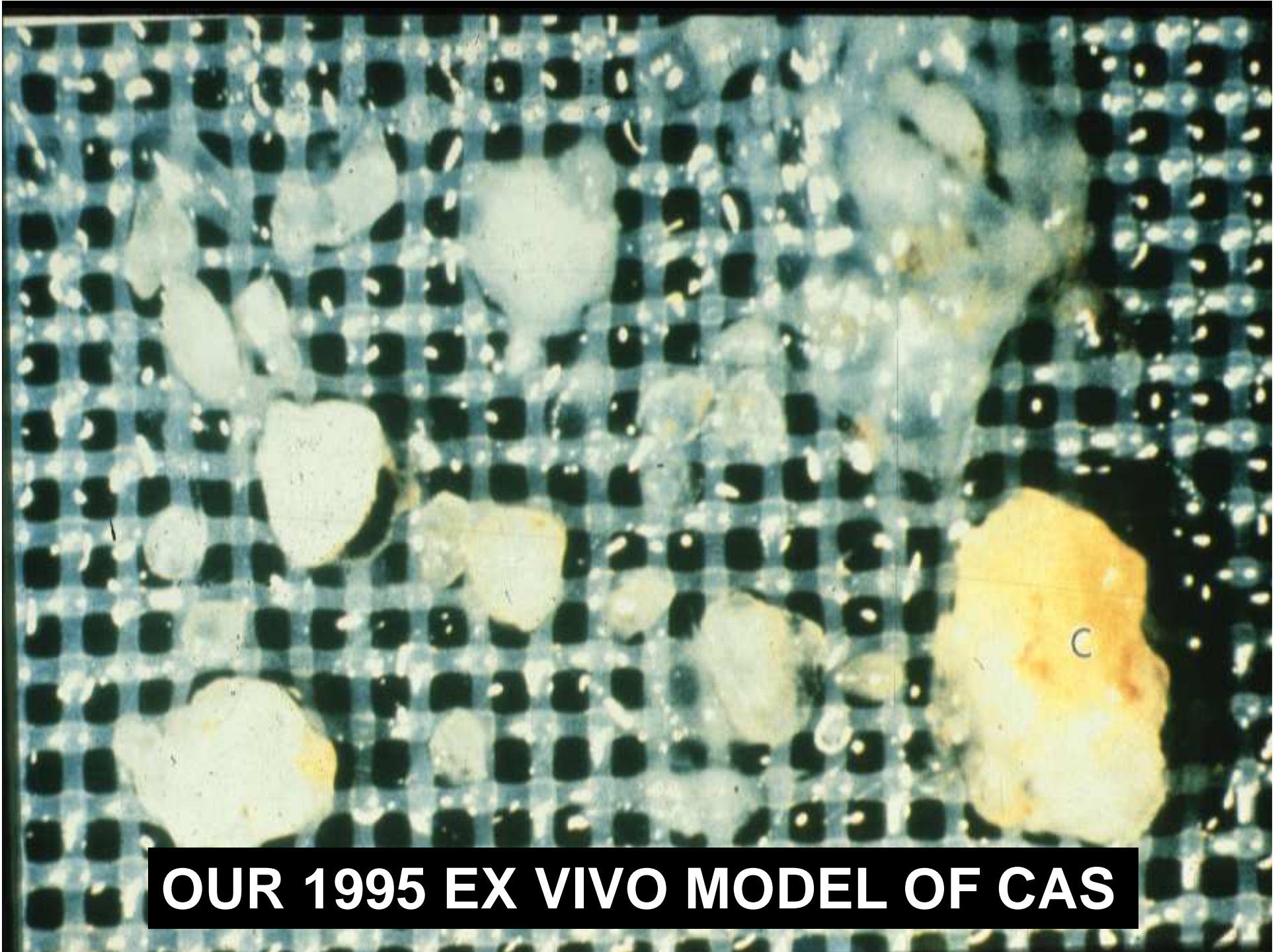


# Endovascular Bath









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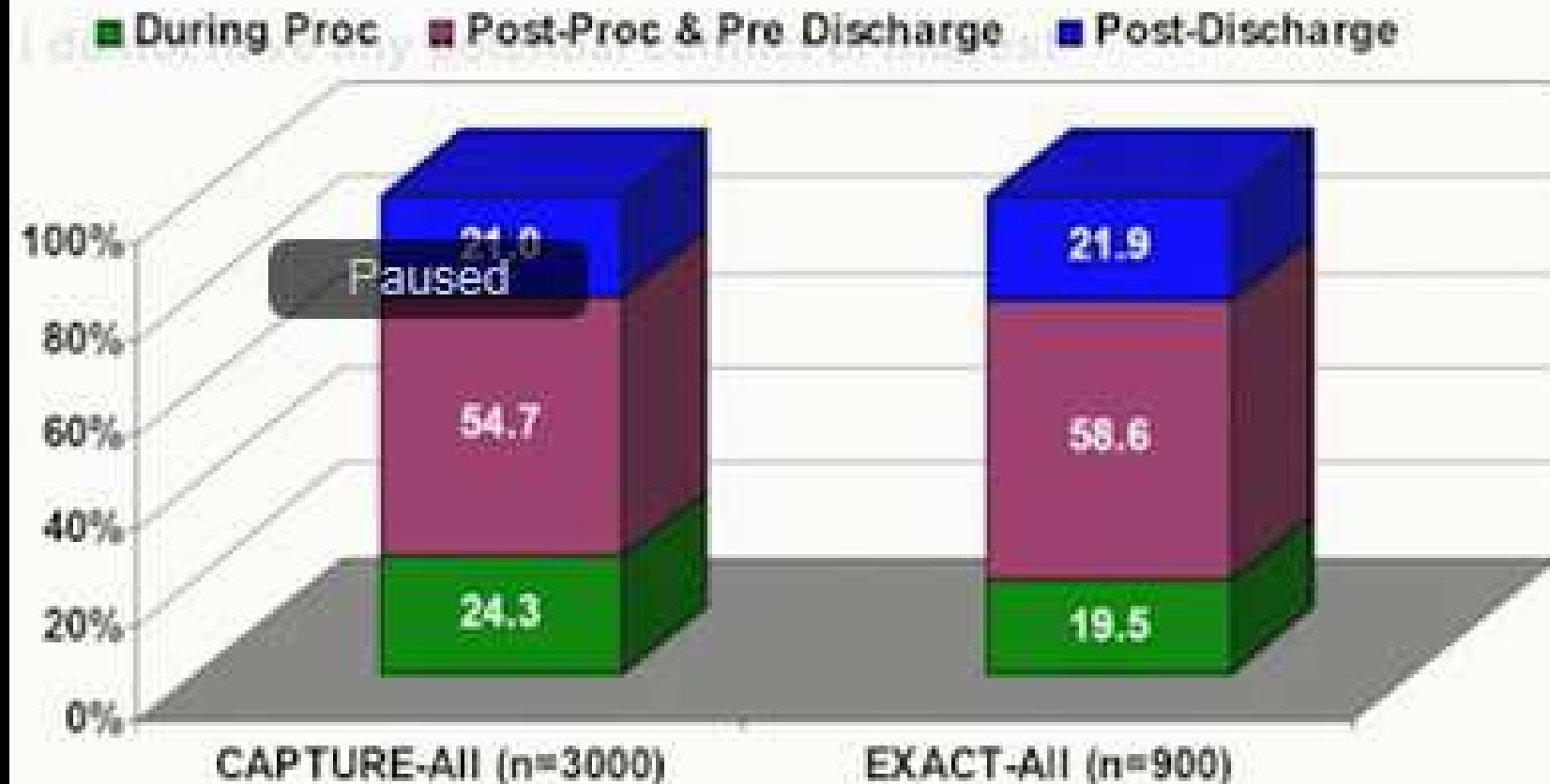
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# More than 70% of events after CAS occur after the procedure

Author's name: Max Amor



From M.Bosiers, and others

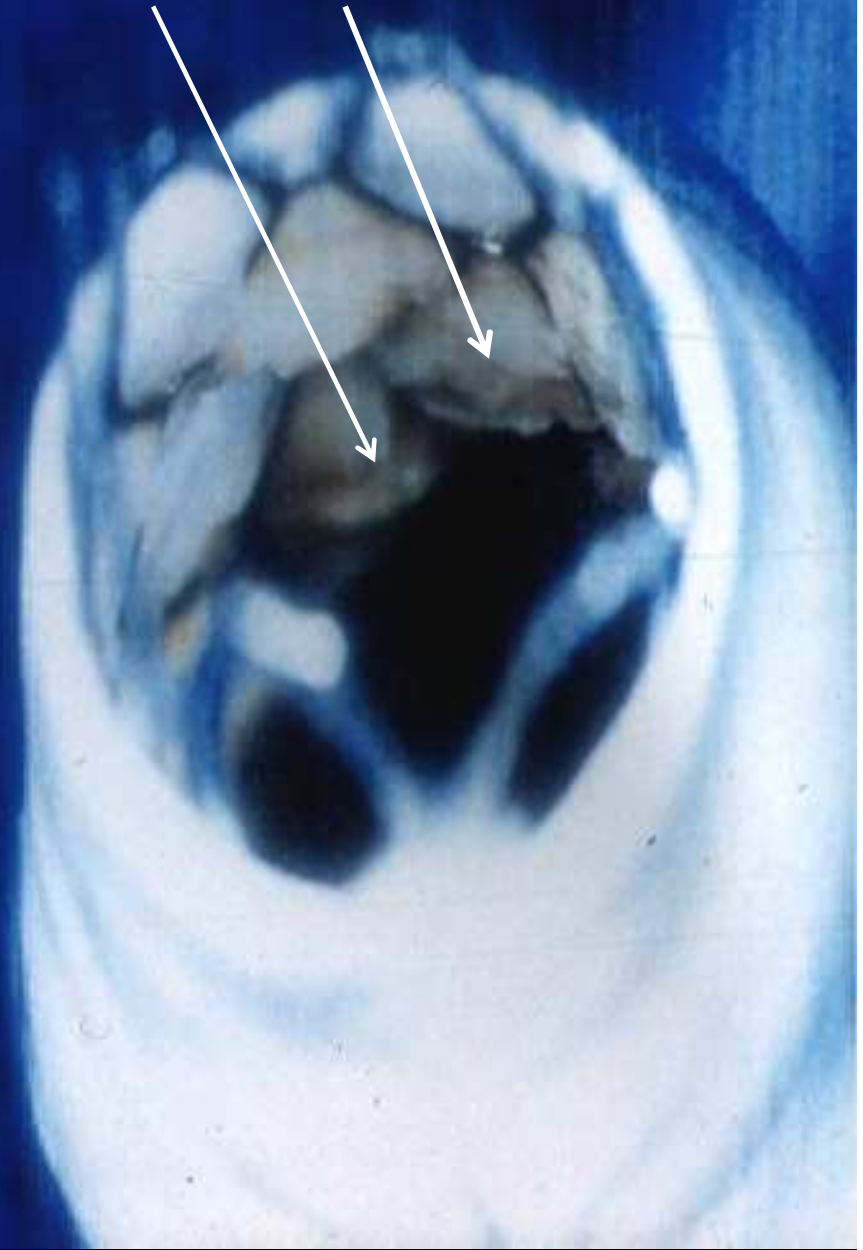
**COURTESY MAX AMOR**



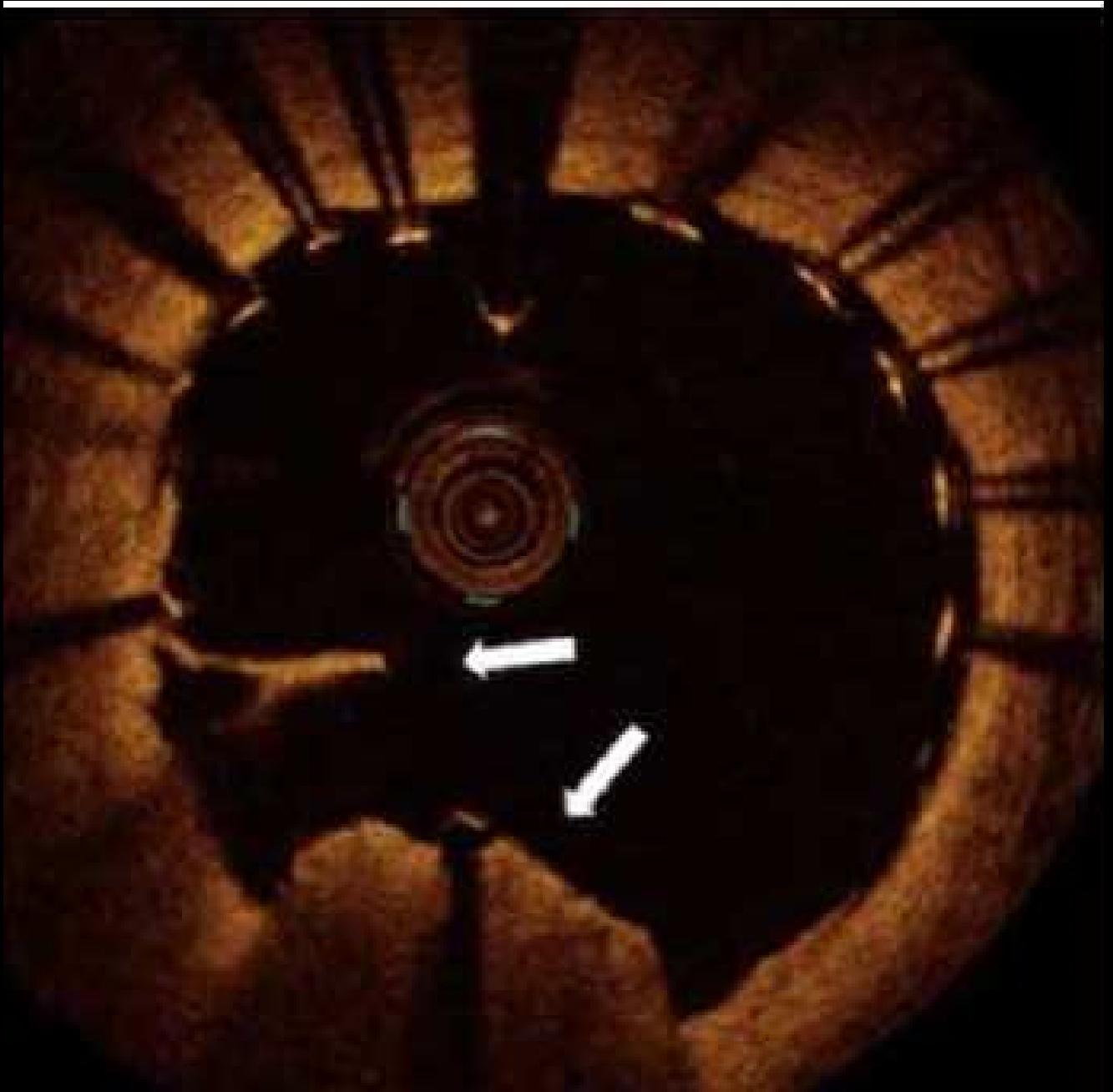
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**DEBRIS THROUGH STENT  
CAUSING DELAYED EMBOLI**

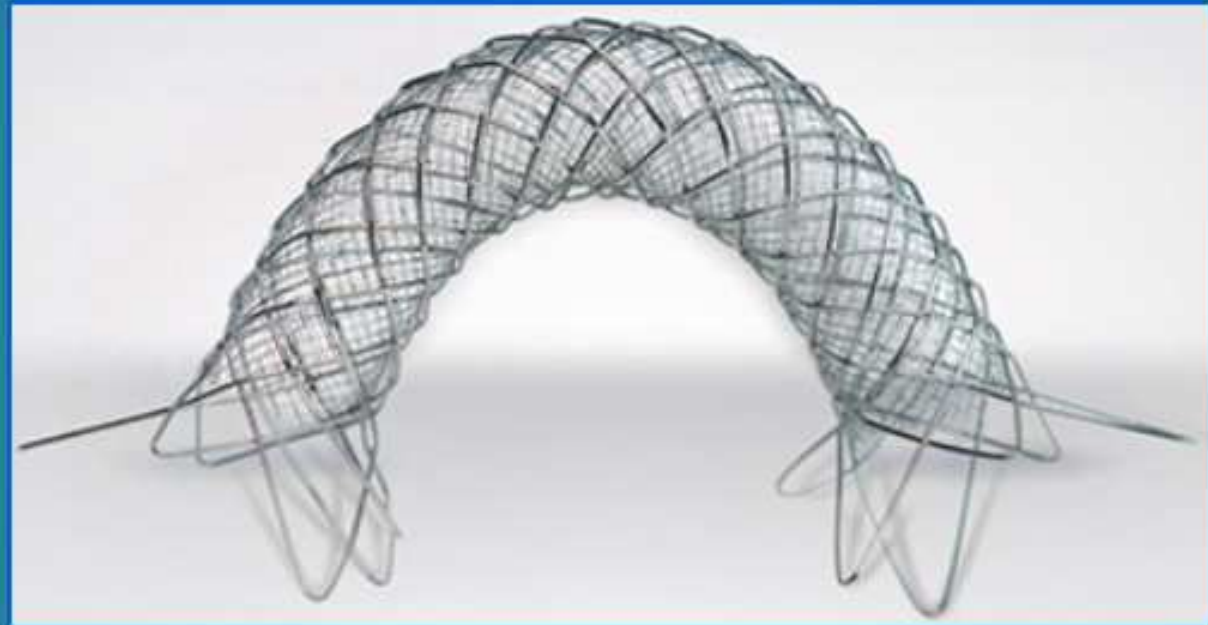






# A MESH COVERED STENT TO PREVENT DELAYED EMBOLIZATION

Dual layer micromesh design for sustained embolic protection.



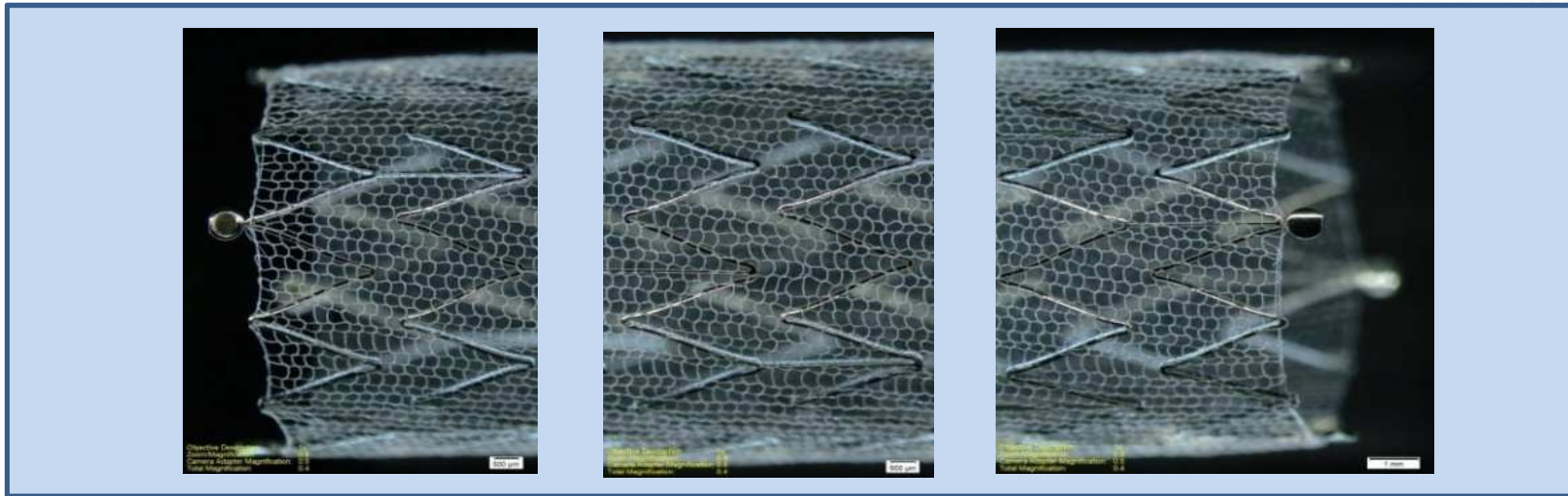
**ROADSAVER FROM TERUMO**

# THE THREE MICROMESH CAROTID STENTS



From Max Amor

# CGuard™ carotid embolic protection technology with MicroNet™ by InspireMD



**HOWEVER, I BELIEVE OUTLOOK FOR CAS IS BRIGHT BECAUSE 3 ADVANCES MAY DECR STROKES, IMPROVE CAS RESULTS & MAKE CURR RCTs OBSOLETE**

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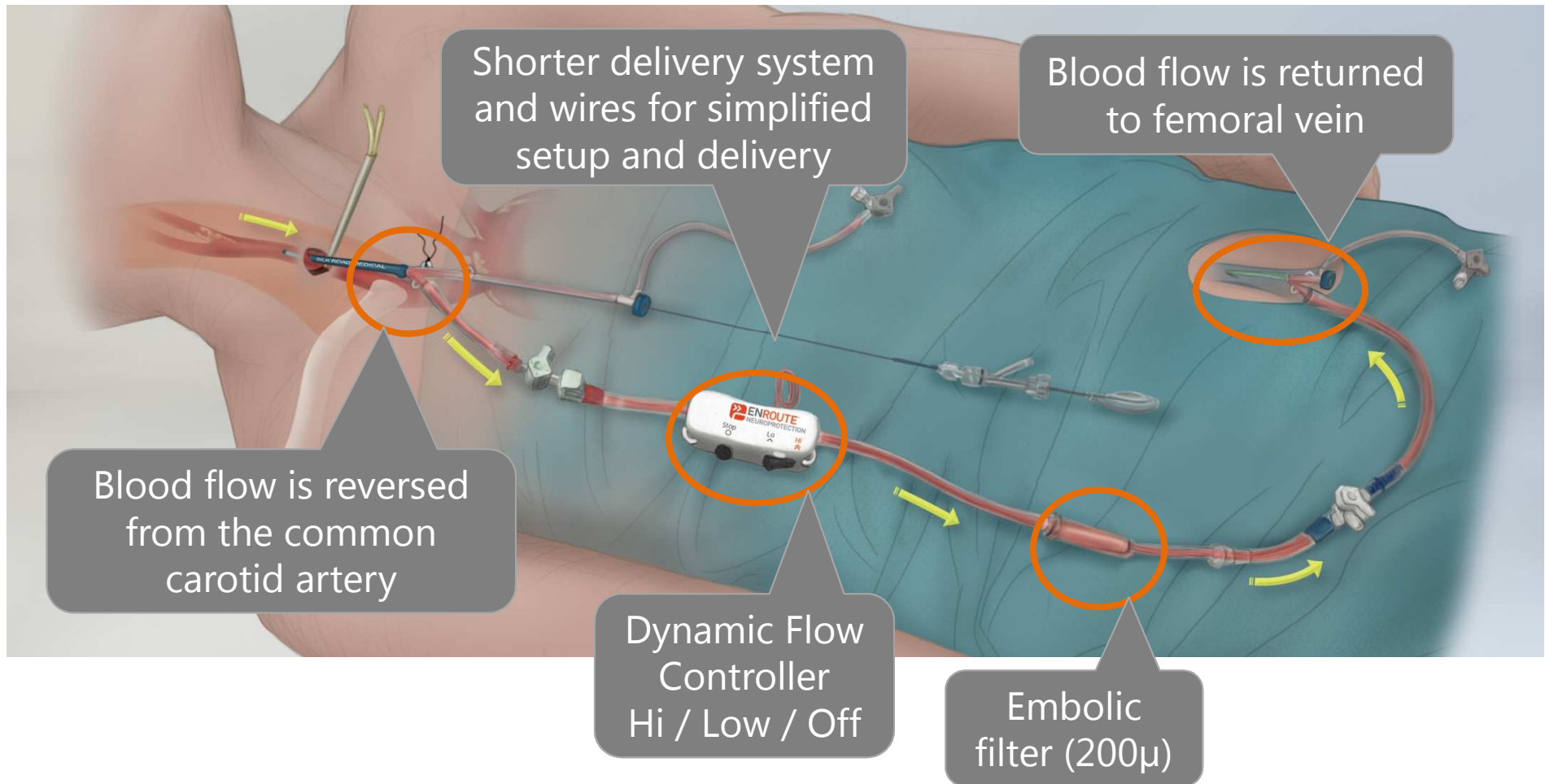
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- 3. MEMBRANE OR MESH COVERED STENTS TO STOP DELAYED STROKES**

# **SILK ROAD CERVICAL ACCESS SYSTEM WITH REVERSAL OF FLOW**

**Following Slides Courtesy Of  
Chris Kwolak & Sumaira Macdonald**

# A NEW, SURGICALLY-INSPIRED ENDOVASCULAR SOLUTION

## ENROUTE™ Transcarotid Stent and Neuroprotection System



*CAUTION: Investigational device. Limited by federal (USA) law to investigational use. The ENROUTE™ Transcarotid Stent and Neuroprotection Systems bear the CE mark of conformity and are available for sale in EU and EFTA countries.*

**SILKROAD**



# SURGICAL OUTCOMES IN STROKE REDUCTION

	Silk Road Clinical Studies		
	PROOF	TESLA	ROADSTER
Study type	First In Man	Multicenter EU Post-Market Registry	US Pivotal IDE
Number of Patients	75	58	141
Profile	All-comers	All-comers	High Surgical Risk
Status	Complete	Complete	Enrollment Complete



**FOR SYMPTOMATIC & ASX PTS  
IF THESE 3 ADVANCES  
DECREASE CAS STROKE RATES**

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**CAS WOULD BE MORE  
COMPETITIVE TO CEA  
& WOULD REPLACE CEA  
MORE WIDELY  
THAN IT DOES NOW**

**FOR ASYMPTOMATIC PATIENTS  
THERE ARE PROMISING WAYS  
ON THE HORIZON TO SELECT  
THOSE AT HIGH RISK OF STROKE**

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- 1. TCD DETECTED MICROEMBOLI**
- 2. DUPLEX PLAQUE EVALUATION**
- 3. MRI & CT PLAQUE EVALUATION**
- 4. SILENT MRI & CT INFARCTS**

**SOME ASX PT GROUPS HAVE >12%  
PER YEAR STROKE RISK vs <1%**

**THESE HIGH RISK  
ASYMPTOMATIC PTS **SELECTED**  
BY THESE METHODS CLEARLY  
WOULD BENEFIT FROM  
CAS OR CEA - IN ADDITION TO  
BEST MEDICAL TREATMENT  
THUS INCREASING THE NUMBER  
OF PATIENT NEEDING CAS**

**HOWEVER THERE IS 1 RESERVATION:**

**THAT IS**

**THE EFFICACY OF THESE 3 METHODS  
FOR DECREASING CAS STROKE  
RATES & IMPROVING ASX PATIENT  
SELECTION MUST BE PROVEN  
BY APPROPRIATE CLINICAL TRIALS**

# MY CONCLUSIONS

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1. DESPITE THIS RESERVATION  
I BELIEVE THE OUTLOOK FOR  
CAROTID STENTING OR CAS  
IS BRIGHT IN THE FUTURE
2. ALL VASCULAR SPECIALISTS  
SHOULD PREPARE FOR  
IMPROVING CAS RESULTS

**THANKS FOR YOUR ATTENTION**





# THE SILK ROAD PROCEDURE

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- Surgically Inspired - ***It's All about stroke***
  - Direct carotid access with CCA clamp & vessel control
  - Robust flow reversal akin to backbleeding
  - No discrimination – macro and micro emboli
  
- Transcarotid Endovascular Advantage
  - Procedural speed and interventional device control
  - Shorter delivery system and wires for simplified setup and delivery
  - Broad population of patients eligible for this procedure
  
- Patient Friendly, Less Invasive Procedure
  - Reduced rate and severity of cranial nerve injury
  - Local anesthesia can improve recovery time
  - Cosmetic result of a less invasive procedure

*ROADSTER Study to be presented at VIVA and VEITH, 2014*