

**LINC Status Update: Is Carotid Stenting  
Largely Equivalent to CEA For The  
Majority of Patients with Significant  
Carotid Disease & An Indication for  
Revascularisation?**

**What Are The Open Questions?**

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**LEIPZIG - JANUARY 22, 2019**

**I HAVE NO  
FINANCIAL CONFLICTS  
BUT - LIKE EVERYONE  
LOTS OF **BIASES****

# CAROTID DISEASE – ESP Rx OF ASX CAROTID STENOSIS; CAROTID STENTING (CAS); & CAS vs CEA ARE VERY CONTROVERSIAL TOPICS

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- FUELED BY TURF ISSUES
- SELF-INTEREST & **BIAS** ARE REAL  
IN EVERYONE'S OPINIONS, TALKS  
& WRITINGS

# MY BIAS

I AM NOT AGAINST

CEA OR CAS

CAS HAS A MAJOR ROLE

AS YET UNDEFINED

SO I AM A

**CAS** ENTHUSIAST

**EVIDENCED BY OUR**

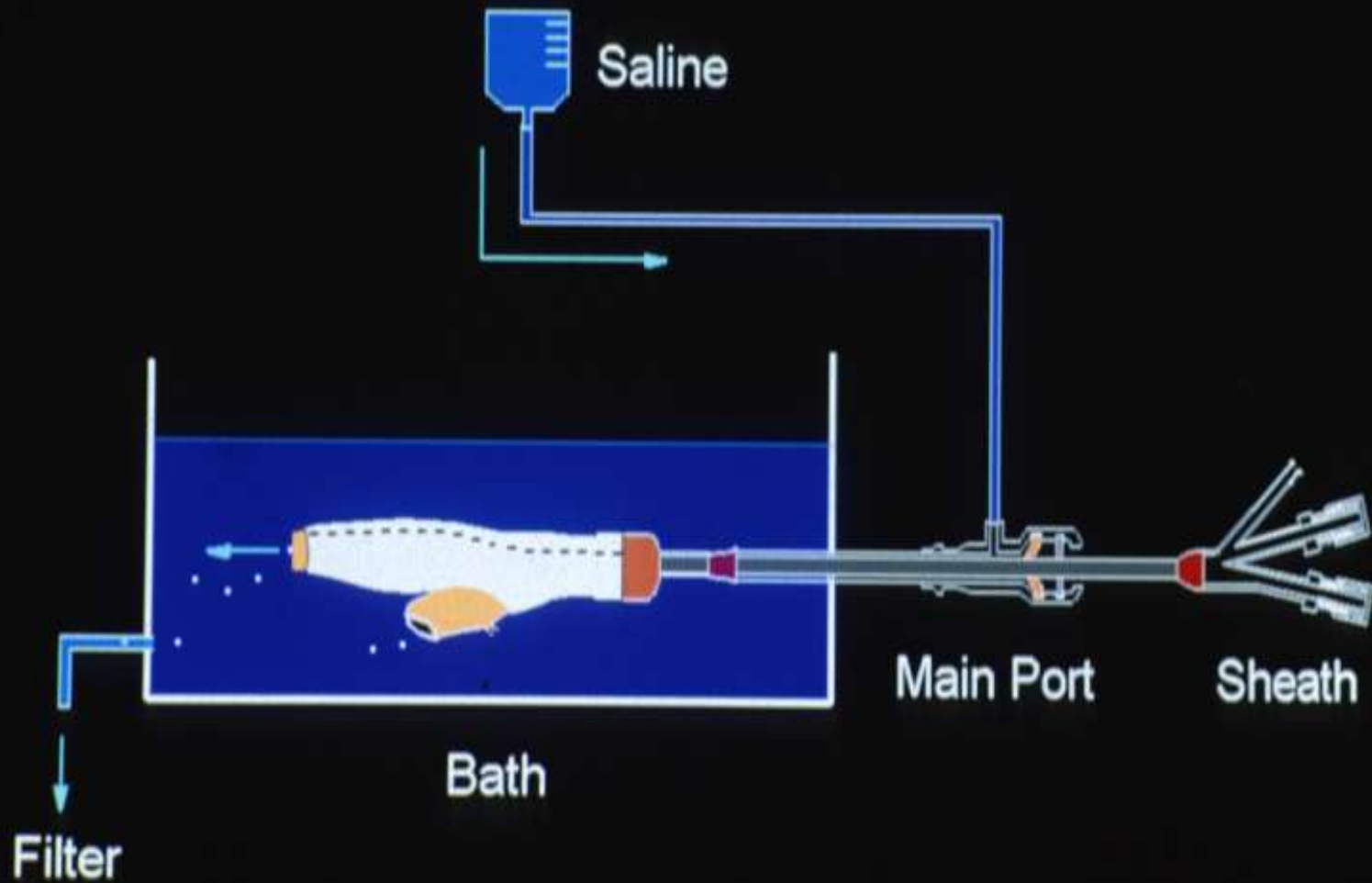
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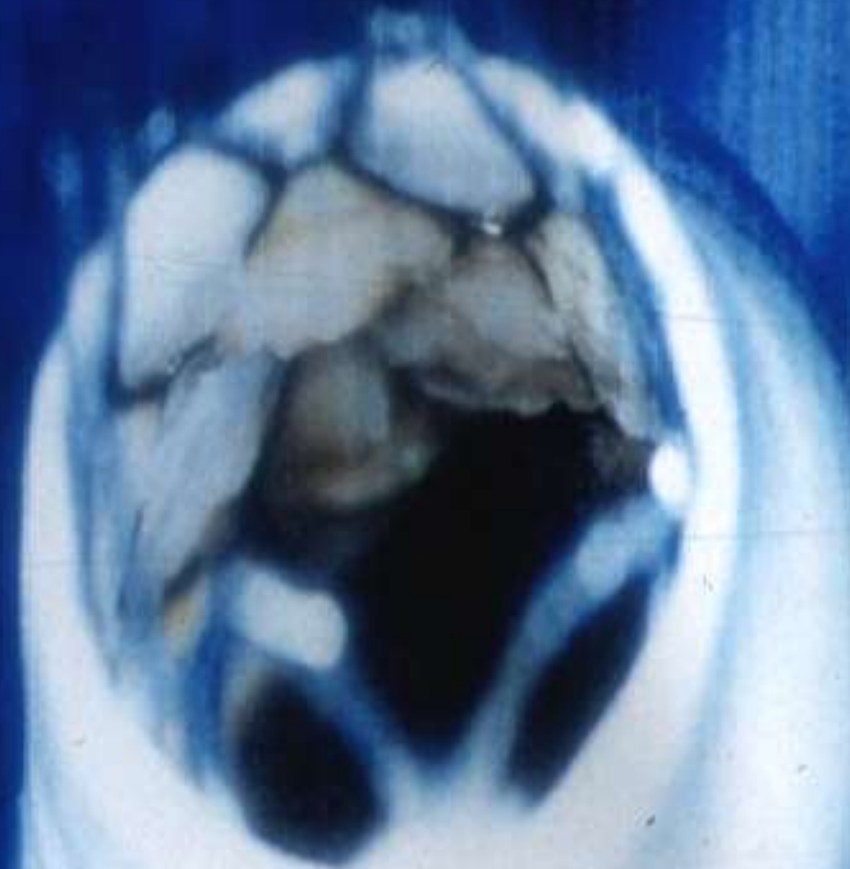
**1995 STUDY OF CAS  
IN AN IN VITRO MODEL  
WHICH LEAD TO ALL  
EMBOLIC PROTECT DEVICES**

# Preparation of Carotid Plaque

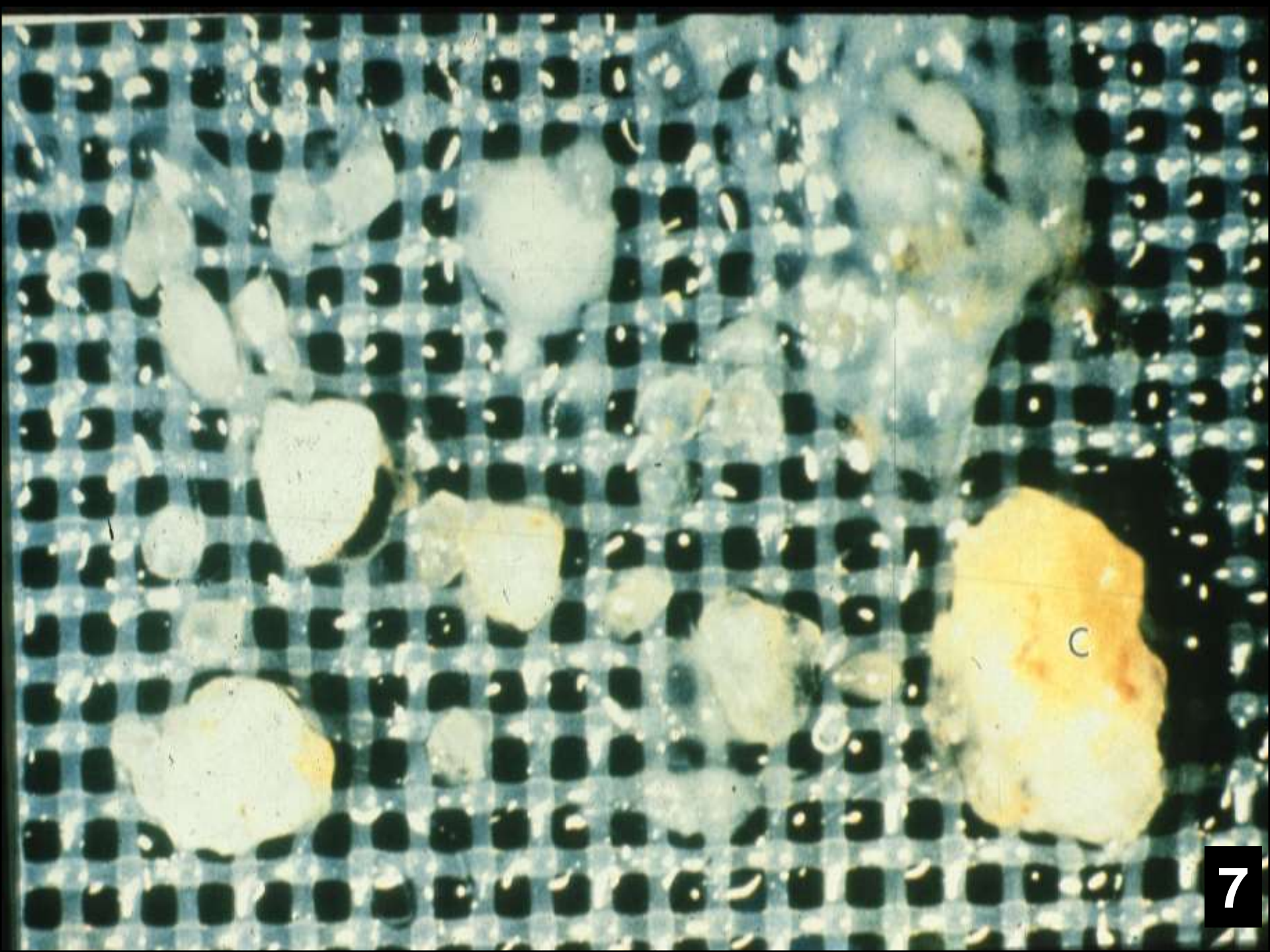


# Endovascular Bath



**A****B****6**





# **RECOGNIZING MY ENTHUSIASM AND BIASES...**

# MY OPINION I

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**MOST Sx HiG CS PATIENTS**

**SHOULD BE TREATED BY**

**CEA OR CAS**

**BUT THIS HAS NOT BEEN**

**PROVEN IN STATIN ERA**

**SINCE Sx LANDMARK TRIALS**

**HAD OBSOLETE MED Rx CONTROLS**

**HOWEVER**

**IN VIEW OF THE DRAMATIC ADVANCES  
IN MEDICAL TREATMENTS...**

# MY OPINION II

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**MOST ASX PATIENTS WITH  
CAROTID STENOSIS ARE  
BEST TREATED MEDICALLY  
& NOT BY CEA OR CAS**

**EXCEPTIONS BUT WITHOUT SOLID PROOF:**

**YOUNG PT W PIN HOLE STENOSIS,  
CL OCCLUSION, PLAQUE GROWTH OR  
ACTIVITY, SILENT MRI/CT STROKES OR  
CONTINUED TCD EMBOLIC HITS, ETC**

**SO WITH THOSE OPINIONS / BIASES  
IN MIND**

**Is Carotid Stenting  
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**What Are The Open Questions?  
AND MY OPINIONS RE THE ANSWERS**

# 1. FOR SYMPTOMATIC AND ASYMPTOMATIC PATIENTS - IS CAS EQUIVALENT TO CEA?

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- IN HANDS OF A FEW EXPERT OPERATORS FOR APPROPRIATE PATIENTS – **YES**
- FOR MOST OPERATORS – **NO**  
BECAUSE  
RCTs, REGISTRIES, POPULATION BASED STUDIES SHOW HIGHER STROKE RATES

## 2. FOR SYMPTOMATIC (SX) & ASYMPTOMATIC (ASX) PATIENTS WILL CAS BE EQUIVALENT TO CEA?

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- BASED ON PROMISING RESULTS WITH TCAR (TRANSCERVICAL TRANSCAROTID ARTERY REVASCULARIZATION & MESH COVERED STENTS – **YES**
- THE OUTLOOK FOR CAS IS BRIGHT !!! RESULTS MAY BE **BETTER** THAN THOSE OF CEA



### **3. FOR MOST ASYMPTOMATIC (ASX) PATIENTS WITH CAROTID STENOSIS WHAT IS THE BEST Rx: CAS/CEA/BMRx?**

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- **MUCH CONTROVERSY – BASED ON BIAS & EMOTION BECAUSE ANSWER UNKNOWN MAY NEVER BE KNOWN; Rxs IN FLUX**
- **NEED TO PICK OUT HI RISK ASX CS PATIENTS TO Rx WITH CAS OR CEA - NOT SIMPLE**
- **MY GUESS: INVASIVE Rx WILL BE NEEDED IN ~ 5% OF PTS WITH HI GRADE (70%) ASX CS**
- **CONTROVERSY WILL CONTINUE**

# 4. FOR SX & ASX CS PATIENTS WILL RCTs (LEVEL 1 EVIDENCE) PROVIDE CONCLUSIVE ANSWERS ?

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- PROBABLY **NOT**
- RCTs ARE FREQUENTLY FLAWED AND ALMOST ALWAYS OUT OF DATE – ESPECIALLY IN A RAPIDLY EVOLVING AREA LIKE CAS

# MY CONCLUSIONS

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- **Rx OF CAROTID STENOSIS WILL BE AN AREA OF GREAT INTEREST TO VSs FOR YEARS TO COME**
- **DISCUSSION, DEBATE AND HEATED CONTROVERSY WILL CONTINUE FOR YEARS**
- **FEWER PATIENTS WITH **ASX CS** WILL BE TREATED BY EITHER CAS OR CEA**
- **CAS WILL GAIN INCREASING MARKET SHARE OF PATIENTS TREATED INVASIVELY – DUE TO TCAR**

**THANKS FOR YOUR  
ATTENTION**



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