

M

Which beast you see?

Infiltrated Fistula



One Access For Lifetime

Is it possible???

Naveen Goel, MD, FASN

- Maintaining 90 + patients/ 10 years/ same access
- Considering Mortality Rate of almost 20%
- This is 'Astronomical Success Rate'

**Patient
education**



**Vessel
mapping**



**Access
creation**



**Fistula
Maturation**



**Clearance for fistula
usage**

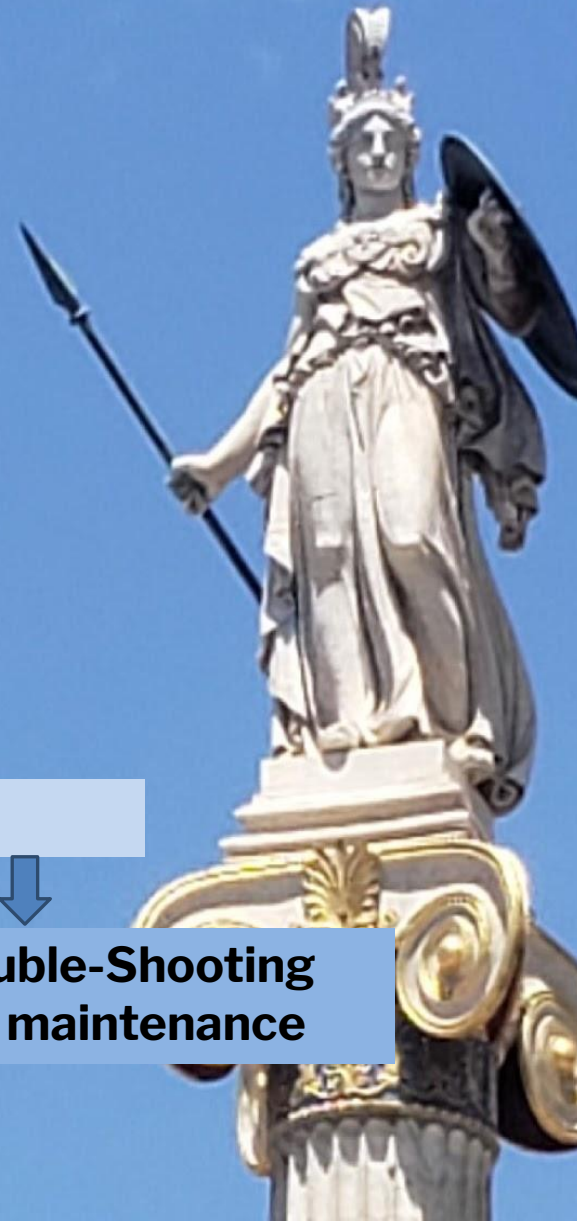


**Catheter
removal**



**Trouble-Shooting
and maintenance**

One Access for Lifetime



**Patient
education**

**Vessel
mapping**

**Interventioni
st**

**Vascular
Surgeon**

**Access
creation**

**Vascular
Surgeon**

**Fistula
Maturation**

**Interventioni
st**

**Clearance for fistula
usage**

**Interventioni
st**

**Catheter
removal**

**Interventioni
st**

Most Important

**Interventioni
st**

**Trouble-Shooting and
maintenance**

Cleared by Surgeon




**Would you cannulate this
fistula?**

**CALLED SURGEON – insisted to be
used**



**Per Surgeon Note
'Do not send patient to Access
Center'**



**Do not send
patient to Access
Center?**

**Would you cannulate this
fistula?**

**CALLED SURGEON – insisted to be
used**



Per Surgeon

**‘Do not send patient to Access
Center’**

Fistula Cannulation Protocol

Statement: Access plan for each patient will be based on maturity of their fistula.

Equipment: Stethoscope
Tourniquet
Needles: 1 inch 17g, 16g, and 15g
1.25 inch 17g, 16, and 15g
Consider types of safety needles

Assessment:

Access thrill and auscultate bruit every treatment.

Maturation time recommended 8-12 weeks but could be cannulated sooner according to surgeon/nephrologist order.

All new fistulas should be examined by **Interventionist**, nephrologist, or designated (trained, experienced) staff.

Procedure:

Week 1:

Consider decreasing heparin the first week to decrease possible bleeding.

Prep access per facility procedure.

ALWAYS place tourniquet.

Cannulate with two 17 gauge needles (Consider position and depth and use appropriate needle length size).

KDOQI recommends saline, wet sticks for initial cannulations.

Blood pump speed per order, not to exceed 200-250ml/min, based on pre-pump arterial pressure <-250.

Blood Pump speed should increase each treatment, not to exceed 300ml/min with 17gauge needles.

Note: Progression to week 2 occurs after 3 consecutive sticks without infiltrates or hematoma.

Week 2:

ALWAYS place tourniquet.

Cannulate with two 16 gauge needles (Consider position and depth and use appropriate needle length size).

May consider wet sticks.

Blood pump speed should start with 300ml/min to increase per treatment, not to exceed 350ml/min, based on pre-pump arterial pressure <-250.

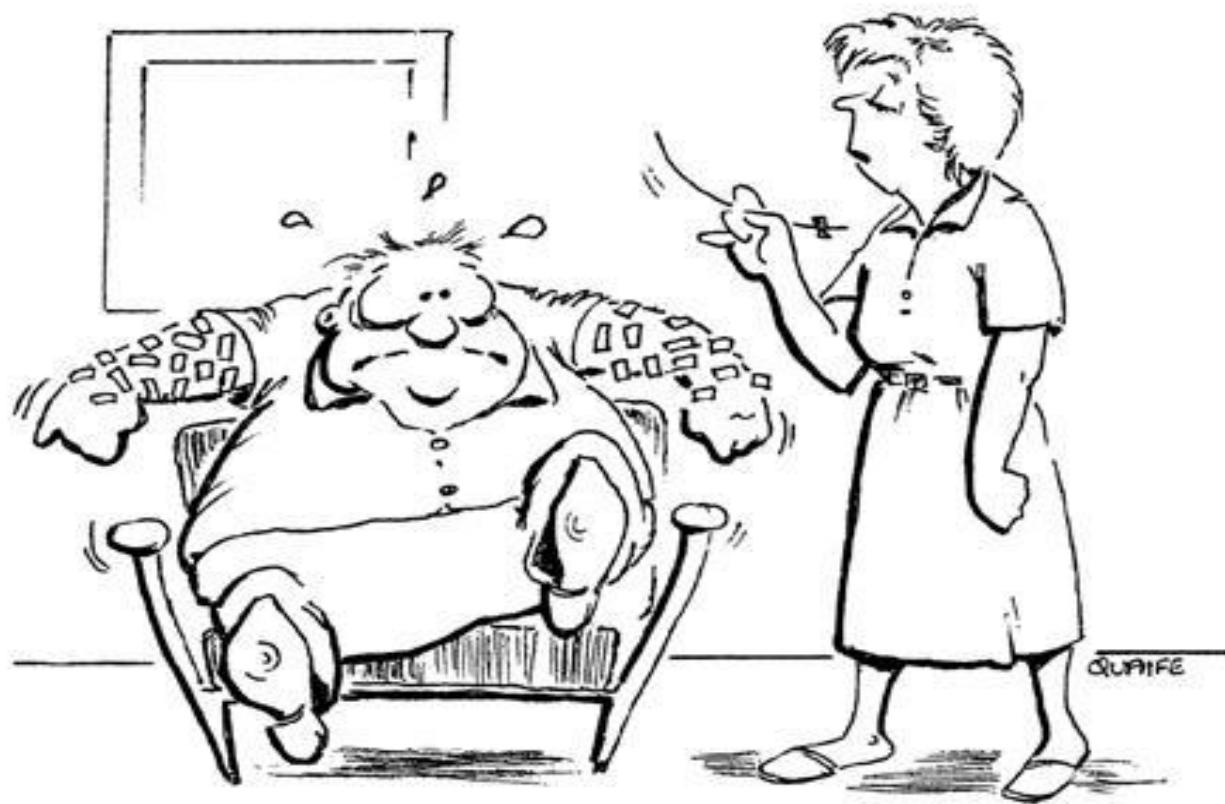
Note: Progression to week 3 occurs after 3 consecutive sticks without infiltrates or hematoma.

Week 3:

ALWAYS place tourniquet.

Cannulate with 15 gauge needles (Consider position and depth and use appropriate needle length size).

Blood pump speed can advance to prescribed flow based on needle size and pre-pump arterial pressure <-250ml/min.



Don't worry, I'll find a good site soon.





Needles are Painful

Please Do not try one more time

Zoom: 1

3-4mm fistula body

Pseudo-aneurysm formation
at posterior wall due to
multiple cannulation attempts

12L5V
E/3/D/H/TV2

4 cm

R

Q. Can this be
avoided?

A

Assessment??

THM:

- 0 1. Please evaluate the Access on your own...
- 0 2. Discernible margins if most important rule
- 0 3. Do not cannulate if not feeling comfortable
- 0 4. Refer Early

Immature fistula thrombectomy



98 (Fr: 1/2)

s
Ac

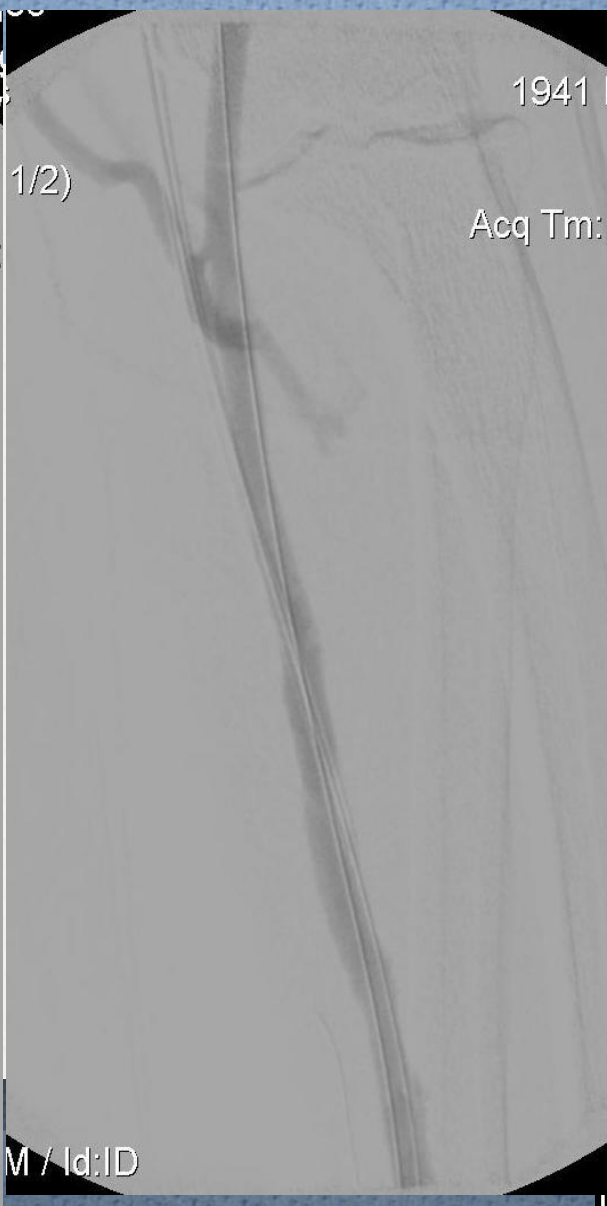
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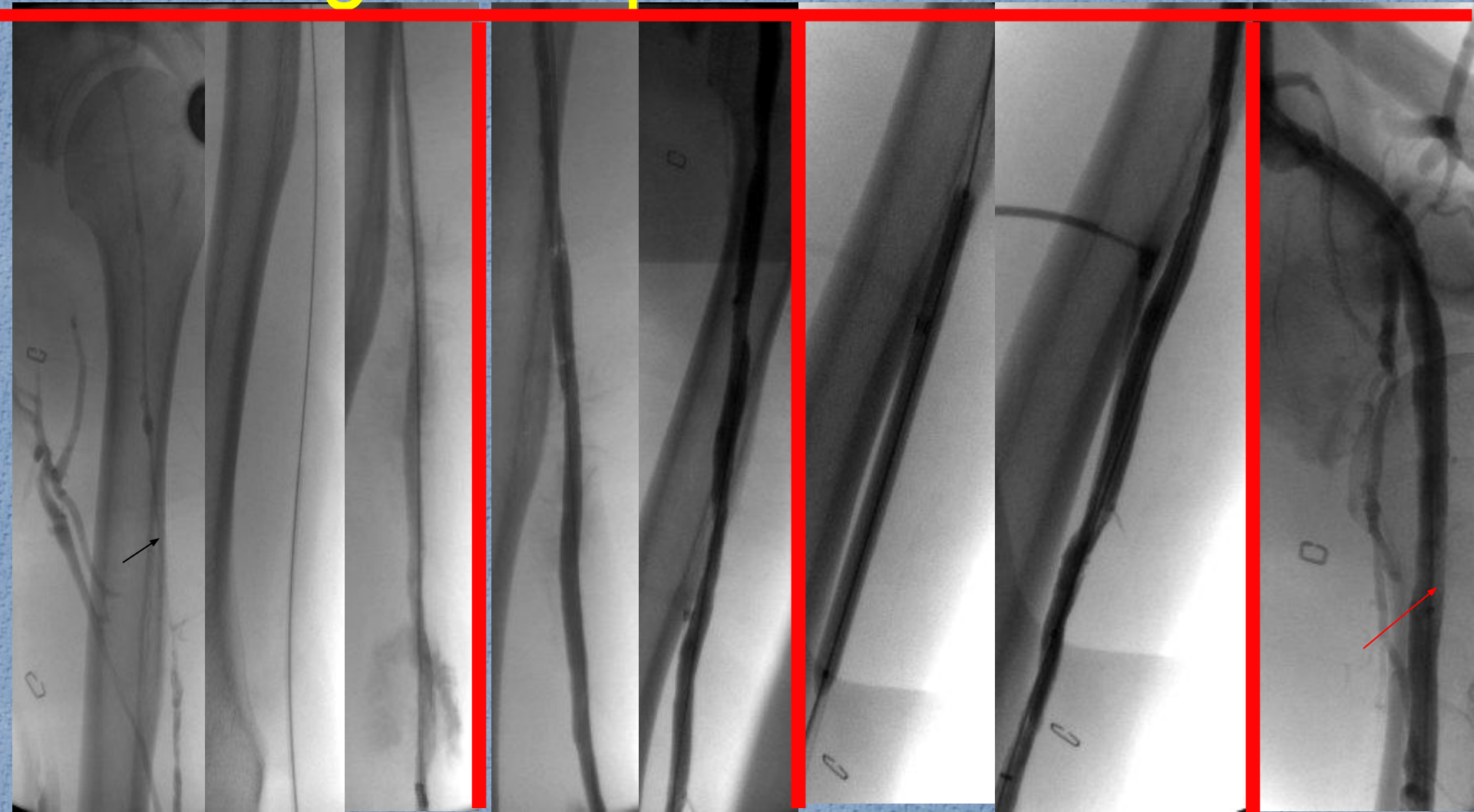
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Staged sequential dilatation

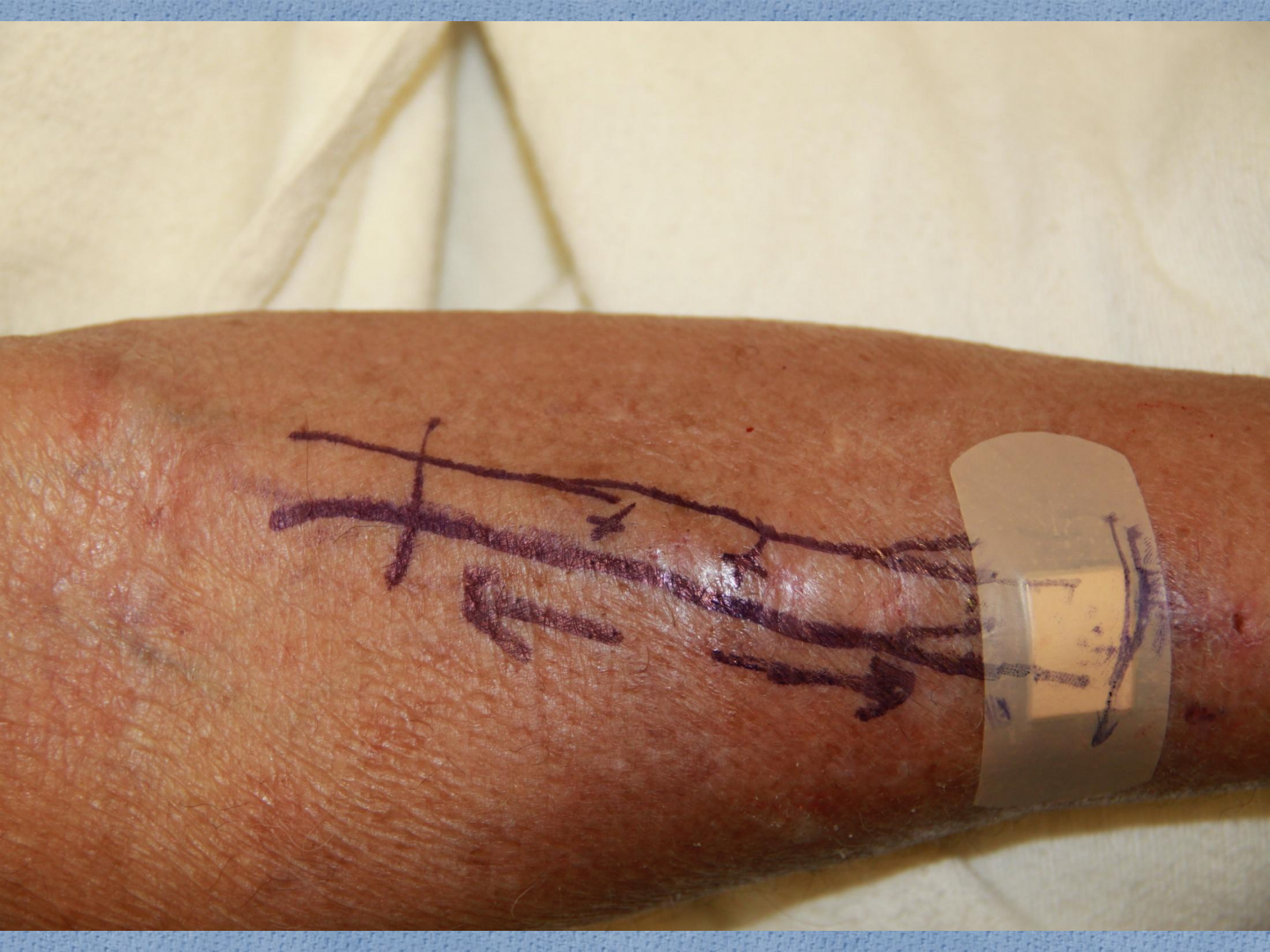


Immature fistula
Initial BAM

2 weeks

4 weeks

6 weeks



0 **Aggressive approach to salvage non-maturing arteriovenous fistulae: a retrospective study with follow-up**

0 **Gregg A. Miller¹, Naveen Goel², Aleksandr Khariton¹, Alexander Friedman¹, Yevgeny savransky³, Ilya trusov¹, Kiran Jotwani⁴, Eric savransky¹, Dean Preddie¹, William Perry Arnold¹**

0 **Abstract:** *Purpose:* to establish a standardized approach for the maturation of non-maturing arteriovenous fistulae. *Methods:* consecutive patients (n=122) with non-maturing fistulae presented to our outpatient vascular access center for percutaneous interventions to assist in maturation. the techniques used included flow rerouting, competing branch vein elimination, staged balloon angioplasty, and limited controlled extravasation.

0 **Results:** successful fistula maturations were achieved in 118/122 patients. Fistulae were divided into two classes according to initial vessel size: class 1 (6.0-8.0 mm diameter, >6 mm deep) and class 2 (2.0-5.0 mm diameter) fistulae were evaluated for differences in technical procedures and clinically successful fistula maturation. class 1 and class 2 fistulae were evaluated for mean number of procedures to maturation (1.6 and 2.6, respectively), and time to maturation (5 and 7 weeks, respectively). Follow-up for 109 of the initial 118 patients was achieved (mean=24 months, range=0.25-60 months). class 1 and class 2 fistulae had primary patencies of 17 and 39% at 6 months; and secondary patencies of 72 and 77% at 12 months, 53 and 61% at 24 months, and 42 and 32% at 36 months, respectively. Primary and secondary patencies (Mann-Whitney test, p=0.44 and p=0.38, respectively) of class 1 and class 2 fistulae did not differ significantly, and secondary patencies were comparable to other fistula salvage studies.

0 **Conclusion:** Fistula salvage attempts should not be limited by factors such as

A scenic view of a coastal town, likely Santorini, Greece. In the foreground, a restaurant terrace with white walls and a tiled floor is visible. Several tables are set with blue and white tableware, and a group of people is seated at one of the tables. A large, closed patio umbrella stands near the group. The terrace overlooks a deep blue harbor where a large white cruise ship is docked. Several smaller boats are also visible in the water. In the background, dark, rugged mountains rise from the water's edge under a clear blue sky with a few wispy clouds. The word "CASES?" is superimposed in large, black, serif font over the right side of the image.

CASES?







What if it bursts on you?

Special thanks to the patient for
providing this picture for
education..

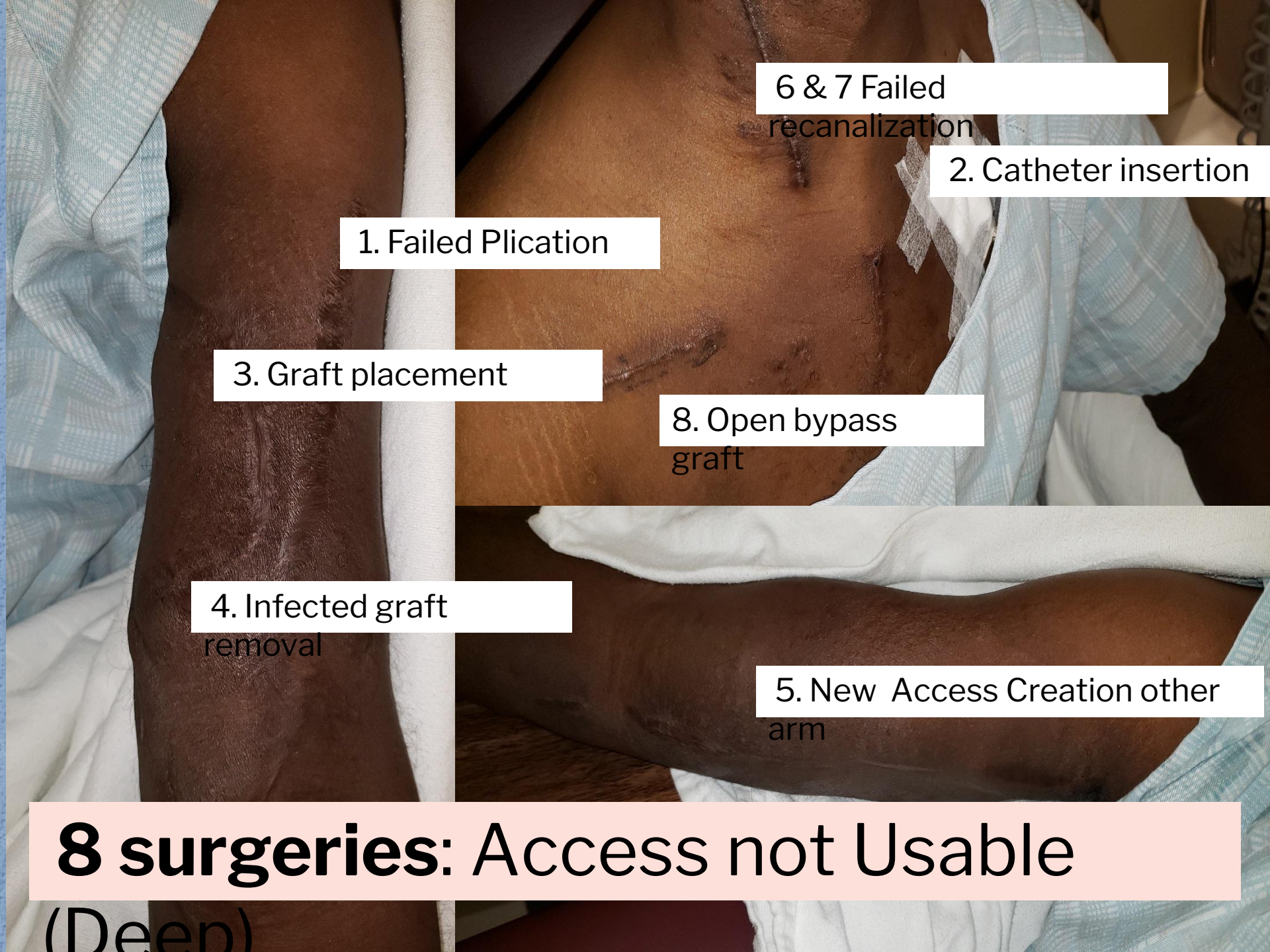




Infection Vs. Pseudoaneurysm?







1. Failed Plication

3. Graft placement

4. Infected graft
removal

6 & 7 Failed
recanalization

2. Catheter insertion

8. Open bypass
graft

5. New Access Creation other
arm

8 surgeries: Access not Usable

(Deen)

More Cases??



Button Holes



Infected Button Holes



Complications





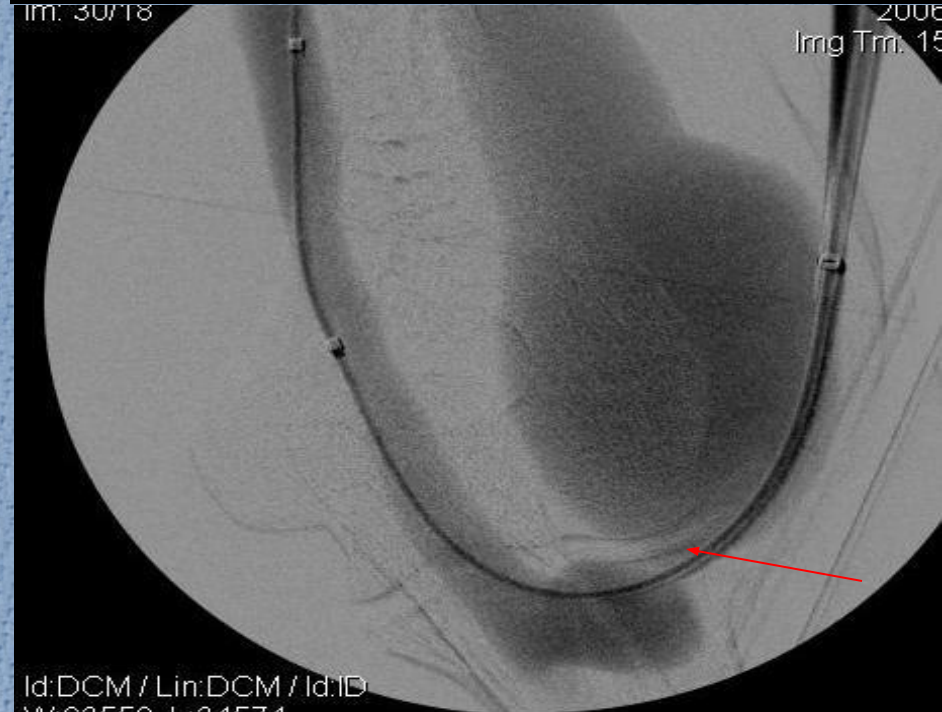


Mega/ High Output Fistula



Flow Reduction Procedure





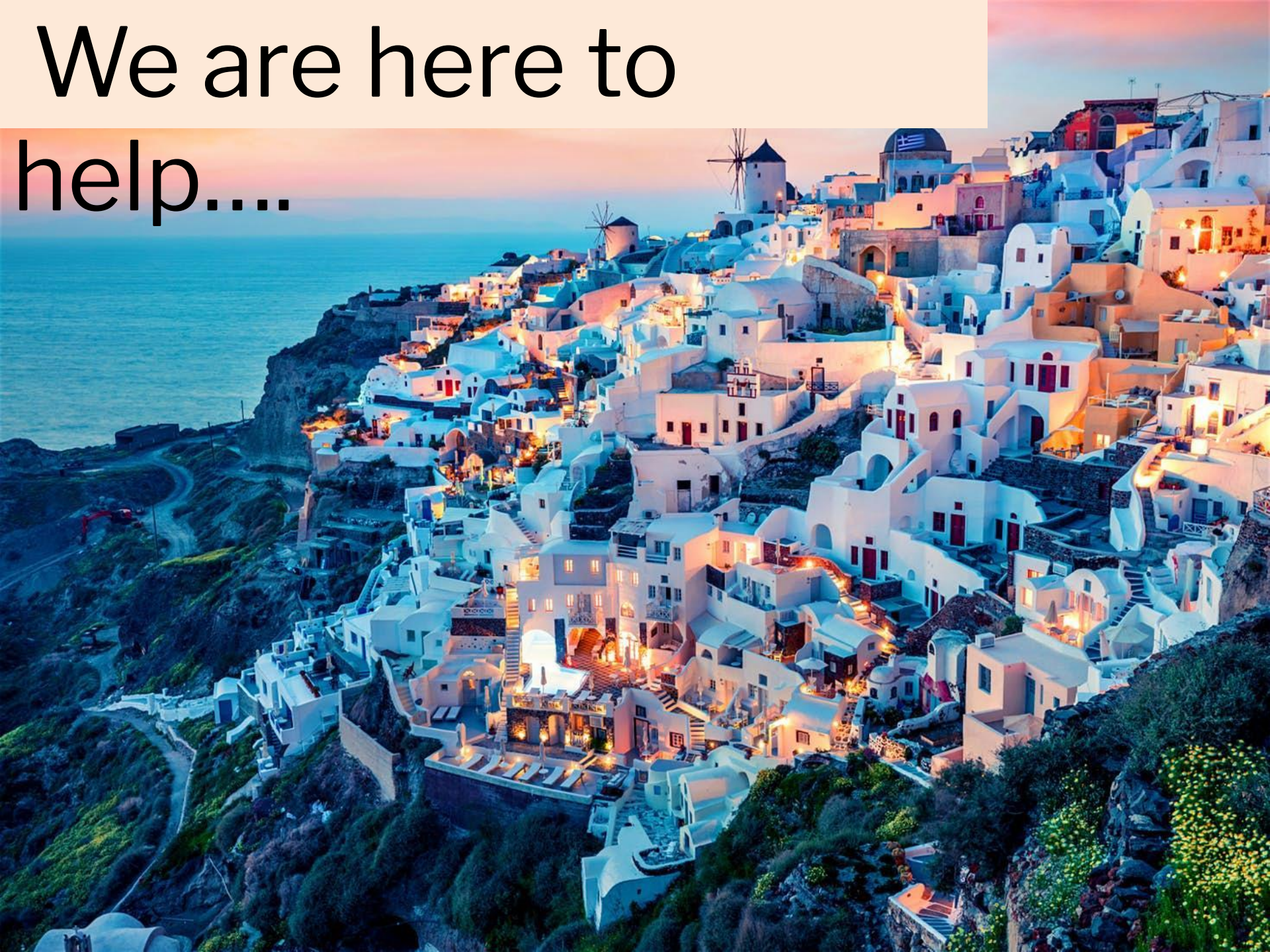
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Please Help Your
Patients....



We are here to
help....



Take Home Messages

- o Call Early – Plan Early
- o Patient not feeling good – needs to go to the hospital
- o NPO 6-8 hrs
- o Allergies – Iodine – Premedicate (C/I breathing difficulty)
- o Do not send patient home (Transportation problems)
- o Blood thinners (catheter patients)
- o Last Dialysis < 4 days (5th day absolute no)
- o Insurances
 - o Humana high risk
 - o Care Plus
 - o Medicaid / HMO's
 - o Avmed