

CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE
CONTROVERSIES & UPDATES IN VASCULAR SURGERY

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MARRIOTT RIVE GAUCHE & CONFERENCE CENTER

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Patient Safety in Vascular Access Planning and Construcion

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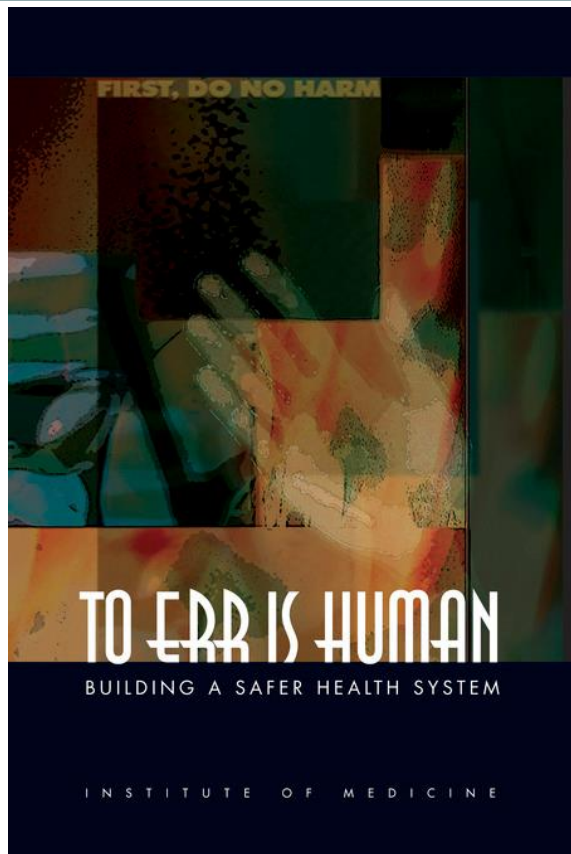
Disclosure of speaker's interests

❖ Consulting fees from:

❖ W.L. Gore and Associates

❖ Bard Peripheral Vascular

TO ERR IS HUMAN: BUILDING A SAFER HEALTH SYSTEM



Free download (legal)

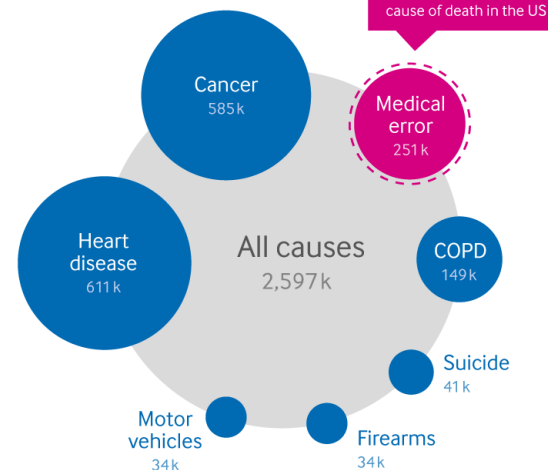
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Centers for Disease Control and Prevention (CDC)

Medical error - the third leading cause of death in the US

Causes of death, US, 2013



However, we're not even counting this - medical error is not recorded on US death certificates

thebmj Read the full article online
<http://bmj.co/mederr>

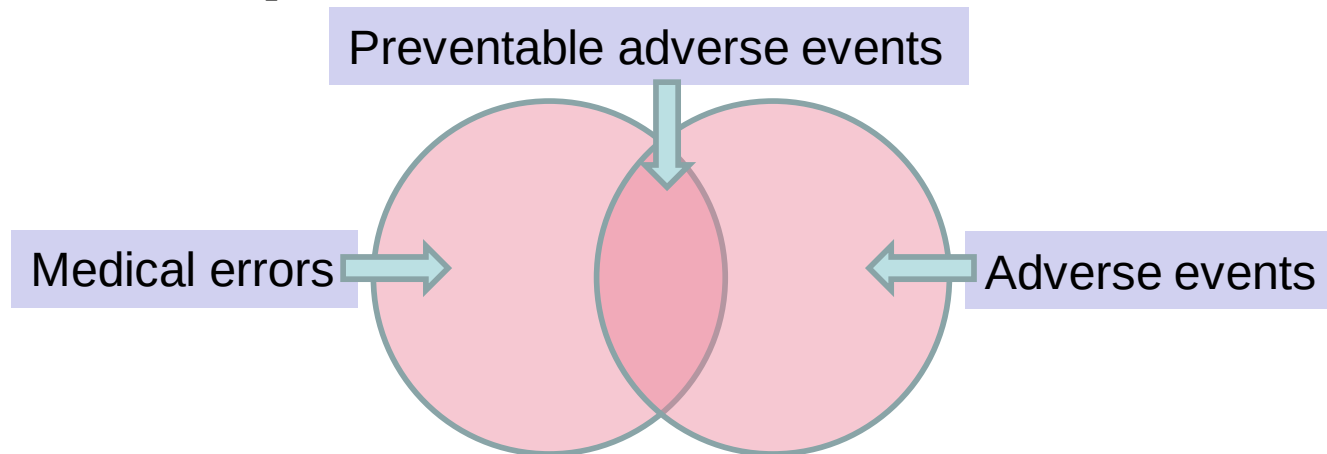
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Introduction Definitions

- ❖ Patient safety refers to the absence of errors and preventable adverse events in health care
- ❖ **Interventions:** activities and policies which reduce the frequency or consequences of preventable adverse events improve patient safety.
- ❖ **Adverse events:**
 - ❖ A patient has been harmed
 - ❖ Caused by medical management
- ❖ **Medical error:**
 - ❖ **Error of execution:** failure of planned action to be completed as intended
 - ❖ **Error of planning:** the use of a wrong plan to achieve an aim
- ❖ Adverse events caused by medical error are by definition preventable and are thus called “preventable adverse events”.



Applicable interventions in vascular access surgery

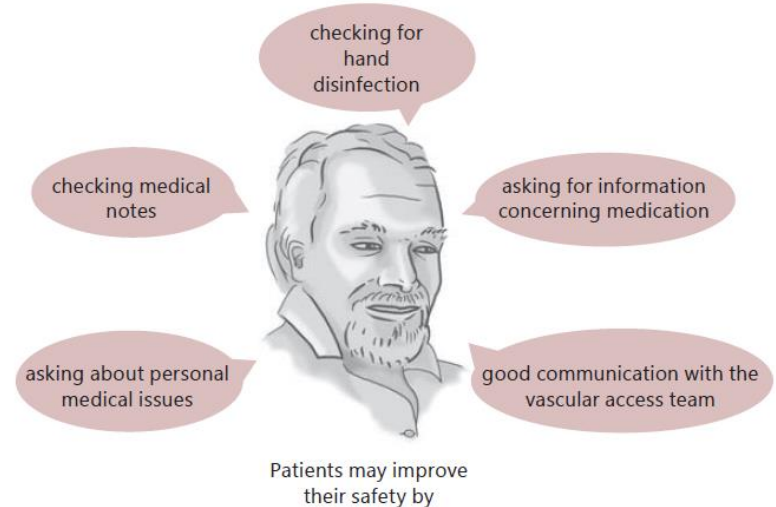
- ❖ Use of safety checklists
- ❖ Adherence to a care pathway
- ❖ Team training
- ❖ Sub-specialization in vascular access surgery
- ❖ Physician involvement in postoperative care
- ❖ Ultrasound guided catheter insertion
- ❖ Future research should focus on demonstrating a measurable reduction in adverse events from patient safety initiatives

The patient's role in patient safety practicing safety-related behaviors

- ❖ Reducing their susceptibility to medical errors by practicing safety-related behaviors to reduce the risk of or even prevent medical errors.

Definition

“any behavior that patients participate in, to reduce or prevent the risk of a medical error or to mitigate the effects of an error when it occurs.”



- ❖ The patient or their relatives should be encouraged to be involved in the care process, oversee care processes and report on complications.

Patient participation in Safety-related behaviors

- ❖ Three things will be required of the patient:
 - ❖ Knowledge on how to participate
 - ❖ Ability to participate
 - ❖ Willingness to participate.
- ❖ Unfortunately, many dialysis patients are not able to participate
 - ❖ A family member may represent the patient or take his place in order to preserve patient participation in patient safety management.

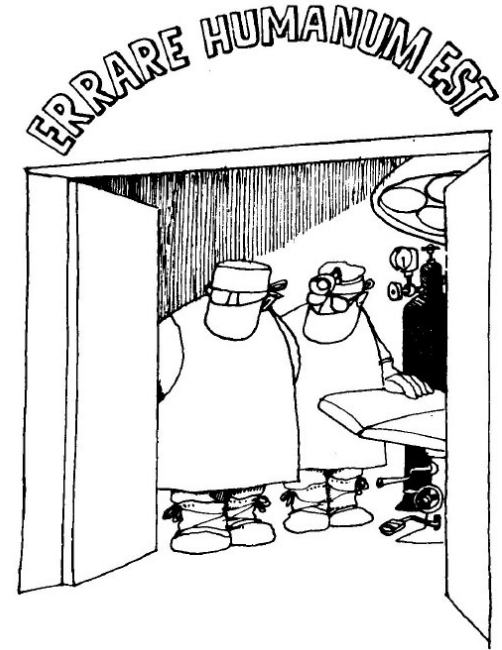
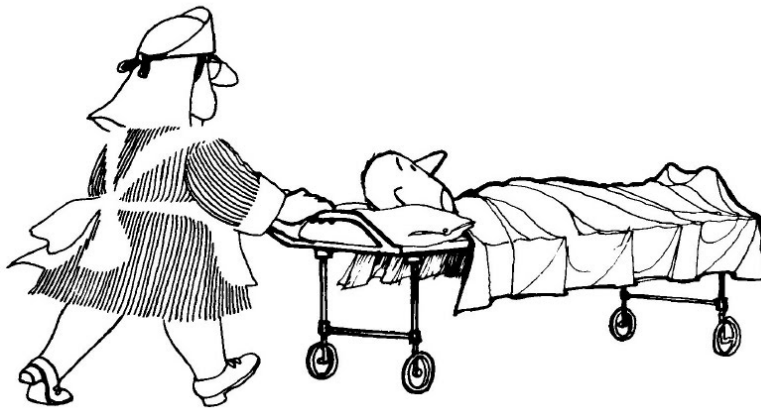
Barriers affecting patient involvement

- ❖ Intrapersonal factors
 - ❖ Patient related barriers such as the patient's degree of comfort in questioning staff about treatment
- ❖ Interpersonal factors impacting on how the two sides interact
 - ❖ Interactions between patients and health care professionals. Such as the surgeon encouraging the patient to challenge medical decisions
- ❖ Cultural factors - the patient-clinician encounter
 - ❖ For example, whether staff are willing to have their judgment questioned in the first place

Patient empowerment

- ❖ Empowerment should be a fundamental feature of any intervention aimed at increasing the patient's level of confidence in performing safety-related behaviors.
- ❖ A major cultural barrier to patient empowerment and, in turn, patient involvement is professional defensiveness and resistance to move away from the paternalistic viewpoint that the 'doctor knows best'
 - ❖ For example, physicians may be antagonistic to increasing patient involvement because of a cultural outlook that discussion of risk may have a negative psychological impact.

TO ERR IS HUMAN



*“That which is hateful to you, do not do to your fellow.
That is the entire Torah.
The rest go and learn by yourself.”*

Rabbi Hillel, Babylonian Talmud, 113B.C.- 8A.D.

The first meeting: doctor and patient

- ❖ Initiate lifelong bonding with the patient
- ❖ Break the barrier between you and the patient
 - ❖ Tip: you can start asking about the family name
- ❖ Empathy is essential
- ❖ Talk to the patient eye to eye
- ❖ Share with the patients your thoughts and concerns

Don't patronize on the patients, be there guide
not there god.

Introductory meeting with the patient: Pre-operative assessment

- ❖ Who is the patient?
 - ❖ Age
 - ❖ Gender
 - ❖ Prognosis, life expectancy
 - ❖ Pre-dialysis?
 - ❖ Operative risk
- ❖ Clinical condition
 - ❖ Can the patient lie supine for the surgery?
 - ❖ Require oxygen?
 - ❖ BMI - Body Mass Index = $Weight / Height^2$

Introductory Meeting with the Patient: Medications

❖ Medications

- ❖ Allergy
- ❖ Take the medications prior to surgery
- ❖ Insulin special instructions

❖ Anticoagulants

- ❖ Coumarins (vitamin K antagonists)
- ❖ Low molecular weight heparin
- ❖ Synthetic pentasaccharide inhibitors of factor Xa Fondaparinux
- ❖ Direct factor Xa inhibitors: rivaroxaban, apixaban and edoxaban
- ❖ inhibitors of factor Ila: dabigatran

❖ Antiplatelet Medications

- ❖ Irreversible cyclooxygenase inhibitors
 - ❖ Aspirin, Triflusal (Disgren)
- ❖ Adenosine diphosphate (ADP) receptor inhibitors
 - ❖ Clopidogrel (Plavix), Prasugrel (Effient), Ticagrelor (Brilinta), Ticlopidine (Ticlid)
- ❖ Phosphodiesterase inhibitors
 - ❖ Cilostazol (Pletal)
- ❖ Glycoprotein IIB/IIIA inhibitors (intravenous use only)
 - ❖ Abciximab (ReoPro), Eptifibatide (Integrilin) Tirofiban (Aggrastat)
- ❖ Adenosine reuptake inhibitors
 - ❖ Thromboxane inhibitors

Introductory Meeting with the Patient:

Medical record

- ❖ Congestive heart disease
- ❖ Diabetes mellitus
- ❖ Hypertension
- ❖ Previous vascular access surgery
 - ❖ Thrombophilia hypercoagulability
 - ❖ SLE
 - ❖ Rheumatoid arthritis
 - ❖ Inflammatory bowel diseases
- ❖ CABG using LIMA/RIMA

Introductory Meeting with the Patient

Physical examination

- ❖ Blood pressure measurements, both arms!
 - ❖ ≥ 15 mmHg requires additional workup
 - ❖ Avoid using the low pressure arm!
- ❖ Central vein catheter
 - ❖ When and how long
 - ❖ Where
 - ❖ Preoperative venography
- ❖ Peripheral central vein catheters. Picc lines
- ❖ Ports
- ❖ Mastectomy $\pm$ Axillary Lymph Node Dissection
- ❖ Colostomy/Ileostomy

Introductory Meeting with the Patient: Physical examination

❖ Pacemakers

- ❖ where? right or left or both
- ❖ Avoid vascular access on ipsilateral arm
- ❖ Preoperative venography

❖ Implantable Cardioverter Defibrillator (ICD)

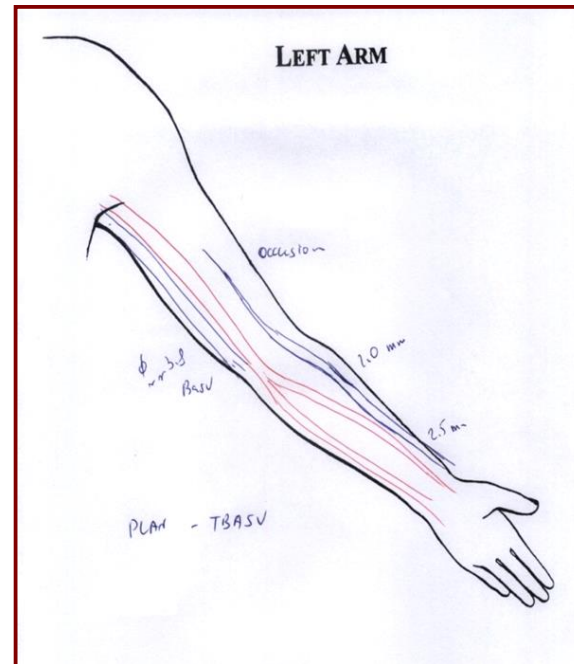
- ❖ Reprogrammed to “off” during surgery and turn it “on” postoperatively
- ❖ external defibrillators are used for intra-operative VT/VF
- ❖ The device should always be checked after operation.
- ❖ Monopolar diathermy

Central vein occlusion-induced severe edema “Error of planning”



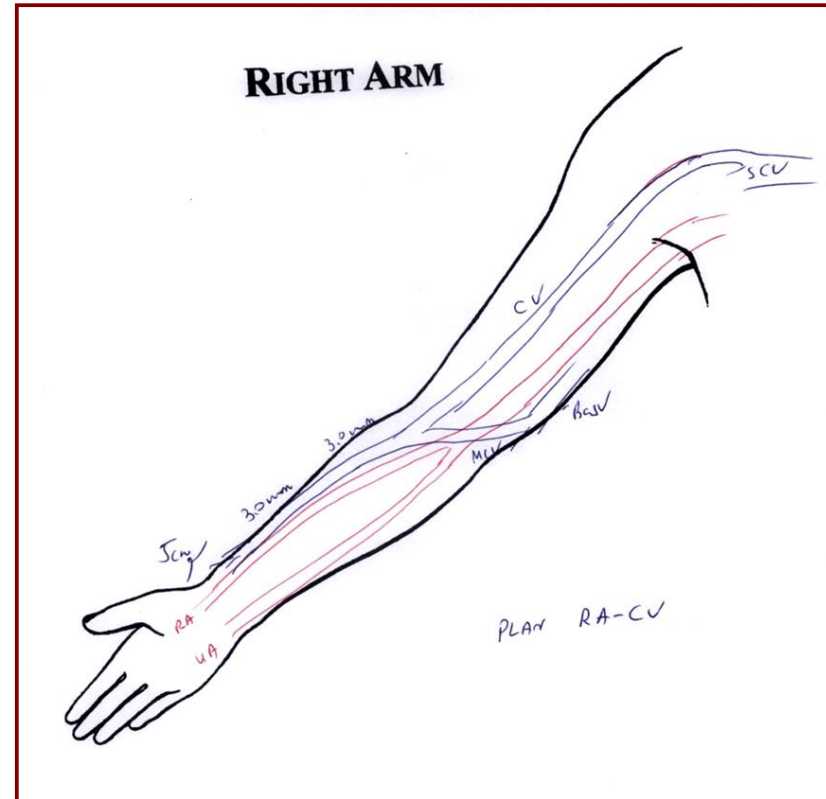
Venous mapping, an error of planning

Longitudinal venous mapping



Venous mapping

Right arm

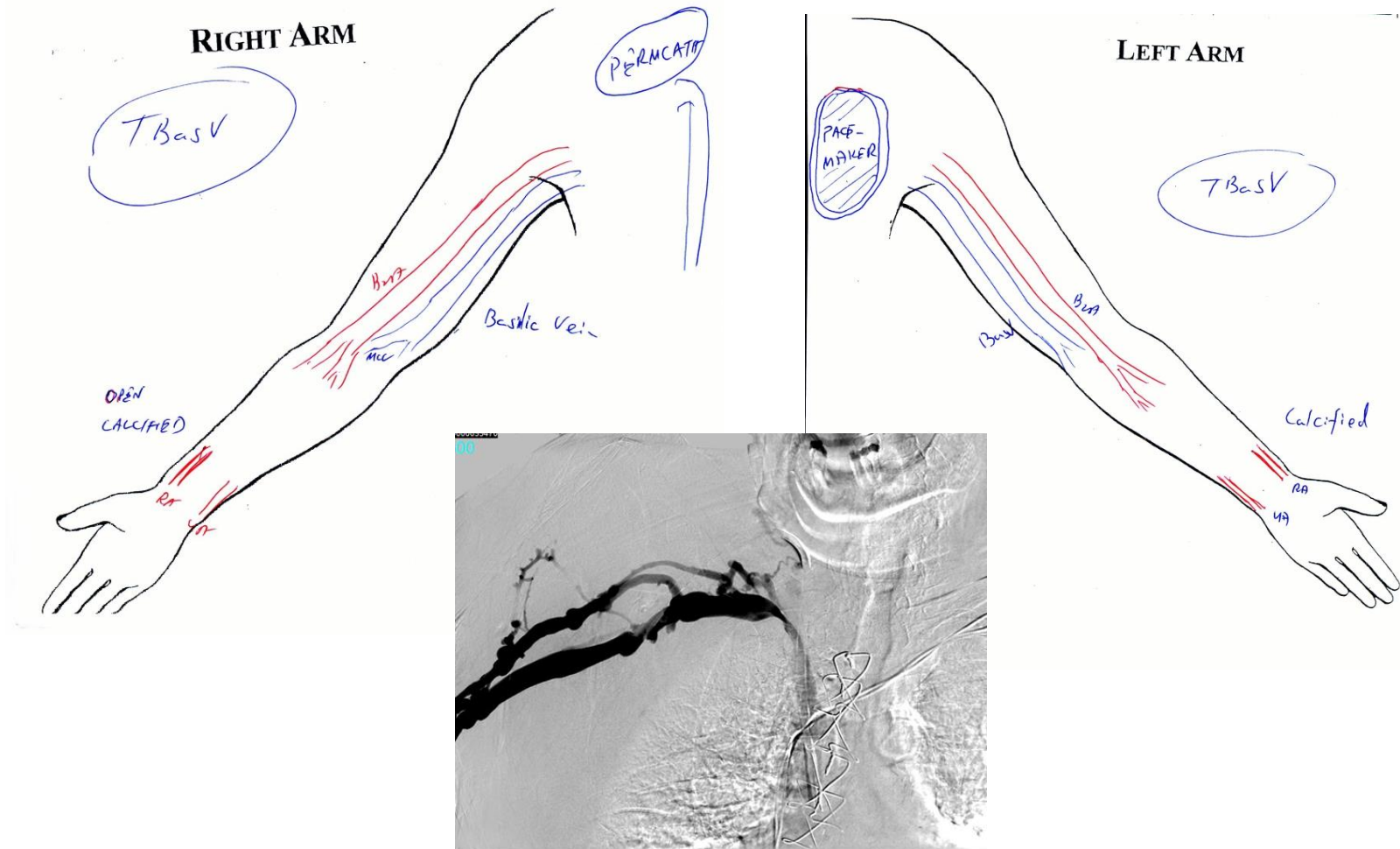


Patient 1 a.b.

- ❖ 83 year old male
- ❖ Etiology: Uro-mechanical
- ❖ Line sepsis
- ❖ Hemodialysis via right permcath
- ❖ Pacemaker left
- ❖ Plan: Right graft or basilic vein transposition



Patient safety oriented drawing of the surgical plan

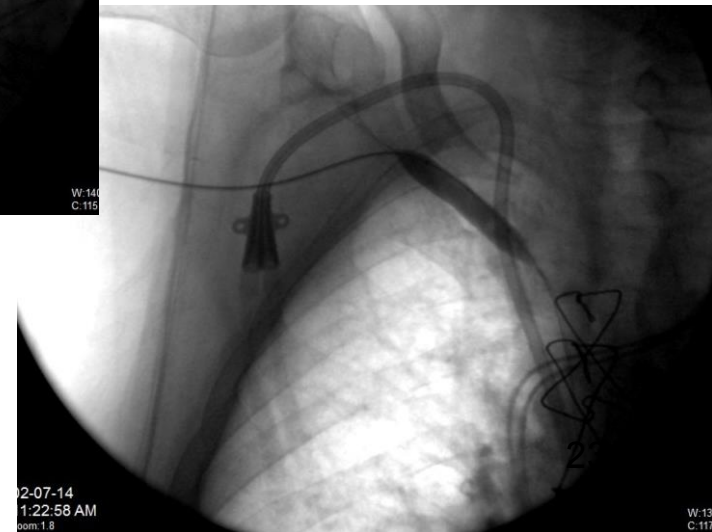
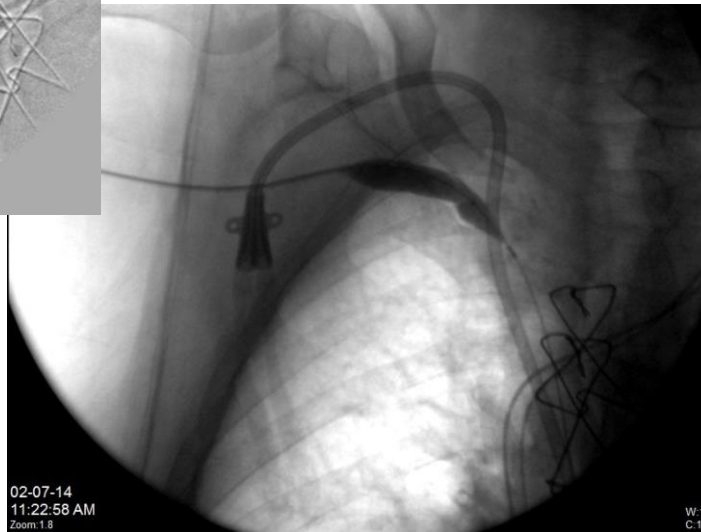
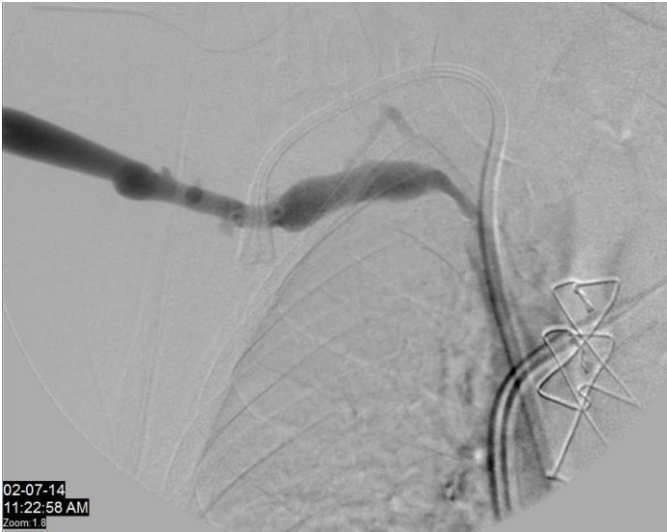


Intraoperative angioplasty *via a side branch*



Strong pulse and diminished thrill

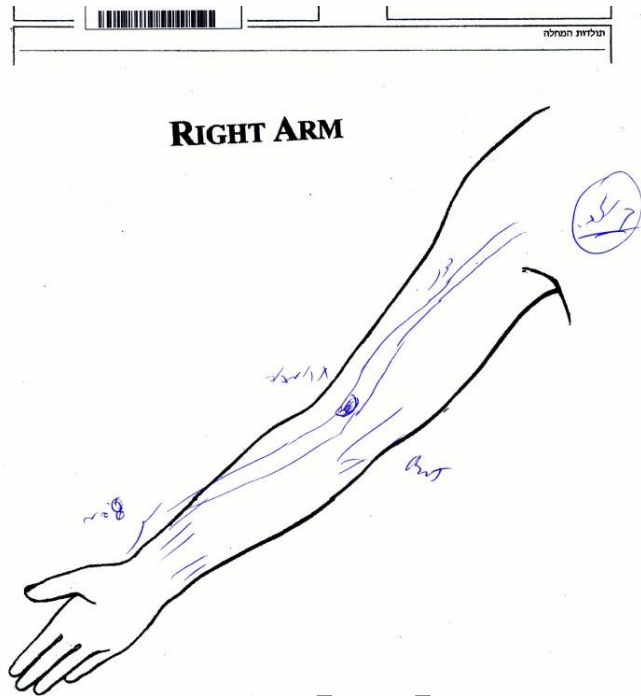
Intra-operative angioplasty



Patient 2 S.Y.

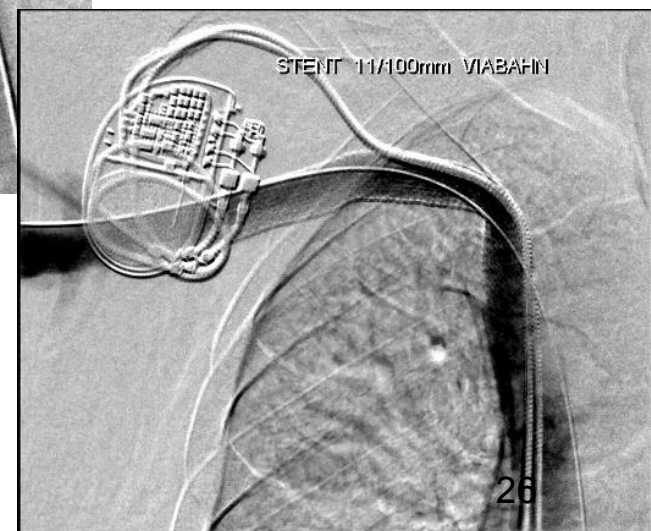
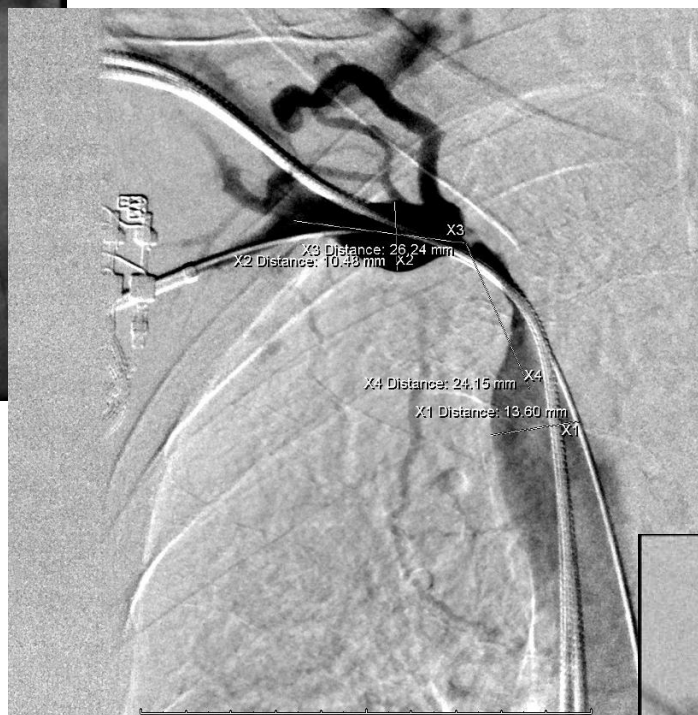
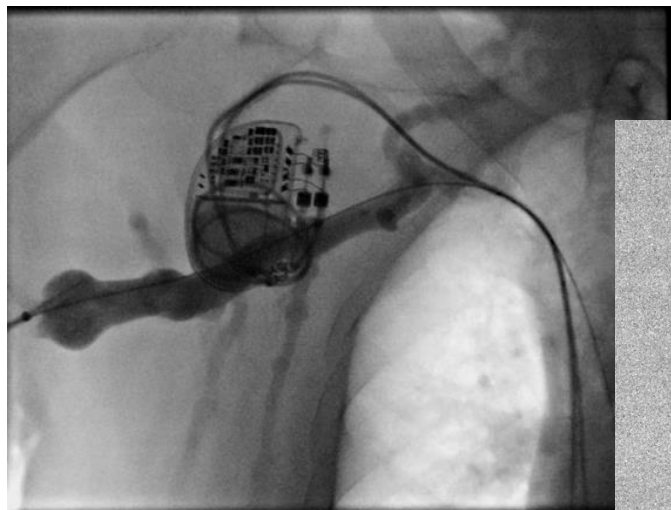
- ❖ 80 YEARS OLD MAN
- ❖ CHRONIC OBSTRUCTIVE PULMONARY DISEASE
- ❖ CONGESTIVE HEART FAILURE - SEVERE
- ❖ END STAGE RENAL FAILURE (ESRF, ESRD) - PREDIALYSIS
- ❖ HYPERTENSION
- ❖ HYPERLIPIDEMIA
- ❖ ABDOMINAL AORTIC ANEURYSM (AAA)
- ❖ AORTO BIFEMORAL BYPASS
- ❖ PERIPHERAL VASCULAR DISEASE,
- ❖ OBSTRUCTIVE SLEEP APNEA ON BIPAP
- ❖ PERMANENT PACEMAKER
- ❖ ANEMIA
- ❖ CVA
- ❖ PERCUTANEOUS GASTROSTOMY (PEG)

Preoperative CO₂ Venography



Surgical plan:
Radial Cephalic Fistula

Patient 2, one year later



VIABAHN STENT GRAFT 11X100
HEPARIN BONDED

Patient 3_{N.O.}

- ❖ 73 YEARS OLD MAN
- ❖ END STAGE RENAL FAILURE
- ❖ CHRONIC HEMODIALYSIS VIA RT PERMACATH 3 MONTHS
- ❖ DIABETES MELLITUS- TYPE II / I
- ❖ HYPERTENSION
- ❖ PERIPHERAL VASCULAR DISEASE
- ❖ ISCHEMIC HEART DISEASE
- ❖ STABLE ANGINA PECTORIS

Patient 3 N.O.

❖ Blood pressure, mmHg

Right

159/73

Left

129/80

❖ Retrograde flow in Right vertebral artery

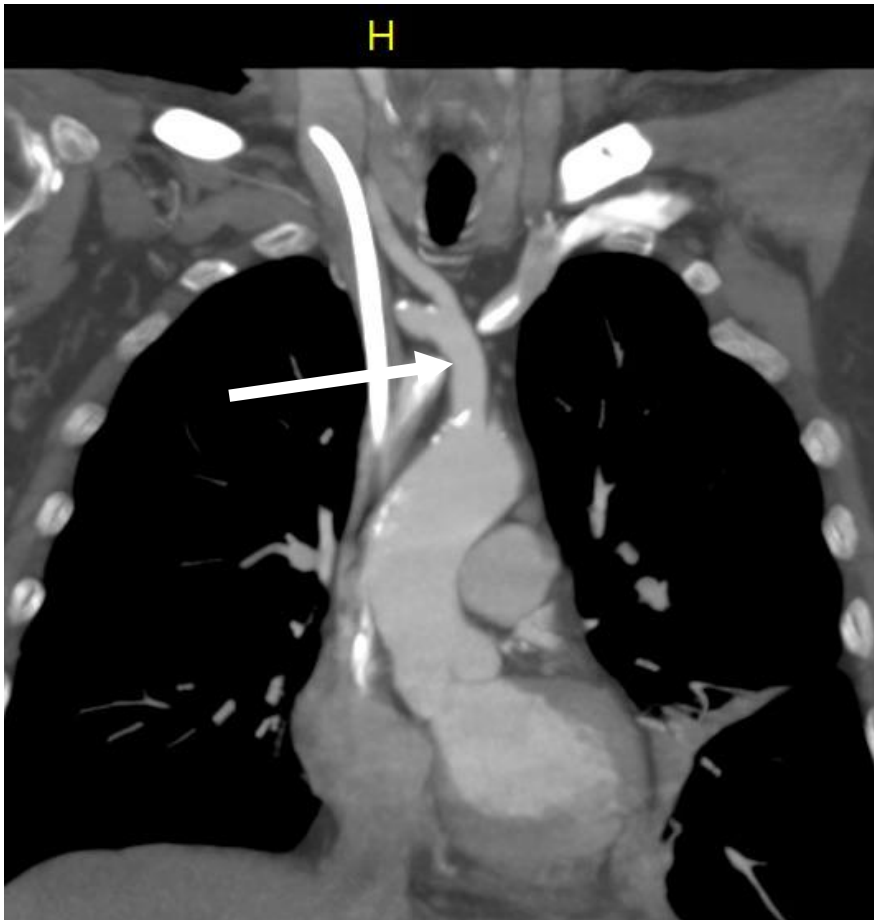
❖ Working diagnosis

❖ Subclavian artery stenosis/occlusion

❖ CT Angio is mandatory

Patient 3_{N.O.}

Right brachiocephalic trunk
patent

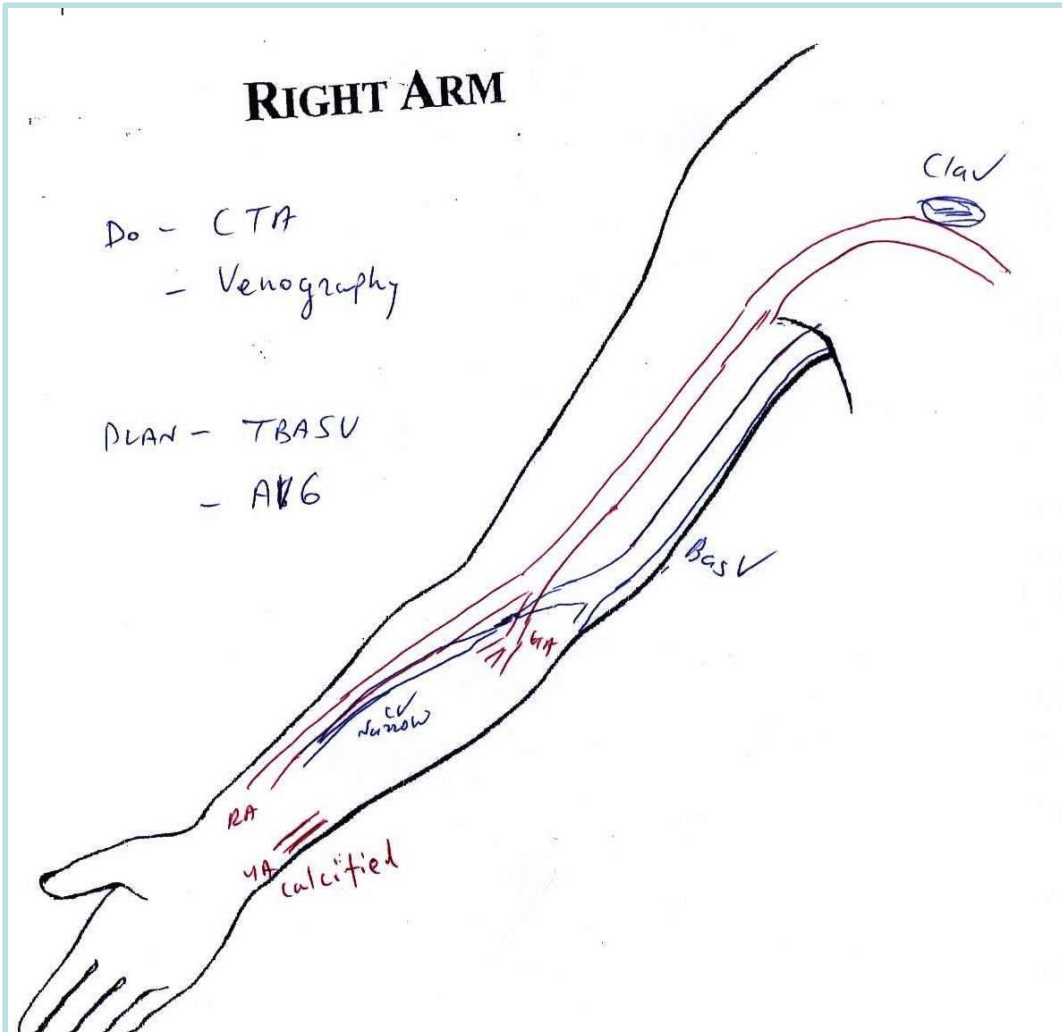


Left Subclavian artery
Occluded

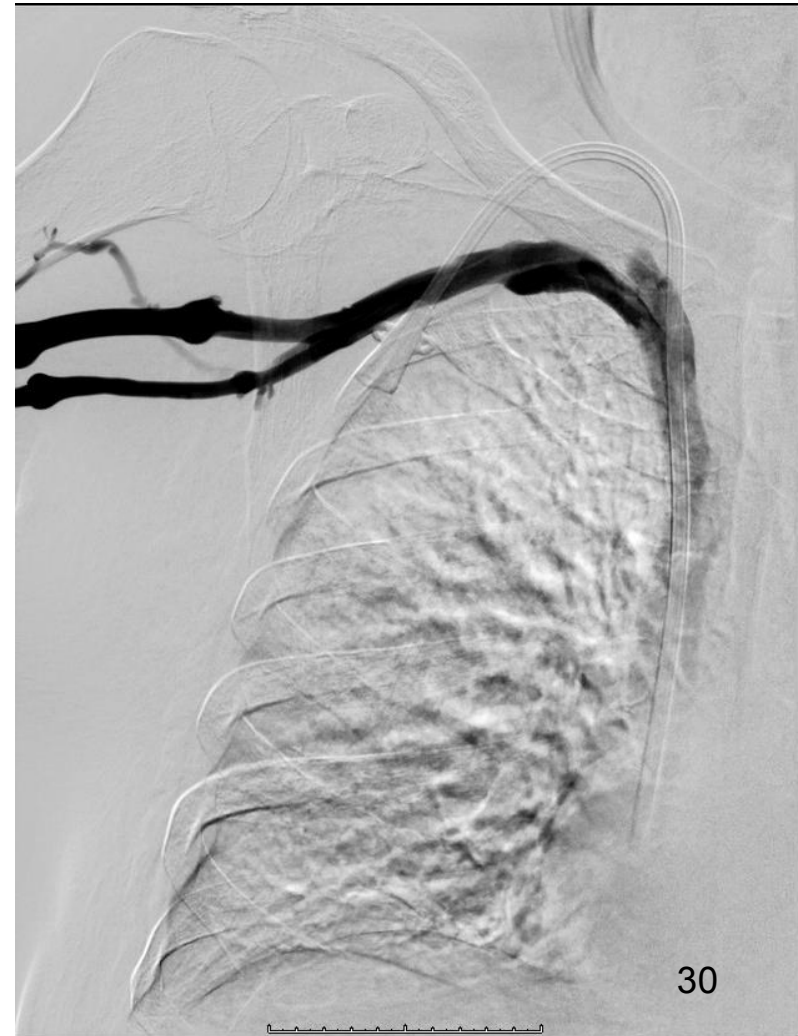


Surgical Plan N. O.

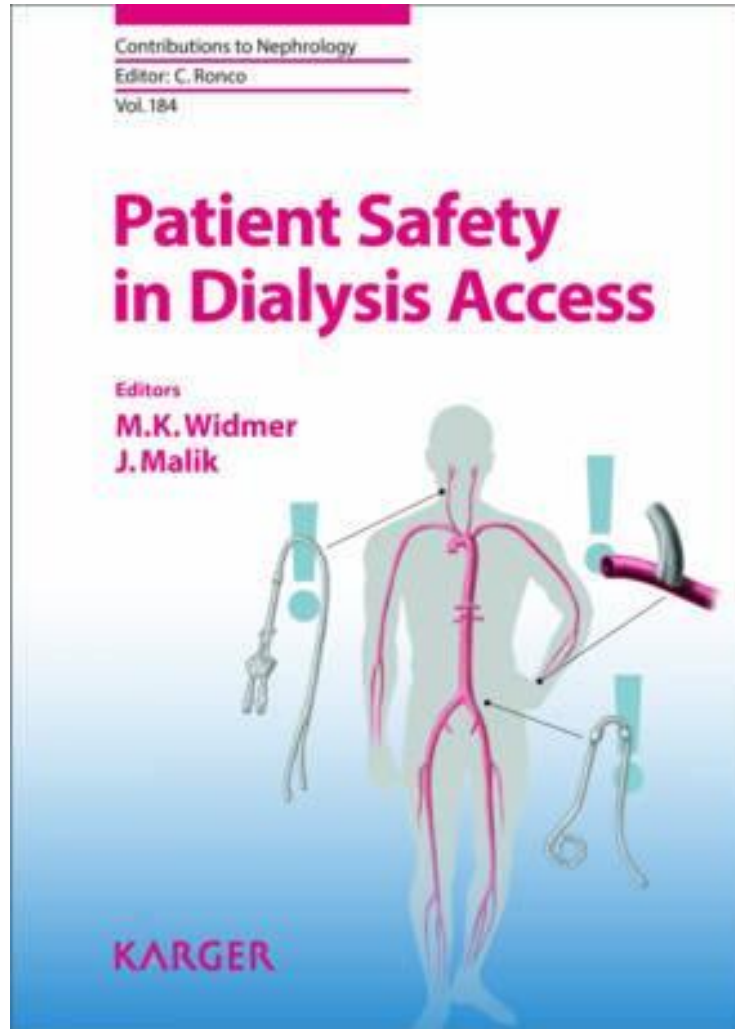
Patient safety oriented plan



Preoperative venography



Take home books



Thank you



Jerusalem, The Church of the Holy Sepulchre

Vascular access planning and patient safety

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