

# Translation of Evidence Based Data Into Clinical Practice

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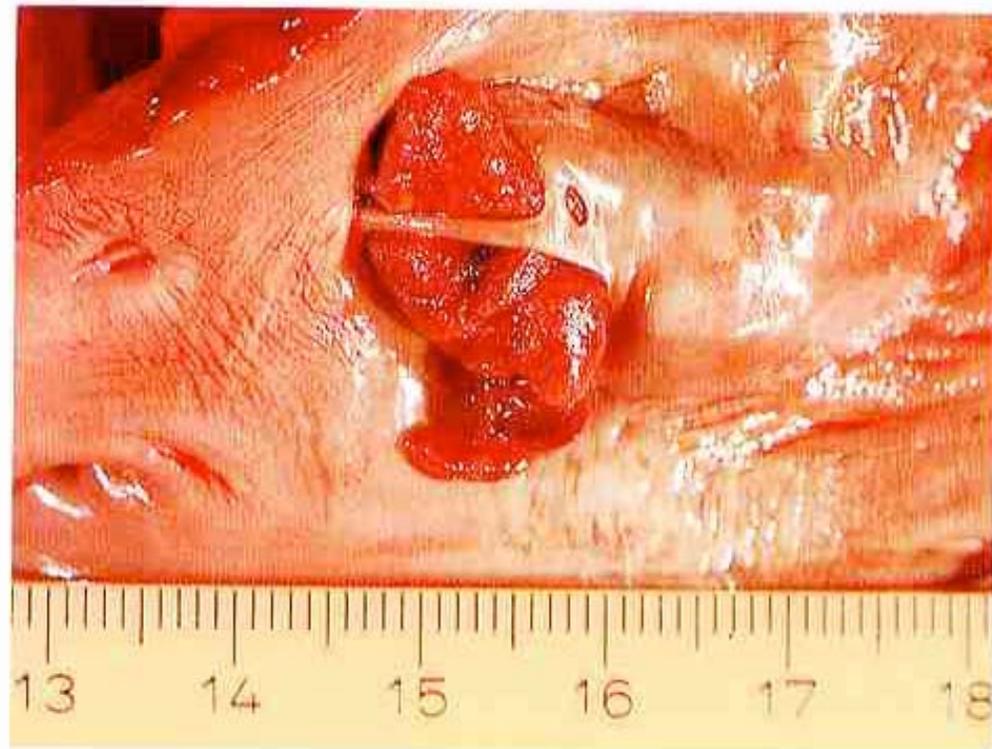
# The Many Faces Of Venous Thromboembolism

- **Prevent Fatal pulmonary emboli.**
  - 1-5% incidence in patients with >4 risk factors.
  - 16.7% mortality at 3 months.
  - 25% of those with Pulmonary emboli present as sudden death.
- **Prevent chronic pulmonary hypertension**
  - 4% of patients suffering PE
- **Prevent clinical venous thromboembolism.**
  - Morbidity, drugs, tests, hose, changes in life style.
- **Prevent silent venous thromboembolism.**
  - Risk of subsequent event double that of control population.
- **Prevent embolic stroke (20-30% PFO rate).**
  - 50% disabled; 20% die; 30% recover.
- **Prevent the post thrombotic syndrome.**
  - 25% incidence following DVT and 7% severe.
  - May not be evident for 2-5 YEARS>

# A Clinical Manifestation Of Venous Thromboembolism

Clot in a PFO as seen at surgery.

Picture taken from [Colour Atlas of the CV System](#), Thomas et al.



**Fig. 6.70 Paradoxical embolism.** Embolus in the patent foramen ovale (viewed from the right atrium).

# Post Thrombotic Syndrome



# **ACCP Chest guidelines**

Geerts WH, Chest 2004

# Patient Intake Form

## Physician Assessment



1. Personal History of DVT or PE
2. Family History of DVT or PE
3. Malignancy: Current or Previous
4. Personal History of Recent MI or stroke ( $\leq$  1 month)
5. Recent Major Surgery ( $\leq$  1 month)
6. Currently on BCP, HRT, or hormonal therapy for Breast or Prostate Cancer
7. Current or recent acute inflammatory or infectious process ( $\leq$  1 month)
8. Currently immobile (unable to ambulate in the in-patient setting)
9. History of unexplained stillborn infant, recurrent spontaneous abortion, premature birth with preeclampsia or growth-restricted infant.
10. Swollen legs
11. Varicose Veins
12. Obesity (BMI  $\geq$  30)
13. Age



### Thrombosis Risk Factor Assessment

Patient's Name: \_\_\_\_\_ Age: \_\_\_ Sex: \_\_\_ Wgt: \_\_\_ lbs

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#### Choose All That Apply

- Each Risk Factor Represents 1 Point**
- Age 41-60 years
  - Minor surgery planned
  - History of prior major surgery ( $<$  1 month)
  - Varicose veins
  - History of inflammatory bowel disease
  - Swollen legs (current)
  - Obesity (BMI  $>$  25)
  - Acute myocardial infarction
  - Congestive heart failure ( $<$  1 month)
  - Sepsis ( $<$  1 month)
  - Serious lung disease incl. pneumonia ( $<$  1 month)
  - Abnormal pulmonary function (COPD)
  - Medical patient currently at bed rest
  - Other risk factors \_\_\_\_\_

- Each Risk Factor Represents 2 Points**
- Age 60-74 years
  - Arthroscopic surgery
  - Malignancy (present or previous)
  - Major surgery ( $>$  45 minutes)
  - Laparoscopic surgery ( $>$  45 minutes)
  - Patient confined to bed ( $>$  72 hours)
  - Immobilizing plaster cast ( $<$  1 month)
  - Central venous access

- Each Risk Factor Represents 5 Points**
- Elective major lower extremity arthroplasty
  - Hip, pelvis or leg fracture ( $<$  1 month)
  - Stroke ( $<$  1 month)
  - Multiple trauma ( $<$  1 month)
  - Acute spinal cord injury (paralysis) ( $<$  1 month)

- Each Risk Factor Represents 3 Points**
- Age over 75 years
  - History of DVT/PE
  - Family history of thrombosis\***
  - Positive Factor V Leiden
  - Positive Prothrombin 20210A
  - Elevated serum homocysteine
  - Positive Lupus anticoagulant
  - Elevated anticardiolipin antibodies
  - Heparin-induced thrombocytopenia (HIT)
  - Other congenital or acquired thrombophilia
- If yes:  
 Type \_\_\_\_\_  
 \*most frequently missed risk factor

- For Women Only (Each Represents 1 Point)**
- Oral contraceptives or hormone replacement therapy
  - Pregnancy or postpartum ( $<$  1 month)
  - History of unexplained stillborn infant, recurrent spontaneous abortion ( $\geq$  3), premature birth with toxemia or growth-restricted infant

Total Risk Factor Score

# Translation of Evidence Based Data Into Clinical Practice

- Prospective validation of the entire risk assessment tool is one avenue to translate data from the literature into routine clinical practice.
- A number of individual correlations between risk or in the incidence of venous thromboembolism have been observed but until the instrument is prospectively validated some clinicians are unwilling to spend the time in effort to record and track these data elements.
- We have developed a protocol to validate this instrument which is widely used as part of the AVF venous screening program, hospitals participating in DVT awareness month, and several hundred university and community settings in the US and as far away as the middle east.

# Topics/Issues Not Covered In National Guidelines

- ♣ Incidence of VTE in those with very high risk scores
  - ♣ Is there a level of risk where elective quality-of-life surgical procedures should not be done.
- ♣ Guidelines for outpatient prophylaxis in those not admitted to hospital
  - ♣ Data to show that shortening the length of standard prophylaxis is justified just because the patient is discharged before 5-7 days.\*
- ♣ Detailed guidelines regarding the prevention and treatment of the post-thrombotic syndrome.
  - ♣ For most clinicians compression therapy equals antiembolism stockings.

\*Randomized prospective thrombosis prophylaxis trials usually based on 5-7 days of prophylaxis

# Topics/Issues Not Covered In National Guidelines

- ♣ Treatment of calf vein thrombosis
  - ♣ Observation and serial scanning has resulted in some deaths
  - ♣ Treatment has not been associated with mortality
- ♣ The anticancer effects of LMWH
  - ♣ What drug? what dose, ? how long?
- ♣ Doesn't the level of risk rather than the type of procedure dictate the use of prophylaxis
- ♣ Integrating the choice of drug, onset of prophylaxis, duration of prophylaxis, and intensity of prophylaxis according to available evidence.
- ♣ Separate editorial statements from the evidence based data.
  - ♣ “we place a relatively low value on the prevention of venographic thrombosis, and a relatively high value on minimizing bleeding complications”.
    - ♣ Some of us feel that the identification of those patients likely to develop venous thrombosis may prevent not only some sudden deaths, but also some cases of disabling stroke and most importantly help prevent the post thrombotic syndrome.
    - ♣ bleeding rarely results in death and in the prospective randomized trials almost never leads to a serious disabling result due to joint removal for infection secondary to bleeding.

# Physician And Patient Education

## National Thrombosis Education Forum

- Composed of scientists, physicians, nurses, and allied health personnel that are established educators in the thrombosis field
  - Multidisciplinary presentation including both medical and surgical specialties
- Development of a core curriculum suitable for medical school programs
  - Slide sets, educational website, monographs, and other educational tools for all the instruction of physicians, and allied health personnel.
- Targeted presentations at hospital grand rounds, medical school classes, roundtable presentations, and symposia at major medical and surgical conferences.
- Suggest to industry that funds that depend on promotional programs be donated to the education forum to reach all parties including the public about venous thromboembolism.
- Encourage industry support for the national screening program so thousands can be screened and the public awareness of VTE can be improved.
- Partner with hospitals and other health care organizations to use clinical outcomes to help drive the educational process

# What Works to Improve Care?

## *Role of Systems-based Improvement*

- CME and didactic programs have little impact on changing behavior!
- Effective strategies include
  - > reminder systems
  - > standing orders
  - > clinical pathways or protocols
  - > opinion leaders and physician champions
  - > self-monitoring and feedback

# Suggestions For Discussion

- Public awareness of DVT
  - National implementation of the American Venous Forum screening program in as many communities in the US as possible.
  - Increase physician awareness by having the patients present selected educational materials along with their report card to their local physician.
  - Encourage the patients to get a DVT expert on the AVF website in order to interpret their report card.
  - Partner with the coalition for DVT, National Alliance for Thrombosis and Thrombophilia, and other interested organizations.
    - > Representatives help with screening and distribute brochures explaining those organizations at the screening sites.
- Media blitz
  - Each month run a feature story on a thrombosis victim in a national news venue—parade magazine, people magazine, usa today, wall street journal, etc.
  - Inundate the press with human interest stories regarding VTE.

# Suggestions For Discussion

- **Physician awareness of DVT**
  - Mandate guidelines developed by the NQF, Leapfrog, SCIP project, and the joint commission.
  - Performance measures linked to joint commission accreditation and **PAY FOR PERFORMANCE**
    - > No prophylaxis—no pay!!!
  - Electronic medical record used to facilitate the process and include DVT alerts, and pathway type protocols
  - Track outcomes with 90 day follow-up data and self adjust pathway decisions regarding prophylaxis based on this data.