Risk Factors of Deep Vein Thrombosis after TKA

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Fatal Pulmonary Embolism
Don’t let it occur by chance

Autopsy at 2001
Prevalence of DVT by Contrast Venography

230 patients at Phramongkutklao Hospital of Hip & Knee Surgery, 2002-2003

- 100 cases of TKA
- 100 cases of hip fracture in elderly
- 30 cases of THA
Distal Thrombus

No proximal DVT
3 minutes later

No distal thrombus
4 minutes later

Thrombus moved from distal vein to femoral vein with clinical assessment of pulmonary embolism
13% of Asymptomatic PE after TKA studied by radioisotope scan

Ramathibodi Hospital
J Med Association Thailand 2004
Prevalence of DVT

Bilateral postoperative contrast venography

- Hip fracture in elderly
- Total knee arthroplasty


Total Knee Arthroplasty

Prevalence of DVT
- 61% of patients
- 10% with proximal DVT
  - Mostly asymptomatic
- 28% Thrombophilia
  - Deficiency of protein S and antithrombin III
  - All negative for factor V leidens

Deep Vein Thrombosis

Graphs showing the distribution of Deep Vein Thrombosis by location, sex, and distal vs. proximal.
Asia Study of Venograms

patient enrollment per country

- China: 13%
- Korea: 30%
- Philippines: 15%
- Taiwan: 20%
- Indonesia: 5%
- Thailand: 10%
- Malaysia: 7%

ALL PATIENTS (N=278)

- Any Proximal DVT
- Isolated Distal DVT
- Any DVT

AIDA study 2005
Risk Factors of Deep Vein Thrombosis (DVT) after Total Knee Arthroplasty (TKA) at Phramongkutklao Hospital

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Background: There have been sporadic reports on the Asian risk factor of DVT after total knee arthroplasty. Objective: To determine the risk factors of DVT.
Material and Methods: Retrospective review of one hundred patients who had undergone TKA and postoperative Contrast Venography in bilateral legs between 2002 and 2005 were performed to identify risk factor of DVT. The patients were divided into two groups, positive and negative venography which the patients who had positive venography were indicating the development of DVT.
Results: One hundred patients were evaluated associated to DVT. Eighteen of these patients were men, and eighty-two were women. The median age at the time of the procedure was seventy-five years old (range: 62 - 79 years old). Sixty-one patients showed positive venography for DVT. Five critical risk factors were identified to develop DVT:
1. Underlying cardiovascular disease
2. Underlying hematological disease
3. Underlying rheumatoid arthritis
4. Patients who took oral herbal medicine about one year before the operation
5. Patients who received revision TKA.

Conclusion: The risk factors of DVT in the present study at Phramongkutklao Hospital were similar to other countries. The research study could identify statistically significant risk factors and stimulate surgeons undertaking TKA to be aware of the probability of the patient to develop DVT.

Keywords: Risk Factors, DVT, TKA

Full text e-Journal: http://www.medsassocthai.org/journal
Post-thrombotic Syndrome After Total Knee Arthroplasty: A 2-year Prospective Study

WE CALLED THE PATIENTS WHO WERE NOT PROTECTED BACK FOR EVALUATION
Diagnosis of PTS

Clinical assessment
  – Villalta score
Venous valvular incompetence
  – Duplex ultrasound
Duplex Ultrasound
Post-thrombotic Syndrome After TKA

Prevalence of post-thrombotic syndrome after TKA in Phramongkutklao Hospital:
Diagnosed by clinical assessment (Villalta score)
22 / 76 cases (28.9%)

All symptomatic PTS have previous DVT
Post-thrombotic Syndrome by Duplex Ultrasound

Patients without previous DVT showed NO symptomatic PTS even in cases of positive reflux by duplex ultrasound.

[44/76 valve reflux]
Conclusion

• Overall prevalence of post-thrombotic syndrome at 2 years FU after total knee arthroplasty is 57.9% (44 / 76 cases) but mostly mild clinical and venous reflux grade I

• Previous DVT associated with symptomatic post-thrombotic syndrome (22 / 76 cases)
Post-thrombotic syndrome is incurable. Only conservative treatment could be done.

Prevention of PTS is Thromboprophylaxis.
TKA have high prevalence but less aggressive VTE

TKA have their own high risks
Post-thrombotic syndrome after TKA

Previous DVT associated with clinical PTS
Preventable Fatal Disease

THANK YOU FOR YOUR ATTENTION