PICC-Related Upper Extremity Deep Vein Thrombosis (UEDVT)

Prevalence

UEDVT Prevalence[1]

Approximately 10% of all DVTs involve upper extremities

Primary (20%)

- Venous Thoracic Outlet Syndrome
- Effort-related thrombosis (Paget-Schroetter Syndrome)
- Idiopathic

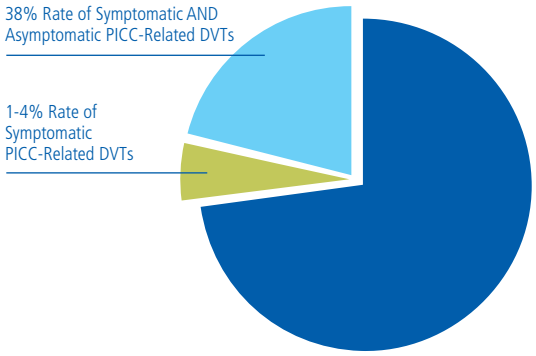
Secondary (80%)

- Catheter-related thrombosis
- Cancer-associated thrombosis
- Surgery or trauma of the arm or shoulder
- Hormone–induced coagulation abnormalities *(i.e. pregnancy)*

PICC-Related UEDVT Incidence Rates[2]

Symptomatic PICC-related DVTs

- 1-4% incidence
- Asymptomatic + symptomatic PICC-related DVTs
  - Up to 38% incidence
- Median time to thrombus: 8 to 12 days



Relevance

UEDVT Relevance Compared to Other Catheter Complications

- **Catheter-Related Bloodstream Infections (CRBSIs):** Less than 2.2% of PICCs have CRBSIs (per 100 catheters)[3, 4]
- **Occlusions:** Approximately 25% of catheters may become occluded[5]
- **DVTs:** Asymptomatic + symptomatic PICC-related DVTs have shown a rate as high as 38%[2]

Venous Thrombosis Risks[6]

Patient and Vascular
Catheter-Associated Infection
Fibrinous Catheter Lumen Occlusion
Extrinsic Vascular Compression
Age Extreme (Old/Young)

Technical
Larger Catheter Diameter
Multi-Lumen Catheters
Catheter Tip Malposition
Two or More Insertion Attempts
Left-Sided Placement
Subclavian Vein Insertion

Treatment-Related
L-Asparaginase
Estrogen or Progesterone Agents
Recombinant Human Interleukin-2
Granulocyte-Macrophage CSF
Thalidomide

Sequelea of UEDVT [7, 8]

If a catheter-related venous thrombus develops, between the catheter and vessel wall, it may:

- Lead to complete blockage of the vein
- Become a life-threatening condition (pulmonary embolism)
- Have potential complications including, but not limited to, post-thrombotic syndrome

UEDVT Link to Infection and Occlusion [8, 9, 10, 11]

- CVC placement provides a rich culture for bacterial growth because of foreign body response upon insertion of CVC
- As the biofilm layer develops it encloses and protects bacteria, which can lead to an increased risk of infection
- Post-mortem evaluation of 72 cancer patients with CVCs showed a strong correlation between catheter-related sepsis and CVC thrombosis
  - A fibrin layer was present on ALL catheters
  - Catheter-related thrombosis was present in 38% of cases
    - 23% of these had sepsis
    - No patients without catheter-related thrombosis had sepsis

PICC-related UEDVT is a significant clinical issue, has a very high prevalence rate compared to the other primary catheter-related complications and can lead to serious complications. Let this knowledge be your stepping stone in heightening your awareness of DVTs and the relationship to PICCs.

AngioDynamics retains a highly credentialed team of clinical specialists committed to providing educational support and training.

To learn more about our UEDVT accredited program,
"Reaching New Heights in Understanding CVC Complications: Heighten Your DVT Awareness"
call 1.800.833.9973 or go to www.angiodynamics.com

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