Acute Upper Extremity Deep Vein Thrombosis- Effectiveness of SVC Filter

Sohiel A. Nagib
El- Amria General Hospital, Alexandria- Egypt.
Disclosure

Speaker name:

Sohiel A. Nagib

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☑ I do not have any potential conflict of interest
Introduction

- With the advent of central lines, pacemakers and defibrillators upper extremity DVTs are increasingly common.
- An upper extremity DVT has about 5–10% chance of becoming a Pulmonary Embolism.
Anatomical consideration

1. Short length (7 cm) of SVC.
2. Proximity to cardiac pulsations.
3. To protect the azygous vein which drains in the SVC.
4. Just like a double IVC, a double SVC occurs in 0.1–0.3% of the population.
A. Percutaneous insertion is the standard Jugular, Subclavian and Femoral approaches.
B. Technically, inserting a filter in SVC is more demanding than IVC filter.
C. The filter is placed just below the confluence of innominate veins.
objectives

To evaluate the safety and effectiveness of percutaneous filter placement in superior vena-cava for prevention of pulmonary embolism due to acute upper extremity deep venous thrombosis in patients contra-indicated anti-coagulation.
Methodology

41 patients with acute upper extremity DVT and anti-coagulation therapy from January 1\textsuperscript{st} 2014 to June 30\textsuperscript{th} 2015.

4 patients underwent percutaneous placement of superior vena-cava filter for prevention against P.E as were contra-indicated anti-coagulation.
Methodology

Follow-up chest radiographs were used to detect filter migration, dislodgment and fracture.

Pulmonary pressure after filter insertion was recorded.

Patients were followed-up clinically for evidence of superior vena-cava syndrome and P.E.
Results

Age:

21 - 89 years

X 55.02±0.45 years
Affected Extremity

- Upper Limb Only: 31
- Combined Upper & Lower Limb: 10
Affected Upper Limb

- Right Only: 25
- Left Only: 12
- Bilateral: 4
Utility Used

- Anticoagulation: 37
- SVC Filter: 4
No complications such as filter migration, dislodgment and fracture occurred (follow-up 12 weeks).

No patients developed clinical evidence of P.E or superior vena-cava syndrome (follow-up 15 weeks).
Cases
Case 1

63 female patient
Mastectomy
Bleeding
Dyspnea
Imaging
SVC Filter
Case 2

36 years old, male patient
CKD – Parkinsonism
Dyspnea
DEC. HT & Melena
Imaging
SVC FILTER
Case 3

44 years old, Male patient
Rectal mass
VTE
Imaging
Double SVC & IVC Filters
Case 4

89 years old, male patient
Heavy Smoker, COPD,
Dyspnea
DEC. HT & Melena
Imaging
SVC FILTER
Conclusion

In light of limited available evidence, SVC filter insertion for prevention of PE due to Upper Extremity DVT appears a safe and effective alternative to anticoagulation when the later is not feasible.

More data is needed for their long-term morbidity and mortality outcomes.
References

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