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Coagulation proteins C&S and cases of cardiac thrombi

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Statement of the Problem: Protein S or Protein C deficiency leads to uncommon thrombophilia that precipitates clotting in unusual sites. Thrombotic episodes of under 40-50 years of age are rare without a thrombophilia. Clotting-related clinical presentations are common among Asian populations compared to others. Several case reports illustrate young patients with arterial thrombosis associated to inherited PS deficiency. Physiological changes in pregnancy also predisposes to thrombosis in the presence of underlying anticoagulant deficiencies. Clinicians need to have an understanding about this phenomenon to provide optimal care.

Methodology & Theoretical Orientation: A systematic analysis of cases with PS or PC deficiency manifested as cardiac thrombi using multiple databases presented 40 recent articles. Based on the complexity of the clinical manifestations, diagnostic measures and interventions 5-7 cases were chosen for further exploration.

Findings: Abnormal clotting in unusual sites triggered morbidity and mortality in younger (under 50 years of age) clientele. The focus of such thrombosis management is to restore hemostasis by reestablishing perfusion. Occasionally, surgical interventions may be necessary to accomplish this goal. Diagnosis of the underlying problem and prevention of further episodes is based on immunoassays and family history. The clients may need anticoagulation for at least three to six months.

Conclusion & Significance: P S and PC deficiency-related cardiac thrombi are not a commonly seen anomaly. Yet clinicians should be alert to identify abnormal clotting problems in acutely ill patients. Astute history taking, thorough physical exam skills and understanding of the concept will help in early diagnosis and management.

Recent Publications:

1. Bhandary S P, Papadimos T J, Essandoh M K and Apostolakis J (2015) Massive intracardiac thrombosis during coronary artery bypass grafting surgery. *Int J Crit Illn Inj Sci.* 5(1):56-58.
2. Kenichiro Uchida, Mitsuharu Hosono, Toshihiko Shibata, Daisuke Kaku, Tomonori Yamamoto, Takafumi Terada, ... Mizobata, Y. (2016). Surgical treatment for thoracoabdominal intra-aortic thrombus with multiple infarctions: a case report. *Journal of Medical Case Reports*, 10:1-5.
3. Kurniawan M Z and Pratanu I (2015) Sub-acute stent thrombosis and in-stent restenosis associated with antiplatelets clopidogrel resistance and protein S deficiency. *Folia Medica Indonesiana*, 51(4):214-220.
4. Pahuja M, Ainapurapu B and Abidov A (2017) Large left ventricular thrombus in a patient with systemic and venous thromboembolism secondary to protein C and S deficiency. *Case Rep Cardiol.* 2017:7576801.
5. Sabzi F and Faraji R (2014) Cardiac left ventricular thrombus in protein C deficiency. *Nigerian Medical Journal* 55(4):354-355.

Biography

Elizabeth B Simon is an experienced Academician as well as a Clinician. She is committed to facilitate clinical learning through case studies. During her 24 years of academic tenure, she has published and presented in national and international forums and journals. She was a Fulbright Scholar during 2015-2016 in India teaching Critical care Nursing.