Vascular Embolization in the Non-Traumatic Patient

David Rajaratnam, MD
Interventional Radiology
Kaiser Permanente
San Bernardino County

Objectives
- Discuss vascular embolization fundamental principles
- Discuss commonly used embolic agents
- Discuss the application of vascular embolization outside the setting of trauma
- Case based discussion
- Discuss the future of embolotherapy

Vascular Embolization Principles

- Transcatheter vascular embolization first performed in 1970 by Dr. Dotter’s group at OHSU.
- The goal of vascular embolization is to occlude a blood vessel either permanently or temporarily for therapeutic reasons (direct or indirect).
- Embolization is typically performed to a combination of angiographic and clinical end points.

Embolic Agents

- Metallic coils/Vascular plugs
  - Endovascular equivalent of surgical ligation, a permanent embolic.
  - Available in a variety of sizes, delivery methods, coatings.
  - Acts as both a mechanical occlusion agent as well as a nidus for thrombus formation.

Embolic Agents

- Particles
  - Available in a variety of sizes, shapes, and material
  - Sizes are calibrated to vascular embolization target
  - Therapeutic medications can be annealed to the particles

- Liquid Embolics
  - Flow directed embolic agents which permit rapid, complete embolization
  - Ethiodized oil
  - N-BCA “Glue”
  - Polyvinyl alcohol microspheres
  - Sclerosants
    - Sodium tetradecyl sulfate “S15”
- 51 year old male with left scrotal ache worst at the end of the day
- Scrotal ultrasound shows a left sided varicocele.
- 32 year old male with left scrotal ache worst at the end of the day
- Scrotal ultrasound shows a left sided varicocele.
• 48 year old G2P2Ao female with large uterine fibroids causing bulk symptoms
• She declines hysterectomy
- 65 year old female with refractory left renal hemorrhage following CT guided renal cortical biopsy.
- 24 year old female with pancreatitis and refractory UGI hemorrhage.
Current Embolotherapy Horizons
Future Embolo therapy Horizons

Prostatic Artery Embolization in the Treatment of Localized Prostate Cancer: A Biologic Perspective (Preliminary Report) Study of 15 Patients

Early Results of Transarterial Artery Embolization for Relief of Chronic Renal Failure Associated with Thalassemia: Experience in 18 Patients

Endovascular Therapy of the Superior Vena Cava: Prospective Results in 15 Patients