Ambulatory Phlebectomy & Sclerotherapy

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Other Names:
- Stab Avulsion
- Micro Extraction

Definition:
- Removal of segments of varicose veins of any size and from any location, under local anesthesia, on an outpatient basis
Introduction

- Varicosities of any size in any location
  - *Exclusion = reflux at SFJ*
- Can be combined with other methods
  - EVLT/EVLA/ELAS/RFA
  - Sclerotherapy
- Diagnostic workup essential
Indications

- Asymptomatic Varicose Veins
  - Cosmetic purposes
  - Concern about sequelae of varicose veins
  - Strong family history of varicose veins & complications

- Symptomatic Varicose Veins

- Complicated Varicose Veins
Large varicosities – widespread
Thicker varicose veins (non-blue)
Side branches GSV & LSV
Younger active patients
Dorsal foot veins
Lipodermatosclerosis
Contraindications

- Infectious dermatitis or cellulitis of the area to be treated
- Severe peripheral edema
  - Secondary to:
    - Cardiac disease
    - Renal disease
- Seriously ill patients
  - Severe cardiovascular and/or pulmonary problems
  - Uncontrolled diabetes
- Very elderly patients
Technique

- Rule out reflux at saphenofemoral or saphenopoliteal junction reflux
- Preoperative mapping
- Surgical planning
- Local Anesthesia
- Phlebectomy
- Postoperative dressing
Rule Out Reflux

- Duplex ultrasound
  - Assess for saphenofemoral and saphenopopliteal junction reflux
- If ultrasound positive for reflux
  - Perform EVLA/ELAS/EVLT/RFA first
- Always treat proximal to distal
Preoperative Mapping

- Use surgical pen or permanent marker
- Have patient stand for 20 minutes before marking
- *Initial mapping performed in standing position*
- Secondary mapping performed in Trendelenburg position using transillumination
Preoperative Mapping
Preoperative Mapping
Preoperative Mapping
Preoperative Mapping
Transillumination Light

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Local Anesthesia

- Start with 1% lidocaine/xylocaine
  - Initiation points for tumescent anesthesia
    - Use 25 gauge, ½ inch needle
- Tumescent anesthesia
  - Dilute lidocaine with epinephrine 1 in 4
    - 0.25 % Lidocaine
- Volume up to 500 mL
- Inject slowly using 30 cc syringe
  - Use 20 gauge spinal needle
Tumescent Anesthesia
Ambulatory Phlebectomy

Instrumentation

- Variety of hooks
  - Muller, Oesch, Ramlet, Varaday, Dortu
- Small curved hemostats
- Blunt dissector (may use hooks)
- #11 blade, ophthalmology blade, 18 gauge needle
- Sterile gauze, drapes
- Scissors
Ambulatory Phlebectomy
Instrumentation
Ambulatory Phlebectomy

Technique-1

- Puncture skin using scalpel or needle
- “Dissection” along long axis
- Hook or Harpoon adventitia-attempt to lift
- Visualize glistening white
Ambulatory Phlebectomy

- Exteriorize vein loop
- Grasp loop with mosquito hemostat
- Gentle slow pull with lateral massage
- Hemostats advanced
- Traction maintained to guide next site
- “Skin Tenting” can guide next site
Ambulatory Phlebectomy Technique
Ambulatory Phlebectomy Technique
Ambulatory Phlebectomy Technique-3

- When difficult to extract move to next site
- Multiple vein loops exteriorized initially
- Connected by blunt dissection
- Avulsion usually in portions
- Bleeding compressed by assistant
Ambulatory Phlebectomy Technique
Incisions sealed with Steri-strips
- No sutures

Gauze pads or other absorbent pads placed over incision sites

Short Stretch Bandage

Graduated compression stocking
- 30-40 mm Hg

Duration- one week
Ambulatory Phlebectomy Cases
Ambulatory Phlebectomy Cases
Sclerotherapy

- Types of Solutions
- Concentrations based on vein size
- Equipment
Types of Solutions

- **Detergent Solutions**
  - Sodium Tetradecyl Sulfate (STS)
    - Sotadecrol
  - Polidocanol (POL)
    - Aethoxysklerol
  - Ethanolamine Oleate (Ethamolin)
  - Sodium Morrhuate (Scleromate)
Types of Solutions

- Toxic or Corrosive Agents
  - Iodine salt (polyiodinated) (P2)
    - Sclerodyne
  - Glycerin (chromium potassium alum)
    - Chromex
  - Alcohols
  - Metal Compounds
**Mechanism of Action**

- Fast Acting
- Dissolution of endothelium cell membrane
- Moderate penetration depth
- May have effect up to 20 cm from injection site
- Stimulation of inflammation sequences
Detergent Solutions

- Advantages
  - Painless when intravascular
  - Effects beyond injection point
    - Affect large networks efficiently
    - Large amount of territory per treatment
  - All size vessels treatable
  - Inflammatory component controllable by varying concentration
  - FDA approval for STS
Detergent Solutions

- Disadvantages
  - Allergy
    - STS dissolves rubber stoppers
    - Must use Latex free syringes
  - Long length of action
  - Expense
Sclerosing Solution Matched to Vessel Size

- **Telangiectasias/Spider Veins**
  - 0.1% to 0.2% sodium tetradecyl sulfate (STS)
    - Non-foam
    - Less than 0.5 mL volume

- **Reticular Veins**
  - 0.25 to 0.5% sodium tetradecyl sulfate (STS)
    - Foam: 0.25%
    - Volume up to 0.5 cc per injection site
Sclerosing Solutions - Larger Vessels

- Large Reticular/Small Varicose Veins
  - 0.5% to 1% STS conventional
  - 0.5% foam
  - Injection of up to 1cc per site. No more than 10cc per session

- Truncal Varicose Veins
  - 3% STS conventional
  - 1% STS Foam
  - Up to 3cc of 3% may be used in one session
Maximum Doses per Session

- 10 mL rule
- Hyperosmolar = 10 mL
- Detergent = 10 mL of 3% (strongest)
Equipment

- 3 cc syringe for spider and reticular veins
- 5 cc syringe for small varicose and truncal varicose veins
- 27” butterfly or 30” needle
- Three way stopcock
- Transillumination Light
- Marker
Equipment
Compression Guidelines

- **Spider Veins & Reticular Veins**
  - 20-30 mm Hg

- **Reticular & Small Varicose Veins**
  - 20-30 mm Hg

- **Truncal Varicose Veins**
  - 30-40 mm Hg

- **All compression for two to three weeks**