MANAGEMENT OF VARICOSE VEINS

MR HANIF HUSSEIN
CONSULTANT VASCULAR SURGEON, HOSPITAL KL
HISTORY

• 1550 BC – Ebers Papyrus
  • First described as “serpentine windings” – which are not to be operated on – fatal haemorrhage during surgery
  • Failed attempt at surgical treatment

• 460 BC – Hippocrates
  • Compression stockings after multiple puncture
  • Cautery
HISTORY

- Paulus Aegineta (625-690)
  - Ligation
  - 200 yrs later: made famous by Trendelenburg

- Abul Qasim Al Zahrawi (930 – 1013)
  - First detailed description of varicose vein stripping and multiple avulsion
VARICOSE VEINS
DEFINITION

Varicose veins

- Dilated, tortuous and elongated deformity of the superficial venous system of the lower limb
INTRODUCTION

• Most common venous disorder
• Affects 1 in every 3 population aged 18 – 64
• Women > men
• Health impact
  • Cosmesis
  • Socio-economic disability

• Primary
• Secondary
  • Pelvic mass
  • Post-phlebitic
INTRODUCTION

- Varicose veins
  - Incompetence
    - Valves
      - Sapheno-femoral junction (SFJ)
      - Sapheno-popliteal junction (SPJ)
      - Perforator
  - Reflux
    - Superficial veins
      - Long saphenous vein (LSV)
      - Short saphenous vein (SSV)
    - Deep veins
      - Femoral
      - Popliteal vein

Vascular Update, 2011
PREDISPOSING FACTORS

• Age
• Obesity
• Hypertension
• Female
• Lower socio-economic status
• Lower limb trauma
• History of deep venous thrombosis
• Congestive heart failure
CLASSIFICATION

• CEAP Classification
  C – Clinical signs (Grade 0-6) (A) or (S)
  E – Cause (Congenital, Primary or Secondary)
  A – Anatomic distribution (Superficial, Deep, Perforator or Combination)
  P – Pathophysiologic condition (Reflux or Obstruction or Combination)

Reporting Standards in Venous Diseases – JVS 1995
CLASSIFICATION

• Clinical Signs, C\textsubscript{0-6}, A or C\textsubscript{0-6}, S

0 – No clinical signs
1 – Telangiectasia, Reticular veins, Maleolar flare
2 – Varicose veins
3 – Edema without skin changes
4 – Skin changes ascribed to venous disease
5 – Skin changes with healed ulcer
6 – Skin changes with active ulcer

• Further assign

A – asymptomatic
S – symptomatic
CLASSIFICATION

- Anatomic Classification
  \( A_S \) – Superficial
  \( A_D \) – Deep
  \( A_P \) – Perforators

- Segmental Localisation
  \( A_{S1-5} \)
  \( A_{D6-16} \)
  \( A_{P17, 18} \)

- Superficial
  1 – Telangiectasias/Reticular veins
  2 – Above knee LSV
  3 – Below knee LSV
  4 – SSV
  5 – Non saphenous

Vascular Update, 2011
CLASSIFICATION

• Deep veins
  6 – IVC
  7 – Common Iliac vein
  8 – Internal Iliac vein
  9 – External Iliac vein
  10 – Pelvic: gonadal, broad ligament
  11 – Common Femoral
  12 – Deep Femoral
  13 – Superficial Femoral
  14 – Popliteal vein
  15 – Tibial veins
  16 – Muscular veins

• Perforating veins
  17 – Thigh perforators
  18 – Calf perforators

• $C_{2A} E_P A_{S3} P_R$
MANAGEMENT
MANAGEMENT

• Define
  • Primary or secondary
  • Site of venous incompetence
    • SFJ / SPJ / Perforator
  • Deep veins
    • Patency
    • Reflux
  • Ulcer
    • Exclude arterial disease
HISTORY

• Symptoms
  • Typical of venous pooling
  • Calf heaviness after prolonged standing
  • Asymptomatic at the beginning of the day
• Any known abdominal pathology
• History to suggest previous DVT
• Family history
EXAMINATION

- Abdomen mass
- Peripheral pulses
- Pattern of varicosities
  - LSV / SSV
- Trendelenburg test
- Hand held continuous wave doppler
  - Reflux in the groin / popliteal fossa
- Complications
  - Venous hypertension
  - Bleeding
INVESTIGATIONS

• Duplex scan
  • Confirm SFJ / SPJ reflux
  • Perforator incompetence
  • Deep veins
    • Patency
    • Reflux

• USG abdomen / pelvic

• Ulcer
  • Swab cultures, TWDC
INVESTIGATIONS

- Air plethysmography
  - Venous refilling time
- Venogram
TREATMENT
TREATMENT

• Non-surgical
  • Compression stockings
  • Wound dressings
  • Weight reduction
  • Pharmacotherapy
    • Micronised flavinoids
    • Antibiotics
  • Leg elevation at rest
TREATMENT

- Surgical
  - High saphenous ligation
  - Endovenous laser ablation
  - Endovenous radio-frequency ablation
  - Sclerotherapy
INDICATIONS

• Symptomatic
• Complications
  • Bleeding
  • Venous hypertension
• Aesthetic
  • Young women
INDICATIONS

• Symptomatic
  • Heaviness in the calf muscles – after prolonged standing
• Exclude other pathologies
  • DVT
  • Osteoarthritis of the knees
  • Muscle cramps
  • Prolapsed disc
  • Baker’s cyst
HIGH SAPHENOUS LIGATION

- Time tested procedure
- LSV ligated close to the SFJ
- +/- Stripping down to knee level
- Multiple stab avulsions

Complications
- Thigh hematoma – stripping of LSV
- Wound infection – groin
- Sural nerve injury
HIGH SAPHENOUS LIGATION

• Advantages
  • Low recurrence
  • Low cost

• Disadvantages
  • Regional anesthesia / general anesthesia
  • Higher morbidity – post-op pain and bruises
  • Longer immobilisation
  • Longer hospital stay
LASER ABLATION

• Heat generated by laser
• Transmitted within the LSV via a fibreoptic catheter
• Vein collapsed and obliterates as the cath is withdrawn distally

• Complications
  • Bruises
  • Nerve injuries – transmitted heat
  • Deep vein thrombosis
LASER ABLATION

• Advantages:
  • Out-patient clinic procedure
  • Local anesthesia
  • Minimal surgical incision
  • Faster return to work

• Disadvantages
  • Cost
RADIOFREQUENCY ABLATION

• Similar to laser therapy
• Heat generated by radio-frequency waves

• Comparable results to laser ablation
  • Occlusion of GCV
  • Post-op pain
  • Return to work
  • Patient satisfaction
  • Complications
  • Recurrence
TAKE HOME MESSAGE

- Common venous disorder
- Not a life threatening condition
- Various treatment modalities
THANK YOU

www.hklvascular.com