Lipedema

Big legs are not always from over eating

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No Disclosures

What in the world is lipedema?

- Fat storage disorder, exclusive to women
- Begins at time of hormonal stress: puberty, pregnancy, menopause
- 1st described 1940 Mayo Clinic and then almost totally forgotten
- Often misdiagnosed as obesity and/or lymphedema….. but it is neither

Two patterns of lipedema

- Breeches
- Pantaloons

Stage 1 lipedema

- Painful, debilitating, and result in decreased mobility
- Bilateral symmetrical fat deposition from hips to ankles
- Trunk spared, chest small
- Not obesity, note waist/hip ratio
- Hands and feet normal
- Often familial, said occur in 11% of women
- Unresponsive to diet, exercise, bariatric surgery, not due to excess calories
- Painful, debilitating, and result in decreased mobility
Stage 2 lipedema

Stage 3 lipedema w/ localized lymphedema

Stage 3 lipedema-breeches

Stage 4 lipedema, breeches

Stage 4 lipedema, pantaloon

Stage 4+ lipedema
Lipedema vs Lymphedema

Lipedema
- Always bilateral
- Spares hands and feet
- Negative Stemmer’s sign
- Usually painful
- More common

Lymphedema
- Can be unilateral
- Includes hands and feet
- Positive Stemmer’s sign
- Usually painless
- Rare

Lipedema vs Obesity

Lipedema
- Fat confined to extremities
- Women only
- Does not respond to calorie restriction, exercise, or bariatric surgery
- Pain, “painful fat syndrome”
- Negative Stemmer’s
- Up to 10% of women

Obesity
- Fat widespread
- No gender difference
- Responds well to calorie restriction, exercise, and bariatric surgery
- No pain
- Negative Stemmer’s
- More common, >30% of women
Tx Lipedema
- Recognition
- Anti-inflammatory diet
- Supplements
- Pool exercises
- MLD
- Compression
- Lymph sparing liposuction

Different fat

Pre-op Post-op

Lipedema in everyday life
Lipedema in tabloids

Lipedema- conclusion

- Lipedema is common but there is no ICD-10 code!
- Patients usually overweight but not necessarily obese
- Physician awareness is vital
- Diet/exercise reduce non-lipedema fat
- MLD, compression, Flexitouch device, pool exercises tx sx’s
- Lymph sparing liposuction is the only way to eliminate lipedema fat!

Lipedema after bariatric surgery

Calorie restriction and/or bariatric surgery can eliminate belly fat and other complications of over-eating but do little for lipedema fat.

Lipedema is not from over eating

Thank you
Lipedema-Anatomic Patterns

Common lab abnormalities
- Elevated complement
- Elevated CRP
- Elevated homocysteine
- Low vitamin D
- Some have high A1c others normal

Lymphoscintigraphy
- 100% had some abnormality
n=52
- Tortuous enlarged lymphatics
- Delayed flow with pooling
- Multiple collateral w/ duplicated and triplicated channels
- Enlarged LN

Lipedema - backstory
- For years I saw women with big painful legs, unusual shape and out of proportion
- Some had VV, most did not
- I knew what it wasn’t classic edema, not DVT, but I did not know what it was...
- Then the AHAH moment, LIPEDEMA!

What in the world is lipedema?
- Genetic syndrome characterized by symmetric deposition of abnormal adipose tissue in the legs and arms.
- Distinct pattern, spares the torso, feet, and hands, results in significant body disproportions
- 1st described 1940 Mayo Clinic and then almost totally forgotten
- Often misdiagnosed as obesity and/or lymphedema
- Not until October 2013, was an NIH Medical Subject heading (MeSH) term for lipedema created and an ICD code proposal is currently in review.

Lipedema, Who? What? When?
- Exclusively women
- Begins at time of hormonal stress: puberty, pregnancy, menopause
- Runs in families, possibly x linked, possibly estrogen mediated
- Progressive deterioration, loss of mobility as disease progresses
- Chronic pain and embarrassment can lead to depression, suicidal ideation
- 2° eating disorders are common, obesity, bulimia, anorexia
- Valgus deformity, TKR
Stages of Lipedema

- **Stage 1**: skin surface is smooth and normal, but the subcutaneous fat has multiple small nodules, subtle exaggeration of “pear” shape with “thick legs, cankles”
- **Stage 2**: the skin surface is uneven with indentations (quilted appearance) and nodular, legs thicken and lose shape
- **Stage 3**: lobular deformation of the skin surface due to increased adipose tissue
- **Stage 4**: massive fat pads, severely fibrotic SQ fat, impaired mobility

Lipedema - clinical characteristics

- Pain in soft tissue at rest and with walking, hyperesthesia to touch
- Easy bruising, cool extremities
- Orthostatic edema that gets worse thru day
- Hip circum > 1.4x waist put another way waist hip ratio < 0.7
- WHO obesity WHR > 0.85
- Feet and hands spared yielding cuffs at ankles and wrists
- Negative Stemmer’s sign
- Fat pads alter gait and result in knee and foot pathology
- Some have joint hypermobility

Lipedema – Genu valgum

- Knees angle in, “knock – knees”
- Pts can’t touch feet together w/ straight legs
- Results in collapsed inner arches of foot as well as osteoarthritis and chondromalacia of knee
Lipedema treatment

- No cure
- Diet and exercise to reduce non-lipedema fat and reduce inflammation
- Pool exercises, increase lipolysis
- Manual lymphatic drainage
- Compression garments, poorly tolerated
- Pneumatic compression
- Lymph sparing liposuction (WAL & TLA)
- Note bariatric surgery has no effect on reducing lipedemic fat

Stage 1 lipedema

Stage 3 lipedema

Stage 3 lipedema

4 Stages of Lipedema

- Stage I
  1. Skin is smooth, subtle “breeches” shape; palp subcut pebbles
  2. Swelling increases during the day and may resolve with rest and elevation
  3. Responds well to treatment

- Stage II
  1. Skin has indentations, pronounced “breeches” shape
  2. Palpable walnut sized nodules, and lipomas develop
  3. Eczema and erysipelas may be present
  4. Swelling increases during the day, with less resolution after rest and elevation
  5. May respond well to treatment

- Stage III
  1. Large disfiguring fat folds, chafing in folds
  2. Swelling consistently present
  3. Larger masses of skin and fat cause genu valgus
  4. Less responsive to some treatment modalities

- Stage IV
  1. Elephantiasis, possibly elephantitis
  2. Prominent symmetry present
  3. Larger masses of skin and fat that overhang
  4. Less responsive to some treatment modalities
Lipedema Stage 1
The skin surface is smooth and normal, the subcutaneous fatty tissue has a soft consistency but multiple small nodules can be palpated, subtle exaggeration of “pear” shape with “Thick legs, cankles.”

Lipedema Stage 2
Skin texture changes from smooth to uneven Indentations like an “orange peel” or a “mattress” feels nodular Fatty deposits start to grow around knees and thighs, and poss arms Legs thicken and lose their shape Edema can occur

Lipedema Stage 3
Progressive mattress effect Increased pain Decreased mobility Fibrous changes Orthostatic edema more prominent Pronounced genu valgum

Stage 2 Lipedema
Common patterns of fat deposition
Five anatomic types of lipedema

- **Type I**: adipose tissue increased on buttocks and thighs.
- **Type II**: the lipedema from hips to the knees with formation of fat pads on the inner side of the knees.
- **Type III**: lipedema extends from the hips to the ankles.
- **Type IV**: involving the arms and legs.
- **Type V**: lipo-lymphedema.

Fibrous tissue in lipedema fat

Lipedema in Vogue

Descriptors of fat patterns

Breeches or Jodhpurs

Harem pants or pantaloons

Lipedema prevalence in German PCP office

- 30% visits by women to PCP involve complaints about their legs
- 30% of these women will have lipedema
- 11% of German women have lipedema

Four stages of Lipedema
Lymphoscintigraphy findings
- tortuous and enlarged lymphatic channels
- delayed lymphatic flow
- lymph pooling, edema
- dilatation, thickening
- meta localization of lymph node
- enlarged lymph nodes
100% demonstrated lymphatic abnormalities (iv/iv)

Laboratory abnormalities
- Elevated D-dimer (tissue plasminogen activator) – presence of dynamic thrombosis
- Low vitamin D – usually <15 ng/ml (deficiency)
- Elevated IL-6 reactive protein (CRP) – indicator of inflammation
- Elevated homocystine – an enzyme that accelerates protein oxidation, decreased levels of folic acid and vitamin B12 can increase atherosclerotic risk and coronary
- Elevated fasting blood glucose, high A1C