

# A clinical quiz that turns heads

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This column is aimed at developing your clinical acumen. A clinical quiz will alternate with a short discussion of a clinical sign. You are invited to send us requests for future topics and to provide photographs of clinical signs for the quiz section. Kindly send a fax or e-mail with your requests and mail high gloss photographs or a disk with high resolution (300dpi) jpeg files to us. (See contact details above) Photographs may include clinical signs, photographs of poisonous insects, plants, snakes, contaminated water or anything that may cause sickness or disease in South Africa. Kindly provide a short clinical synopsis of 100-200 words from which a quiz can be formulated.

**This elderly person has suffered from pitting peripheral oedema for many years. To start appropriate treatment, it is necessary first to determine the aetiology. How will you approach this problem?**



quiz

## Answer

Always in medicine, a good history often makes the approach obvious: Is the oedema limited to one body part or is it generalised? The duration (weeks, months or years)? Previous surgery or trauma? Enlarged glands? Symptoms of heart failure, kidney disease, liver disease or malabsorption? The use of calcium channel blockers or other vasodilator drugs? Symptoms of inflammation (redness, heat, swelling, pain or loss of function)? Local trauma (heat, cold, chemicals, irradiation, allergies etc.)? Long distance travel history or travel to places where lymphatic parasites may occur. Distended veins, varicose veins or previous DVT's? Always consider **pre-tibial myxoedema**, which can become severe over many years, even after effective treatment for Graves' thyrotoxicosis. Myxoedema of Graves' as well as the myxoedema of hypothyroidism LOOKS like oedema but is actually mucopolysaccharide infiltration and not interstitial fluid.

### Approach:

1. Decreased venous return to the heart e.g.: Right heart failure, pericardial tamponade or constriction, varicose veins, venous occlusion (thrombus, tumour or constricting clothes).
2. Low oncotic pressure of the blood: The albumin content of interstitial (lymphatic) fluid is normally about 40% less than in blood. This albumin gradient "pulls" most interstitial fluid (but not the albumin) back into the capillaries. As the interstitial fluid gets less, the albumin becomes more concentrated and movement towards the capillaries will cease. Examples of low oncotic pressure in the vascular system:
  - Insufficient dietary albumin (kwashiorkor)
  - Insufficient albumin synthesis in the liver (Cirrhosis)
  - Excessive renal loss (nephrotic syndrome).
  - Protein losing enteropathy (a very rare cause).
3. Impaired lymphatic return e.g.:
  - Lymphatic blockage by malignant metastases to lymph glands.
  - TB infiltration of lymph glands.
  - Parasitic invasion of the lymphatics (*Mucheria bancrofti* or *Leishmaniasis* etc.).
4. Increased capillary permeability: It causes leakage into the interstitial space. It can be summarised as "inflammation". This may be due to bacteria (cellulitis etc.), viral, parasitic (Chagas disease, Leishmaniasis etc.), thermal (heat or cold injury), chemical (corrosives), mechanical (trauma) or immunological damage to capillary integrity (SLE, RA, Angio-neurotic oedema etc).

- Surgical interruption of lymphatics (e.g. radical mastectomy)
- Congenital abnormalities of lymphatics (Milroy's disease).
- Stasis (long distance air travel)