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?

**Answer**

1. Precise mention of the patient’s presenting problem.
2. Full medical examination of the patient.
3. Full blood examination to determine the coagulopathy.

Basically what oedema means is that more interstitial fluid leaks out of the vascular system than the lymphatic system can return. This involves four basic mechanisms:

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 (low albumin) pressure in the vascular system:
   - Insufficient dietary albumin (kwashiorkor)
   - Insufficient absorption from the intestine (malabsorption syndrome).
   - 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 (Wuchereria bancrofti or Leishmaniasis etc.)
   - Surgical interruption of lymphatics (e.g. radical mastectomy)
   - Congenital abnormalities of lymphatics (Milroy’s disease).
   - Stasis (long distance air travel)
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).

Approach:

As 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. Always consider pre-tibial myxoedema, which can become severe over many years. Even after effective treatment, the patient often retains some degree of swelling (oedema).