

exercise (Foldi et al., 1985).

Manual lymphatic drainage techniques have been found more effective in draining chronically edematous limbs than machines designed to reduce edema (Swedborg, 1985; Casley-Smith, Casley-Smith, 1986).

Symptom Picture

- ◆ There is increased interstitial fluid in the affected body part. The edema varies in texture and temperature according to the cause. Edema due to trauma is local or sometimes distal to the injury site. It looks taut and firm. The tissue is hot in the acute stage and, as healing progresses, the temperature decreases. In the case of chronic edema, the tissue may be cool due to ischemia.
- ◆ **Lymphedema** due to **general systemic conditions** affects the entire body. The edema frequently results in puffy and congested tissue.
- ◆ **Lymphedema** due to **local lymphatic obstruction** usually involves the whole limb distal to the edema site. It can be taut and firm (with parasitic infection or thrombophlebitis) or puffy and congested (following a lymphectomy) depending on the cause of the obstruction. The temperature may be cool due to ischemia or warm due to congestion.
- ◆ With **lymphedema resulting from surgery**, there may be a latent period following the operation where the tissue appears to return to normal. Weeks or years after the surgery, an apparently insignificant injury – a bruise, a cut, a sprained ankle, the pinprick of a diabetes blood sugar test or even an insect bite (Brennan, Weitz, 1992) – may provoke lymphedema distal to the scar.
 - It is possible that, during the latent period, excess fibrin not completely removed during the inflammatory repair process allows a gradual build up of plasma proteins in the distal tissue, leading to a state of “edemic readiness” (Harris, 1996). The addition of even a small amount of plasma proteins in the inflammatory response following a bruise or cut may tip the equilibrium towards lymphedema (Brennan, Weitz, 1992; Casley-Smith, Casley-Smith, 1986).
- ◆ **Non-pitted edema** is firm and discoloured. It results from coagulation of serum proteins in the interstitial spaces, usually following local trauma or infection (Porth, 1990).
- ◆ **Pitted edema** is boggy to the touch. The tissue retains an indentation after pressure is applied. In this type of edema, usually found with a chronic pathology, accumulation of the interstitial fluids exceeds their absorption rate (Porth, 1990; Wittlinger, Wittlinger, 1990).
- ◆ Pain or a feeling of discomfort or fullness is present in the affected body part. This may be local, as with a trauma, or diffuse, with chronic edema (Casley-Smith, Casley-Smith, 1986).
- ◆ There can be a decreased range of motion of an edematous limb. To the client, the limb may feel stiff or heavy.
- ◆ Local edema due to trauma follows a release of histamines. As part of the inflammatory process and tissue repair, fibrin and then adhesions form in the tissue. With a moderate or severe trauma, a hematoma may be present.
- ◆ An increase in lymphatic return prevents excess scar tissue formation (Wittlinger, Wittlinger, 1990).