

ADHESIONS

Lyn Paul Taylor, A.A., B.A., M.A., R.P.T.

(Editing Assistant and Computer Consultant: Joanna Soon, B.S.)

One of the consequences of *prolonged inflammation* is the formation of *non-scar tissue adhesions* within the tissues that have been inflamed. They are a worthy topic of discussion here in light of the fact that they are a direct and ongoing source of inflammation once they have been formed. *Adhesions* of this sort do not generally evolve spontaneously and are *not usually* (by others) considered part of a syndrome in its own right.

Adhesions are defined as tissue components that cause *tissue layers*, which normally slide freely over one another, to stick or *bind together*. The *adhesion* itself is usually a *fibrous tissue* constituted from a normal constituent associated with all tissues, *collagen*. Involved tissues, especially in chronic cases, will appear thickened and congested and are resistant to being rolled between the fingers or sliding over deeper tissues.

Adhesions are formed as a result of a reparative or reactive process to soft tissue stress and *inflammation*. They may result from *disease*, prolonged *restriction of joint motion*, or *surgical procedures*. They may also result from the trauma of bone fractures or external blows to muscle tissue or other soft tissue structures, or from *injuries causing soft tissue inflammation* and effusion or hemorrhage into muscle or other soft tissues. *Adhesions* may also develop in response to *local infection*, *spontaneous hemorrhage*, and are often associated with *joint capsulitis* and other *prolonged inflammatory conditions*. The extent of an adhesion formation is largely dependent upon the individual system's propensity for producing *excessive fibrotic material* in response to trauma.

Adhesions are generally located through *palpation* of soft tissues in the suspect area. Adhesed tissues will not slide over one another and may be difficult to manually separate. Additionally, because of their irritating nature, adhesions are often accompanied by *inflammation* and may thus be located through *differential skin resistance (DSR) survey*. (see INFLAMMATION)

Treatment

Treatment should be directed at *breaking* or stretching any *adhesion formations* and *relieving* any *predisposing conditions*, such as inflammation or habitual joint positioning.

Adhesions between the dermis and underlying tissues (fascia, muscle or tendon) have been successfully treated with a combination of *soft tissue manipulation* followed by *phonophoresis* of an effective non-steroidal *anti-inflammatory*. Soft tissue manipulation should be performed at right angles (transversely) to the long axis of the muscle or tendon fibers at the site of the adhesion (see SOFT TISSUE MANIPULATION, Soft

Tissue Manipulation, Soft Tissue Manipulation in Tight Areas). Phonophoresis should be applied to defeat any inflammation that may already be present or caused by manipulation.

References:

- J.V. Basmajian, *Manipulation, Traction and Massage*, Williams & Wilkins, Baltimore, Md., 1985. Pp. 158, 273-274
H.C. Bickley, *Practical Concepts in Human Disease*, Williams & Wilkins, Baltimore, Md., 1974. Pp. 52-53
R.B. Salter, *Textbook of Disorders and Injuries of the Musculoskeletal System*, Williams & Wilkins, Baltimore, Md., 1983. p. 244
A.R. Shands and R.B. Raney, *Handbook of Orthopaedic Surgery*, The C.V. Mosby Co., Saint Louis, Mo., 1967. p. 426
L.P. Taylor, T. Hui, *The Taylor Technique of Soft Tissue Management, Inflammation: Evaluation & Treatment*, 2002. p. 149