BACTERIAL INFECTION

The different types of tissues that may be invaded can be used to classify the various *bacterial infection syndromes*. Tissues are subdivided into three groups: (1) those on or near the surface of the body (dermal layers), (2) those directly involved with gaseous exchange (nasal sinuses, bronchial passages, and lung), and (3) the *deep* tissues (colon, external layers of the bone, or joint). The combination of symptoms that make up each syndrome may vary a good deal depending on the type of tissue that has been invaded.

The syndrome associated with *bacterial infection* of dermal tissues include the symptoms of localized increased temperature (calor), redness (rubor), tumor (swelling), accumulation of pus within comedones, pustules, papules, inflamed nodules, infected cysts, canalized inflamed and infected sacs, and palpation tenderness of infected sites.

The syndrome associated with acute *bacterial infection* of the sinus tissues includes symptoms associated with recurrent colds including copious postnasal discharge, com-plaints of frontal and temporal headaches, and frequent bouts of infraorbital and supra-orbital pain (see Sinusitis).

Symptoms that may combine to make up the syndrome associated with *bacterial infection* of the bronchial or lung tissues may include, in the early stages, shaking chill, sharp chest pain, fever, headache, and a dry and hacking cough that may produce purulent sputum (painful paroxysms of cough are likely to be extreme). A pleural friction rub may often be heard. Gastrointestinal symptoms may include abdominal distention, jaundice, diarrhea, nausea and vomiting. Tenderness and rigidity of the right upper quadrant of the trunk may be present, if the middle or lower lobes are involved. Herpes of the lips and face is often present. As infection progresses, the cough may be more productive of sputum that may be pinkish, blood-flecked or even rust colored at the height of the disease. During the stage of resolution, the sputum may finally become yellow and mucopurulent. Dyspnea may be present with rapid respiration and a peculiar expiratory grunt. Rales and suppressed breath sounds may be heard over the involved area. The patient may sweat profusely, be cyanotic, have a pulse rate of 100 to 130 beats per minute, and be acutely ill with temperatures ranging from 101 to 105° F.

Symptoms that may combine to make up the syndrome associated with *bacterial infection* of the tissues of the colon include cramping pain in the abdomen, abdominal distention (bloating), excessive flatulence, diarrhea (sometimes bloody), anemia, perforation of the colon, generalized infection, arthritis, and lesions of the skin.

The symptoms associated with *bacterial infection* of the surface layers of the bone may include sudden pain in the affected bone and a sharp rise in local temperature. The tissues lying over the infected site may be tender to palpation; movement of the infected bone may be restricted by pain, and there may be swelling over the infected bone and often in the adjacent joint.

The syndrome associated with *bacterial infection* of the joint is marked by rubor, calor, tumor, restricted motion, and pain in the joint.

Treatment

Clinical evidence has suggested that *bacterial infection* of the bone (osteomyelitis) may be treatable with ultrahigh frequency sound when the bone is close to the skin. Ultrasound the suspected site with the unit set to deliver a pulsed waveform, at to 1.5 W/cm², for six minutes. Use an effective nonsteroidal anti-inflammatory as the coupling agent (phonophoresis) and hold the sound head in place or slowly move it over the tissues above the infection site. Twelve sessions may be necessary to relieve all symptomology. The site may be treated twice a day with half an hour between applications. Likewise, *bacterial infections* of the skin, throat, and sinuses may also be successfully treated with ultrahigh frequency sound, in like manner. Bacterial sensitivity to ultrasound varies a great deal and depends on the bacterial strain involved (refer to Ultrahigh Frequency Sound (Ultrasound), Bacterial Infection Eradication).