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ACUTE INFECTIVE OSTEOMYELITIS.*

By EDGAR ALLIN, M.D., M.R.C.S. and L.R.C.P.

Assistant Surgeon to the Toronto Orthopedic Hospital; late House Surgeon to the General Hospital, Bath, Eng.; and House Physician and Pathologist to the Tottenham General Hospital, London, Eng.

ACUTE infective osteomyelitis is an acute inflammation of the bone marrow, due to some pyogenic organism reaching the part, either through some wound in the vicinity, or through the blood stream. When it is due to the latter the organisms enter the blood from some preceding infected focus such as a boil, an inflamed tonsil, or a lesion in the respiratory or alimentary tract, etc., or from an infected wound.

The disease commences in a medullary tissue, frequently in the diaphysis of a long bone close to the epiphyseal cartilage, where growth is most active, the circulation slow, the bone weakest and most liable to injury. Thus it occurs most frequently in the lower end of the femur, the upper end of the tibia and of the humerus, and lower end of the radius, in children and young adults. It may occur, however, in the medullary tissue in any part of the bone, not only in the long, but also in the flat and irregular bones.

The infection usually follows some preceding disease or condition which lowers the vitality of the system, and especially that of the bone marrow, which normally possesses a vital resistance to bacterial invasion. Among the diseases which often play an important part in preparing the child for the attack may be mentioned scarlet fever, typhoid fever, measles, influenza, pneumonia, tonsillitis and bronchitis. In a large number of cases on careful enquiry a history of some *local injury* such as a blow, or a sprain is often obtained. Exposure to wet and cold, especially if associated with fatigue, is another predisposing factor.

The micro-organism most frequently found is the *Staphylococcus pyogenes aureus*. The streptococcus may be found in children, and the organisms of typhoid and pneumonia may be present either in pure culture, or more frequently mixed with staphylo- or strepto-cocci. The colon bacillus has been found only in mixed infections.

The result of the inflammation of the medulla is that the part becomes greatly congested, fluid is poured out from the engorged vessels, and pus rapidly infiltrates the tissue and finds its way to the periosteum through the Haversian canals. The veins are thrombosed, and this thrombus becoming infected, may be partially liquified, and portions of it carried to

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