



Bulletin No. 17

August 5, 1983

## Seal Finger - An enigma and a challenge

On July 22, 1983 a 28-year-old Point Lay man was transferred to Alaska Native Medical Center (ANMC), Anchorage from Barrow PHS Hospital with a red, swollen right thumb. On June 25, while gutting a spotted seal, he had punctured the thumb with a seal rib. Several days later, the puncture site became red, and the entire thumb became painful. Treatment with various penicillins was instituted, but despite these antibiotics inflammation progressed. The thumb swelled to 1½ times its normal size and became frozen in a position of flexion. At ANMC, the patient appeared to be well but for his inflamed, and now draining thumb. He was not febrile. White blood cell count showed 13,200 white blood cells of which 67% were polymorphs. X-ray showed early degenerative changes around the interphalangeal joint. Several aerobic and anaerobic cultures taken during his hospital stay grew no organisms. After minimal response to intravenous cloxacillin, there was excellent response when an oral tetracycline regime was initiated.

"Seal finger" is a finger infection associated with bites, cuts, or scrapes contaminated by the mouths, blood, or blubber of certain marine mammals. Noted in all areas of the world where salt water sealing is practiced, the incidence of "seal finger" in Alaska as elsewhere has declined markedly during the last 50 years. Unanswered questions remain as to the epidemiology of "seal finger"; it is unclear which marine mammals can produce "seal finger", which parts of the mammal transmit illness, and whether sites other than thumbs and fingers can develop infection. No etiologic agent has been isolated.

An extensive investigation of "seal finger" was published by Candolin in Finland (1953). He described cases occurring from Spitsbergen in the North to South Georgia in the Antarctic. From interviews with patients throughout Scandinavia, Candolin described 244 occurrences in 193 patients. He found that cases occurred primarily in spring, were associated more with adult seals than with pups, and could not be associated with seals taken from fresh water. In only 22 of these cases could trauma not be associated with the onset of "seal finger". He described old wounds, scratches on the ice, wounds from harpoons, and seal bites as being of greatest significance.

The median incubation period for "seal finger" appears to be 3-4 days. There is an initial papular lesion at the sight of injury which progresses to a diffuse cellulitis with lymphangitis and frequent involvement of the joint nearest the initial lesion. Untreated, the course of "seal finger" is slow and results often in thickened contracted joint. While penicillins and sulfonamides are not of benefit in "seal finger", tetracycline has empirically been effective. With tetracycline therapy, "seal finger" has declined in significance. Despite various attempts to find an organism that causes "seal finger", none has been found.

In association with William Paton, M.D., Orthopedic Department, Alaska Native Health Service, the Epidemiology Office has undertaken a search for the organism causing "seal finger". We are being assisted by the Section of Laboratories, Division of Public Health, State of Alaska and the Centers for Disease Control in Anchorage and Atlanta. We would appreciate hearing from those who have seen and treated "seal finger" patients. We particularly are looking for new cases of "seal finger" presenting prior to the institution of antibiotic treatment so that special cultures can be taken. Please call the Epidemiology Office, 561-4406, to report any suspected or confirmed cases.