



Bulletin No. 24

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## Outbreak of Ultraviolet (UV) Keratopathy

On Monday, October 18, a professional basketball game was held in Anchorage at the Buckner Field House at Ft. Richardson, attended by approximately 4,000 enthusiastic fans. The morning after the game, however, several individuals who sat together in one section of the stands noted the onset of eye irritation. Patients had very similar symptoms which consisted of redness and tenderness around the eyes and a feeling that the "eyes were sunburned." Several patients who wore contact lenses noted severe eye injection and tenderness as well as a feeling of irritation. In addition to the redness, burning, itching and irritation around the eyes, individuals also felt that the skin of their cheeks, eyes, and in some cases, their necks felt sunburned. Friends sitting nearby who were wearing regular eyeglasses did not experience similar symptoms of eye irritation.

The symptoms appeared to be confined to individuals who sat in one section of the field house. No unusual problems from chemical exposure, smoke, or malfunction of field house lights was observed. Many individuals, however, commented on the intensity of the lighting which was necessary in order to provide television coverage of the sporting event. Consultation with an Anchorage ophthalmologist revealed that the symptoms described were those classically associated with UV light keratopathy. Physicians and environmental field personnel at Ft. Richardson conducted a check of the metal halide lamps used to illuminate the Buckner Field House. They discovered one malfunctioning lamp, and, additionally, the automatic shut-off switch failed to operate. The lamp malfunction is thought to have emitted UV light, similar to that which is used in tanning parlors, which was responsible for this outbreak of eye irritation in persons sitting in the exposed section of the field house. The malfunctioning lamp has been replaced and no further problems expected. Ultraviolet light keratopathy can occur from exposure to UV light in tanning parlors or from any exposure to an ultraviolet light source. While acute eye irritation is commonly seen, no long-term adverse effects are known to occur. All persons recovered uneventfully.

(Reported by Dr. Kenneth Richardson, Anchorage and Dr. Linke, Ft. Richardson)

## ANISAKIASIS FROM RED SALMON

On July 12, 1982 a dramatic outbreak of Anisakiasis occurred in six people who ate salmon steaks from a red salmon caught in Chitna. The fish had been caught the day before and kept in a refrigerator overnight, but was not frozen. It was baked at 350 for less than one-half hour. Those eating recalled that the fish, particularly along the spine, appeared to be raw. Four of the six persons who ate the fish developed severe stomach pains and, within one hour after eating the meal, vomited viable worms about 2 centimeters in length. One of the individuals, a 26-year-old male, developed severe stomach pain, nausea, continued vomiting, and weakness which lasted for three days. The other individuals experienced stomach pains and cramps for several hours after the meal but then recovered without complication.

Anisakiasis is a nematode, a round worm, similar to ascaris. The parasites reside in the intestines of sharks and other marine mammals. The worms excrete eggs which hatch in the water and are subsequently ingested by plankton eating crustacea. Fish serve as intermediary hosts when they ingest the infected crustacea and the larvae encyst in the body cavities of the fish until consumed by the final host. Human infection occurs when man ingests the larvae which can burrow into the submucosa of the intestinal wall where they induce a vigorous eosinophilic and granulomatous response. Rarely, a worm will penetrate the gut and enter the peritoneal cavity where acute peritonitis can occur. The diagnosis can be difficult if worms are not vomited because no eggs appear in human stool and no serological tests exist to assist in the diagnosis. Anisakiasis is ubiquitous in Alaska salmon and other marine fish. The infection can be prevented by:

1. Immediately gutting the fish after catching it, which blocks the migration of the parasite into the muscles of the fish,
2. Freezing at minus 20 for 24 hours
3. Cooking to reach a temperature of 50 for one minute,
4. Brining in solutions at a concentration of greater than 15%.