

Accidental Self-Injection of Oil Emulsion Vaccines

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Injection Injuries to the Hand

The injection of foreign material into the fingers or palm is a potentially serious injury. Vaccine, utilized to immunize poultry, consists of inactivated virus and/or bacteria in an oil emulsion carrier. This can be accidentally injected into the fingers if proper care is not taken while performing the injection.

Pathology

After entry of the vaccine into the hand, it can remain in a small area or distribute itself along the tendon sheath and neurovascular bundles far from the injection site. There is some direct injury to tissue at the time of injection but within 24 hours, there is usually an inflammatory response resulting in significant swelling and increasing pain. Subsequent problems occur with the possible onset of bacterial infection and late formation of oleogranulomas (swelling resulting from chronic inflammation because of the body's response to the oil emulsion). If the blood supply of the finger remains intact, the late problems consist of continuing pain and stiffness of the involved part. One would not expect the inactivated viruses or bacteria involved to be a problem by themselves as they do not produce disease in man, and further there are no living organisms present.

Suggested Possible Treatment

The best treatment is prevention! These injuries occur more often in persons less experienced in the use of injection equipment. Proper instruction in their use and the serious nature of the injury should be stressed.

If an accident does occur, it is recommended that the victim be immediately referred to a surgeon experienced in the care of hand injuries. They should not be handled in an office setting by someone unfamiliar with the problem.

TIME IS EXTREMELY IMPORTANT. DO NOT DELAY TREATMENT.

Although there is some disagreement among hand surgeons about treatment, the following is an outline of the usual course taken.

1. Zeroradiograms (special soft tissue x-rays) can help to ascertain the extent of distribution of the oil material in the finger or hand. If little or no oil was actually injected, the inflammation may subside spontaneously over several weeks or with the use of Cortisone, even if the needle penetrated deeply into the hand. If history and radiograms indicate a conservative approach, a period of close careful observation and functional evaluation (flexion studies) should be carried out.
2. If oil emulsion vaccine was actually injected, an extensive debridement (opening the affected part and removing as much of the foreign material as possible) should be carried out. The wound is generally left open and closed later.
3. Broad spectrum antibiotics are given in high doses for as long as two weeks depending on the clinical picture.
4. The use of an anti-inflammatory drug, such as Cortisone, should be considered.