



FIG 5-8 LMX (liposomal lidocaine cream) is an effective analgesic before intravenous (IV) insertion or blood draw.

In emergency situations, there is not enough time for topical preparations like LMX or EMLA to take effect, and refrigerant sprays, such as ethyl chloride and fluoromethane can be used. When sprayed on the skin, these sprays vaporize, rapidly cool the area, and provide superficial anesthesia. Hospital formularies may have other products with lidocaine, prilocaine, or amethocaine topical preparations that require less time for application.

The intradermal route is sometimes used to inject a local anesthetic, typically lidocaine, into the skin to reduce the pain from a lumbar puncture, bone marrow aspiration, or venous or arterial access. One problem with the use of lidocaine is the stinging and burning that initially occur. However, the use of buffered lidocaine with sodium bicarbonate reduces the stinging sensation.

Monitoring Side Effects

Both NSAIDs and opioids have side effects, although the major concern is with those from opioids ([Box 5-4](#)). Respiratory depression is the most serious complication and is most likely to occur in sedated patients. The respiratory rate may decrease