

Correspondence

No difference between daily and weekly pin site care

Sir—In a paper by W-Dahl et al. (2003), the authors describe rather intricate routines for the care of external fixators. During the last two decades, I and most of my colleagues at three hospitals have used a simple protocol which has also been taught at several courses on fracture treatment with external fixators.

After surgery, the pins (or, rather, screws) are bandaged with small dry sterile gauzes which are left in place for 10–14 days.

Then the patient is instructed to wash the wounds with liquid soap and ordinary tap water when he/she takes a daily shower. If the screws require cleaning, this is easily done with a clean new toothbrush and the wounds, screws and external fixator are flushed with the shower. When the skin and wounds have dried (if necessary, with the help of a hair-dryer), small dry gauze bandages are applied around the screws, but circular bandages are not used. The crusts on the skin are left in place. Dry crusts fall off by themselves. There is no use of cotton buds, and no care from a district nurse is required, most patients can manage these daily routines themselves.

By using this simple protocol for postoperative care of external fixators, we have reduced the number of “pin” tract infections to a minimum. There is no need of prophylactic antibiotics after the day of surgery. Dry wounds around stable screws do not become infected. A few of our patients carrying external fixators for long time have even omitted bandages altogether, but have practiced daily cleaning as described.

The two most common causes of a “pin” tract infection are skin tension around a screw and/or loosening of a screw. Skin tension is treated by a sharp incision, and loose screws should be replaced. According to my personal experience, conical screws are less reliable than e.g. straight apex screws which are safely anchored in both cortices. In the metaphyseal parts of the tibia, a

half-ring montage with four screws applied in different directions, thereby locking each other, or an Ilizarov ring is mechanically safer than two parallel screws.

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Sir—We thank Ulf Lindsjö for his response to our article. According to his experience, pin site infection is a minor problem. However, pin site infection is the most common complication of treatment by external fixation (De Bastiani et al. 1984, McEachern 1989, Checketts et al. 1995, Magyar et al. 1998). Pin site complications are the major drawback of external fixation, and the reason why many do not use it.

Sims and Saleh (2000) and Gordon et al. (2000) have described similar protocols for pin site care but defined pin site infection in different ways. Sims and Saleh reported that 71% of their patients had pin site infection, whereas Gordon et al. reported 4% infections at each time of evaluation. As the pin protocol of Ulf Lindsjö does not refer to any published material, it seems that there are many more or less personal protocols. The only way to evaluate pin site care techniques is to use a strict definition of pin site infection and to document its incidence and the use of antibiotics.

Ulf Lindsjö highlights skin tension and pin loosening as being the most common causes of a pin site infection. Skin tension is related to the surgical technique and can be avoided. Pin loosening can

be caused by a pin infection. Surgical technique and pin type (design and coating) influence the risk of infection. External fixation often allows early mobilization with weight bearing and a high level of activity, an advantage over many other types of treatment. In active patients, however, skin movement, especially close to the joint, occurs around the pins and increases the risk of inflammation and infection.

The purpose of our study was to evaluate commonly used pin care procedures in a reliable way, and to create a pin site care protocol minimizing the infection rate and other complications. To study the effect of a pin site care protocol, it is necessary to see the patients often and include relevant aspects of pin site care such as dressing, removal of crusts and the use of cleansing agents.

Contrary to the experience of Ulf Lindsjö regarding conical screws, this design has been shown to generate less heat in bone during insertion (Wikenheiser et al. 1995), to optimize bone grip (Lavini et al. 1994), and to reduce the stress on the screws during dynamization in fracture treatment (Aro et al. 1988). The use of hydroxyapatite-coated conical pins in metaphyseal bone improves the strength of fixation of the bone interface, and leads to a lower rate of pin site infection (Moroni et al. 2001).

Ulf Lindsjö's suggested alternative for enhanced mechanical stability in the metaphyseal part of the proximal tibia complicates—for both the surgeon and the patient—the easy technique with 2 proximal conical screws we use for hemicallotaxis osteotomy.

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