

Use of the Peridural Catheter With Subcutaneous Port in a 13-Year-Old Girl: 120 Anesthesia Procedures in 31 Months

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● The authors report their experience using a peridural catheter with a subcutaneous port. This was used to obtain 120 peridural anesthesia inductions during a program of surgical debridement in a 13-year-old girl. The authors advocate the use of epidural dexamethasone to treat the ineffective anesthetic injection through a long-lasting catheter.
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REPEATED painful procedures in a child, such as surgical debridement, are management problems for an anesthetist. A large number of general anesthesia procedures, with venous access, can be stressful for a young patient. Techniques of regional anesthesia, used for pain therapy in adult patients, can prove useful in such situations.

CASE REPORT

A 13-year-old girl (weight, 45 kg) had a total colectomy performed for ulcerative colitis. The postoperative course was complicated by a large abscess with a fistula to the perineal area.

Surgical debridement was carried out to obtain healing of the wound. These painful procedures were at first performed with the patient under general anesthesia. Later a peridural catheter with a subcutaneous port was implanted owing to the great number and long duration of the surgical procedures. With the patient under local anesthesia, we implanted a peridural catheter at the L1-L2 level with the subcutaneous port in left hypocondrium. From December 1990 until June 1993 (31 months), two weekly peridural anesthesia procedures were performed without hospitalization. Table 1 shows the changing anesthetic patterns related to problems that arose during treatment.

To obtain a good anesthesia level in all sessions, we had to progressively increase the volume and concentration of the local anesthetics. Every other week, we injected dexamethasone (2 mg) (Decadron; Merck Sharp & Dohme, Haarlem, Holland), together with the local anesthetic, to avoid peridural tissue reaction to the indwelling catheter.

After 400 days, the peridural injection of the anesthetic began to be ineffective, leaving some body areas sensitive to pain despite increased anesthetic doses and the addition of fentanyl (Fentanest; Carlo Erba, Nerviano, MI, Italy). An imaging study of the peridural space, using iopamidol (Iopamiro 300; Bracco, Milan, Italy), confirmed the correct position of catheter and showed no fibrotic tissue reaction or obstruction to injection. Dexamethasone was administered through the peridural catheter (2 mg in 8 mL of saline) daily, for 5 days, without surgical debridement of the wound.

After this treatment, peridural injection of the anesthetic once again became effective and has continued to be successful. We have performed 120 peridural anesthesia procedures without hospitalization or complications. The skin over the port is intact

Table 1. Anesthetic Patterns During Treatment

Local Anesthetic	%	mL	Anesthesia		Associated Drugs
			Yes	No	
Lidocaine	1	15	6	1	Dexamethasone, 2 mg every other week
Lidocaine	1	17	0	1	Dexamethasone, 2 mg every other week
Bupivacaine	0.35	13	5	1	Dexamethasone, 2 mg every other week
Bupivacaine	0.40	17	13	1	Dexamethasone, 2 mg every other week
Bupivacaine	0.42	18	9	1	Dexamethasone, 2 mg every other week
Bupivacaine	0.42	20	14	1	Dexamethasone, 2 mg every other week
Bupivacaine	0.42	24	10	1	Dexamethasone, 2 mg every other week
Lidocaine	2	12	0	2	Dexamethasone, 2 mg every other week
Lidocaine	2	12	0	2	Fentanyl, 45 µg
Steroid	Dexamethasone, 2 mg, + saline, 8 mL, once a day for 5 days				
Lidocaine	2	12	52	0	Fentanyl, 45 µg Dexamethasone, 2 mg every other week

and only slightly thickened. The patient's compliance has been good and the surgical debridements are continuing.

DISCUSSION

A peridural catheter cannot be kept in place indefinitely. After a few days, a fibrotic tissue reaction begins to occur around the tip of catheter. The reaction may be associated with painful syndromes of rachis and, partly, with ineffective injection of the anesthetic.¹

Various investigators have described the efficacy of peridural steroid injection in the treatment of painful syndromes accompanying epidural fibrotic adhesions.² Epidural adhesions have been treated successfully by in situ injection of dexamethasone.³

In our patient, 400 days after catheter positioning,

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tachyphylaxis and incomplete distribution of anesthesia were managed by 2-mg injections of dexamethasone through the catheter, once a day for 5 days. In our opinion, this technique, together with subsequent

weekly administration (2 mg) of the same steroid through the peridural catheter, likely worked to make the device still function well after more than 31 months.

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