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Unilateral Cervical Epidural

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Unilateral and partial epidural block is reported occasionally,^{1,2} but relatively rarely considering the frequency of lumbar epidural analgesia. A much less frequently performed block is that of the cervical region, which finds its main application in treatment of chronic pain such as tension-induced neck pain and headache. We also have observed in this region unilateral or partial block and in the following, we report one such case and its investigation.

REPORT OF A CASE

A 48-year-old man complained of dorsal and lumbar pain that had developed while he was working on an assembly line. Occasionally he was treated by his family physician and an orthopedic surgeon with physiotherapy without improvement. He started to complain of occasional numbness in the right hand. The remainder of his medical history was unremarkable, apart from minor changes seen on cervical roentgenogram. Two years ago he quit work because of the pain and continued to seek medical treatment, without relief. On examination, nothing remarkable was found apart from some suboccipital and cervical tenderness. There was no sensory deficit. He was diagnosed as having anxiety/depressive neurosis, tension headaches and possibly, subclinical osteoarthritis. A treatment program of cervical epidural block with local anesthetic, transcutaneous nerve stimulation, antidepressant medication, and psychotherapy was instituted.

The cervical epidural was performed by placing the patient in the sitting position and flexing him forward on a pillow. Local analgesia was injected around the C7-T1 interspace. The epidural space was located using the hanging drop method and confirmed by loss of resistance to air. Lidocaine 1.5%, 2 ml, was injected into the epidural space, and a catheter was inserted cephalad for several centimeters. After securing the catheter, the patient was placed in the supine position, and a further 5 ml lidocaine 1.5% was injected. The patient was found to have no analgesia to needle prick on the right hand side, although there was a block from C3 to T1 on the left. Further injection of lidocaine was without affect, and all modalities remained intact on the right side. One week later, the procedure was repeated with the same result. On this occasion, a cervical epidurogram was done using metrizamide 200 mgI₂/ml. A volume of 7 ml was injected, and roentgenograms were taken. A further 7 ml was injected, and more roentgenograms were taken. There appeared to be less dye on the right side of the cervical epidural region than on the left. One week later the same procedure was repeated when there was again a unilateral block. This time a much smaller volume (2 ml) of metrizamide (300 mgI₂/ml) initially was injected, and there was clearly a deficit in filling on the right side (fig. 1). Subsequent injection of metrizamide filled the entire epidural space, but there remained less density in the right cervical region.

The other therapeutic modalities were continued during this time. Currently the patient complains of less pain, is less depressed, sleeps better, and is looking for work.

DISCUSSION

This case illustrates that unilateral epidural block in the cervical region can be related to failure of distribution of the local anesthetic to one or the other side. This occurred in one case reported by Shanks¹ and was not seen in cervical roentgenograms by Jacobs and McCormick³ or in the lumbar and thoracic epidurograms by Bromage *et al.*⁴ The actual cause could not be determined from these results. The catheter placement probably was not at fault, since the same unilateral block was produced repeatedly and metrizamide spread freely in all directions except into the right cervical epidural space. A septum seems an unlikely explanation, since entry of

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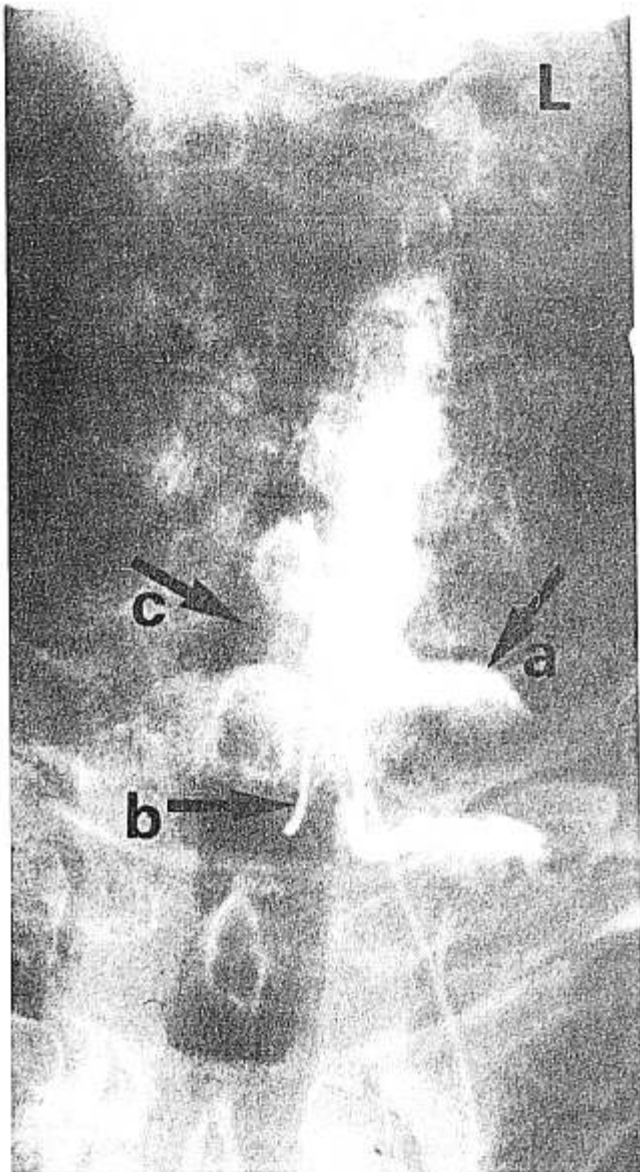


FIG. 1. Epidurogram with 2 ml metrizamide 300 mgI₂/ml, showing dye only on left. a) extension of dye into intervertebral foramen; b) epidural catheter; c) epidural space without dye.

the local anesthetic or dye at either end of the septum would be expected. Rather, the space appeared obliterated, thereby preventing access of the dye and local anesthetic to the segmental nerve roots. Apart from the complaint of pain, which we believe to be related to muscle tension, there were no other signs or symptoms of a space occupying lesion. We concluded, therefore, that adhesions between the dura and ligamentum flavum was the most likely explanation for these findings. Since this patient had had no surgery, this may be simply an incidental finding, with no pathologic or other implications except the failure to achieve a bilateral block. This case also demonstrates, once again, that metrizamide may be used for epidurograms. We can not say whether other cases of unilateral cervical epidural block, which we have observed, are due to a similar lack of spread.

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