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Removal of Water-Soluble Contrast Media after Cervical Myelography Using Cervical Injection

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The development of thin-section high-resolution computed tomography (CT) has resulted in increased use of postmyelogram CT for the diagnosis of cervical disk disease. Complications of myelography appear to be related to the dose and the amount of intracranial spillage. Postmyelogram and pre-CT removal of water-soluble contrast material decreases the total dose of contrast material without compromising either study. We developed a method for safe and efficient removal of some of the contrast material from the cervical subarachnoid space. Our method permits *immediate* postmyelography CT for evaluation of disk disease, cord tumor, or metastatic disease without increased morbidity. This method also allows us to use water-soluble contrast material above the level of a cervical or high thoracic block without fear of adverse reactions and does not preclude the immediate use of contrast material introduced via lumbar puncture to outline the lower margin of the block.

Complications associated with metrizamide (headache, nausea, emesis, hallucinations, photophobia, psychic disturbances, generalized seizures, motor deficits, and visual disorders) develop within 4–6 hr after myelography and coincide with CT demonstration of penetration into the brain and spinal cord [1–6]. Cervical myelograms have a greater incidence of complications than do lumbar myelograms because lumbar procedures keep contrast material away from the brain and metrizamide is absorbed while in a caudal location (half-life in the subarachnoid space is 4 hr) [7]. It has been reported that 66% of contrast material can be recovered by aspiration after lumbar myelography [8]. We believe a significant amount of the contrast material can also be retrieved after cervical myelography using the direct cervical approach, thus decreasing the concentration contacting the brain.

Technique

At our institution, cervical myelography is performed using a cervical injection at the C1–C2 level with the patient in the prone position. The needle remains in place throughout the procedure. No complications have occurred. Under fluoroscopic guidance, 10–11 ml of 220 mg I/ml of metrizamide is introduced. The patient is placed in Trendelenberg or reverse-Trendelenberg position as necessary to pool the contrast material in the cervical lordosis and outline the area of interest. Routine films are obtained as needed and are examined before removal of contrast material. The obturator is removed when the study is complete, and the patient is again positioned under fluoroscopy so that the contrast material pools in the upper cervical region, and 10–15 ml of contrast material mixed with cerebrospinal fluid is removed by simple gravitational flow. No aspiration is performed and the removal requires about 5 min. After CT the patient is treated as though he/she had a lumbar myelogram and is kept in a 45° head-up position for 8 hr. We push fluids and require bed rest for 24 hr.

This method of removing contrast material is easy to perform, does not increase morbidity, and does not significantly prolong the procedure.

REFERENCES

1. Carella A, Federico F, Di Cuonzo F, Vinjau E, Lamberti P. Adverse side effects of metrizamide and iopamidolo in myelography. *Neuroradiology* **1982**;22:247–249
2. Killebrew K, Whaley RA, Hayward JN, Scatliff JH. Complications of metrizamide myelography. *Arch Neurol* **1983**;40:78–80
3. Ekholm S, Fischer H. Neurotoxicity of metrizamide. *Arch Neurol* **1985**;42:24–25
4. Butler MJ, Cornell SH, Antonio DR. Aphasia following pluridirectional tomography with metrizamide: the effect of patient position. *Arch Neurol* **1985**;42:39–45
5. Rolfe EB, Maguire PD. The incidence of headaches following various techniques of metrizamide myelography. *Br J Radiol* **1980**;53:840–844
6. Sackett JF, Strother CM, Quaglieri CE, et al. Metrizamide—CSF contrast medium. *Radiology* **1977**;123:779–782
7. McCormick CC, ApSimon HT, Chakera TMH. Myelography with metrizamide—an analysis of the complications encountered in cervical, thoracic and lumbar myelography. *Aust NZ J Med* **1981**;11:645–650
8. Hurwitz SR, Suydam M, Steinberg A. Aspiration of metrizamide following lumbar myelography. *Radiology* **1980**;136:789–790

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