because the increased bulk tends to increase fecal distention and discomfort without producing the necessary mechanical stimulation.

Footdrop and weakness and numbness of the extremities are another common neurotoxic effect and may cause difficulty in walking or fine hand movement. The nurse should look for these problems and warn parents of these side effects, which are reversible once the drug is stopped. Wearing high top tennis shoes or using a footboard in bed is used to preserve proper alignment. If weakness occurs while the child is attending school, temporary alteration of activity may be necessary. Parents should inform the teacher of the situation to avoid unrealistic expectations of the child's abilities.

Another neurotoxic effect is severe jaw pain. Analgesics may help relieve the discomfort. Children may avoid movement by not talking or chewing, although continuous chewing, such as with gum, may actually reduce the pain. A neurologic syndrome, post-irradiation somnolence, may develop 5 to 8 weeks after CNS irradiation and last for 4 to 15 days. It is characterized by somnolence with or without fever, anorexia, and nausea and vomiting. Parents should be warned of the possibility of such symptoms and encouraged to seek medical evaluation, because somnolence may be an early indicator of long-term neurologic sequelae after cranial irradiation.

## Hemorrhagic Cystitis

Sterile hemorrhagic cystitis is a side effect of chemical irritation to the bladder from chemotherapy or radiotherapy. It can be prevented by (1) a liberal oral or parenteral fluid intake (at least one and a half times the recommended daily fluid requirement [2 liter/$m^2$/day]); (2) frequent voiding immediately after feeling the urge, including immediately before bed, one nighttime void, and upon arising; (3) administration of the drug early in the day to allow for sufficient fluids and frequent voiding; and (4) administration of mesna, a drug that inhibits the urotoxicity of cyclophosphamide and ifosfamide.

### Nursing Alert