

**Stage IV-S:** Localized primary tumor (as defined for stage I, II-A, or II-B) with dissemination limited to liver, skin, or bone marrow but not to bone

Infants who remain free of disease for 1 year after treatment are usually cured, but older children have experienced relapses several years after cessation of treatment. Surgical resection of the tumor in stage I appears to be greater than 90% curative ([Brodeur, Hogarty, Bagatell, et al, 2016](#)). Neuroblastoma is one of the few tumors that demonstrate spontaneous regression (especially stage IV-S), possibly as a result of maturity of the embryonic cell or development of an active immune system.

## **Therapeutic Management**

Accurate clinical staging is important for establishing initial treatment. Therefore, the purpose of surgery is both to remove as much of the tumor as possible and to obtain biopsies. In stages I and II, complete surgical removal of the tumor is the treatment of choice. If the tumors are large, partial resection is attempted, with a course of irradiation postoperatively to shrink the tumor in the hope of complete removal at a later date. Surgery is usually limited to biopsy in stages III and IV because of the extensive metastasis.

The precise role of radiotherapy is unclear. It does not appear to be of any benefit in children with stage I and II disease. It can be used with stage III disease, although it may not improve survival expectancy. Radiotherapy for paraspinal neuroblastoma is no longer recommended because the radiation therapy has long-term morbidity and chemotherapy is safe and effective initial treatment modality ([Brodeur, Hogarty, Bagatell, et al, 2016](#)).

Chemotherapy is the mainstay of therapy for extensive local or disseminated disease. The drugs are administered in a variety of combinations according to specific protocols. In addition, the use of consolidative myeloablative therapy using autologous marrow or peripheral stem cells followed by 13-*cis*-retinoic acid has improved the outcome of patients with high-risk disease.

## **Nursing Care Management**

Nursing care management is similar to that discussed under