

## Bone Marrow Aspiration and Biopsy: Collection and Interpretation

Kathryn G. Trehitt, RN, MS, CRNP, OCN®

**Purpose/Objectives:** To describe the role of the oncology nurse practitioner in the performance of bone marrow aspiration and biopsy and discuss the indications and diagnostic value of bone marrow examination.

**Data Sources:** Published articles, textbooks, personal experience.

**Data Synthesis:** Bone marrow examination is useful in the diagnosis of many nonhematologic and hematologic conditions. Having a nurse practitioner perform bone marrow aspiration can improve patient care and comfort.

**Conclusions:** Greater understanding of bone marrow aspiration procedure and diagnostic tests helps nurse practitioners and oncology nurses to provide better patient care.

**Implications for Nursing Practice:** Advanced practice nurses in the oncology setting must take an active role in the development and implementation of clinical practice protocols for bone marrow collection.

For many patients, bone marrow biopsy is a dreaded procedure. In addition to it being uncomfortable, if not painful, patients experience anxiety that the results may mean further treatment and yet another confrontation with one's mortality. Bone marrow biopsy is a diagnostic procedure commonly used to (a) detect and stage malignancy, (b) differentiate benign hematologic diseases (e.g., aplastic anemia, Waldenstrom macroglobulinemia), and (c) evaluate progression of human immunodeficiency virus. Traditionally, physicians have performed this procedure, with the nurse present for assistance and as a source of emotional support for patients. As the role of the advanced practice nurse (APN) in oncology has evolved, specially trained nurse practitioners (NPs) and, in some states, certified baccalaureate nurses now perform bone marrow aspiration and biopsy independently. Training requirements vary by institution but include satisfaction of competencies that address responsibility and accountability issues. After observing a physician or certified member of the medical team, APNs must successfully perform several supervised and independent demonstrations of the procedure. These nurses play a key role in obtaining bone marrow samples, supporting patients during the procedure, and teaching patients about the results. This article presents in-

### Key Points . . .

- ▶ Bone marrow examination evaluates or confirms many benign as well as malignant nonhematologic and hematologic conditions.
- ▶ In some states, specially trained nurse practitioners and certified baccalaureate nurses can perform bone marrow aspirations and biopsies independently.
- ▶ Obtaining informed consent, collecting adequate specimens, and managing acute procedural pain are priorities for the oncology nurse practitioner.
- ▶ A need exists for oncology nurses to understand the indications and diagnostic value of bone marrow examination to educate patients about the procedure and interpretation of the results.

### Objectives for CE Enrollees

- On completion of this CE, the participant will be able to
1. Describe the indications for bone marrow examination.
  2. Describe diagnostic and nursing considerations for the patient undergoing bone marrow examination.
  3. Describe procedural and testing considerations for bone marrow examinations.

formation about bone marrow examination, techniques for collection, and procedural pain management. With this knowledge, nurses can more effectively help their patients through an anxious time and enhance their understanding of their diagnosis.

*Kathryn G. Trehitt, RN, MS, CRNP, OCN®, is a clinical research nurse at the National Institutes of Health at the Warren G. Magnuson Clinical Center in Bethesda, MD. (Submitted January 2001. Accepted for publication May 7, 2001.)*