



Heartland
Pathology
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Bone Marrow Collection Procedure

In order to obtain maximum diagnostic information from the bone marrow evaluation, multiple types of preparations are necessary. These include peripheral blood smears, bone marrow biopsies, bone marrow clot sections, and bone marrow aspirate preparations. Maximum information is gained when all these specimens are obtained, labeled correctly, and processed appropriately.

Clinical History

Some reasonably appropriate clinical history should accompany the bone marrow. This should include a brief history of the patient's problems as they relate to possible findings within the bone marrow examination. It is useful to know relevant laboratory data such as Iron studies, Folate or Vitamin B-12 studies, transfusion therapy, or history of chemotherapy. The physician's clinical impression is also quite helpful, and should be included on the form.

Bone Marrow Biopsy Core

Bone marrow core biopsies provide considerable information of diagnostic value for adequate bone marrow interpretation. Some bone marrow findings are apparent only on biopsy specimens. These include evaluation of tumor nodules or infiltrates, bone marrow fibrosis, and overall representative cellularity. Whenever feasible, a bone marrow biopsy is recommended.

Preparation for a bone marrow biopsy core sample:

1. Obtain biopsy core specimen from posterior iliac crest.
2. Make several touch preps of the bone marrow core by touching the core lightly to a clean glass slide.
3. Place bone marrow core biopsy in 10% buffered formalin.

Bone Marrow Aspirate

Bone marrow aspirate is an important part of appropriate bone marrow evaluation since the aspirate contains the cellular material which when properly prepared allows for the appropriate classification of cellular abnormalities within the bone marrow. Preparation of bone marrow aspirate material:

1. Draw bone marrow aspirate in a syringe containing no anticoagulant.

2. Make four to eight slides by putting a single drop of marrow aspirate from the syringe or needle on each slide and a making a blood film as you would with a peripheral blood smear. Thoroughly air dry. Label these slides "ASP". Proper labeling of this material is very important since it is not always possible to identify the source of smears, especially when marrow aspirates are markedly hypocellular.
3. Fill a 5 ml blood tube (containing approximately 0.5 ml of EDTA) with 1.5 ml of bone marrow aspirate material. Mix well to prevent clotting as soon as possible after the aspirate is drawn. Label this tube, "Aspirate".
4. Place the remainder of the aspirate material in a tube with no anti-coagulant and allow the material to clot. The clot should then be placed in 10% buffered formalin.
5. Also collect a tube of EDTA peripheral blood and 3-4 smears labeled "peripheral." A copy of the CBC printout from the hematology analyzer is also helpful.

All collected samples, including all slides, aspirate material, clotted material in formalin, and bone marrow core biopsy in formalin should be placed in a bone marrow transport bag with a clinical information sheet, and any appropriate laboratory information, i.e. recent CBC results.

STORAGE: Refrigerate everything except slides until submitted for transport.

Please contact Heartland Pathology Consultants if there are any questions regarding these procedures, and we will be happy to assist you in any way.