



Health education number: PED-117

Set date: 2009.03.30

Revised date: 2022.06.02

Review date: 2023.10.03

## **Bone Marrow Aspiration and Biopsy**

### **I. Purpose :**

To take the sample of bone marrow tissue from the patient for cytology and histopathology examination to help further diagnosis and treatment. Before performing bone marrow aspiration and biopsy, the specialist will explain the related matters in detail. If you have any questions, please ask the examining physician and related personnel.

### **II. Indication and Contraindication :**

Indication: Leukemia, hematologic diseases (anemia, idiopathic thrombocytopenic purpura), to rule out metastasis, storage disease, bone marrow culture, etc.

Contraindication: haemophilia and coagulation disorders, thrombocytopenia, platelet  $<10000/\mu\text{L}$  °

To deliver intelligent and holistic medicine and to provide the best healthcare  
Compassion Quality Innovation Accountability

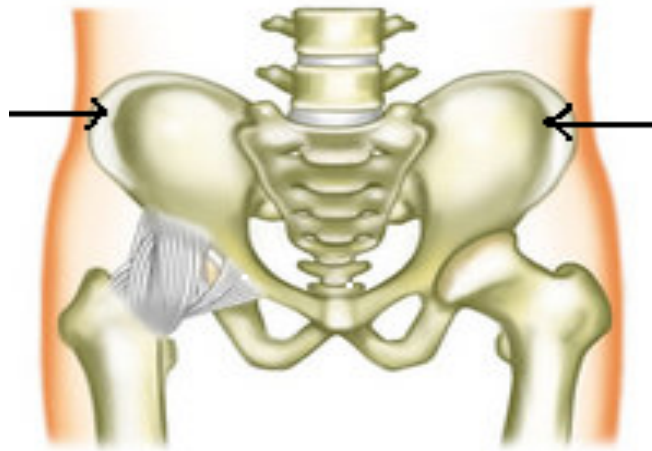
All information above has been reviewed by pediatric specialists  
Edited and published by the Department of Nursing,  
Taichung Veterans General Hospital

### III. Preparation before examination :

1. The patient needs to sign an informed consent. Permits of sedation is needed if necessary.
2. The patient must not eat or drink any food or water at least 6-8hours before the procedure, if under heavy sedation.
3. Sedation and local anesthesia are applied before aspiration and biopsy.

### IV. The procedure :

1. The doctor/operator will choose the area where the bone marrow sample will be obtained. The best area is usually around the anterior or posterior superior iliac crest.



2. The doctor will give analgesic and sedative through intravenous route. The area for aspiration will be sterilized. A local analgesic will be injected to the puncture site to make the patient painless.
3. The biopsy needle will be inserted through the skin and the cortex into the bone to reach the marrow cavity. A small piece of bone marrow tissue will be cut. Then, an empty syringe will be connected to the needle. The sample of aspiration will be obtained.

A small amount of the marrow specimen(0.5~5cc) will be drawn through the needle into the syringe. All of the tissue will then be taken for smear, cell markers, pathology or chromosomestudy.

4. The wound will then be covered with the gauze and the tapes to stop the bleeding after the procedure.

#### V.After the procedure :


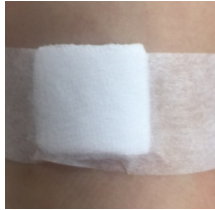
1. Lie down and take a rest for at least 2hours. Please don't get out of bed until bleeding stops.
2. Please call the nurse immediately if the patient has any of the following symptoms: bleeding out of the gauze, irregular heart beat, arms and legs feeling cold, blood pressure being down, cyanosis...etc.
3. When the patient is fully awake, drink water and wait for 15-30 minutes without vomiting or choking, then the patient can start eat.
4. It might take more than 7 days to get the formal pathology report, and 1 months for the chromosome test result.

5.The nurse will chang wound dressing after 24 hours, you need to change the wound every day until it scabs after discharged.

#### 6.Standard wound nursing step:



- 1.Dip cotton stick or cotton swab with iodine solution, rub the wound from the middle to the outside until it is clean.
- 2.The cleaning area should be extended 5cm around the wound.

|   |  |
|---|--|
|  | <p><u>2 mins later, use physiological saline to clean up the water soluble iodine in the same way.</u></p> |
|  | <p><u>Gauze covers the wound and secure it with tape.</u></p>  |

## VII. Conclusion :

After discharged, you need to change the wound every day until it scabs, and keep the wound clean and dry. You need to observe the wound whether redness, swelling, heat, pain or secretion when you change the wound. If the wound is abnormal, please return to the doctor.

## VIII. Reference :

- Dogan, A., & Demircioglu, S. (2022). Diagnostic importance of bone marrow aspiration evaluation: A single-center study. *Pakistan Journal of Medical Sciences*, 38(4Part-II), 811.  
<http://doi.org/10.12669/pjms.38.4.4797>.
- Joshi-Warpe, S., Wader, J., & Warpe, B. M. (2020). Bone marrow aspiration and bone marrow biopsy in hematological disorders. *Biomedical and Pharmacology Journal*, 13(2), 799-804.  
<http://doi.org/10.13005/bpj/1994>.

Let's take a test to confirm that you have a thorough understanding.

1. Indications for bone marrow aspiration: leukemia, blood disorders (such as anemia), and solid tumors invading the bone marrow.  
☐ YES   ☐ NO   ☐ Not sure
  
2. Contraindications for bone marrow aspiration: Severe hemophilia and platelet count below 10,000/ $\mu$ L.  
☐ YES   ☐ NO   ☐ Not sure
  
3. Apply pressure to the puncture site with a sandbag and lie down for at least 1 hour. Do not allow the child to get out of bed and move until bleeding has stopped.  
☐ YES   ☐ NO   ☐ Not sure
  
4. The choice of the puncture site for bone marrow aspiration: Anterior superior iliac spine.  
☐ YES   ☐ NO   ☐ Not sure
  
5. The bone marrow aspiration biopsy report takes approximately 7 days.  
☐ YES   ☐ NO   ☐ Not sure