Bone Marrow Aspiration

Dolly Bhaskaran

Bone marrow aspiration was introduced by Pianese in Naples in 1909. By 1933 Custer developed it into a routine technique. It is a simple and quick method of obtaining marrow specimen, and can be performed either in the ward or in an outpatient clinic in the hospital.

Definition Bone marrow aspiration involves the removal of a specimen of red bone marrow by aspiration using a stout needle with an adjustable quard such as the Salah needle.

Common Sites In adults the common sites are the sternum and the iliac crests. The tibia or the iliac crest are preferred for young children. Rarely the vertebral spines are used in case of obese patients.

Purpose It can be diagnostic or therapeutic.

Indications (a) It is a useful aid for diagnosing blood disorders such as pernicious anaemia, leukaemia, myeloma, metastatic carcinoma. (b) It is also performed to monitor and assess the effect of treatment.

Contra-indications It is contraindicated in those patients who are unable to cooperate or who have coagulation defect.

Complications (a) Haemorrhage: It can be prevented by applying adequate pressure on the puncture site for a few minutes, after the procedure (b) Infection: it can result from poor aseptic technique (c) Cardiac tamponade: It can occur following sternal puncture. The risk can be eliminated by correct positioning of the guard on the needle.

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Equipment needed for the procedure

- Antiseptic skin cleansing agent-Betadine solution.
- Sterile dressing pack.
- Selection of syringes and needles.
- Local anaesthetic-Lignocaine 2%.
- Salah needle.
- Slides and cover slips.
- Specimen bottles plain and with hepparin.
- Plastic dressing spray or colloidon dressing.
- Gloves.

Procedure

a) Before the procedure
- Explain the procedure to the patient
- Give medications if prescribed to alleviate the anxiety
- Correct position-supine, prone or on side.

b) During the procedure
- Observe the patient
- Assist the doctor
- Reassure the patient

c) After the procedure
- Apply pressure over the puncture site using a sterile cotton swab until the bleeding stops.
- Once the bleeding stops cover the site with plaster or dressing. Ask the patient not to bathe or wash the area for 24 hours.
- Make the patient comfortable.
- Dispose the articles used to prevent infection.
- Record the information in the cardex and ensure that the specimens are correctly labelled and sent to the pathology laboratory.

Nursing Care Plan

Problem: Pain at the puncture site
Goals: To be pain free
Nursing Action:
(i) Comfortable position.
(ii) Analgesia as prescribed by doctor.

Problem: Haemorrhage from puncture site.
Goals: To stop bleeding.
Nursing Action
(i) Ensure that pressure is applied on the site.
(ii) Report any excessive bleeding or heamotoma to the doctor.

REFERENCES

1 Abrahams P. and Webb P., Clinical Anatomy of Practical Procedures: Pitman Medical London, 1975.
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3 Pritchard P. & David J., Manual of Clinical Nursing Procedures: Harper & Row, London, 1990.

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