Interpretation of Fine Needle Aspiration
By
Pattern Recognition

Osama Abdelatif, MD.

Micro-architectural Patterns
- Monomorphic Epithelial patterns
- Dimorphic patterns (Two Cell Types)
- Single cell patterns
- Background
- Unique Cells
• Clues

• Monomorphic Epithelial Patterns:
  • Non-complex Tissue Fragments
  • Complex Tissue Fragments
  • Three Dimensional Cell Clusters
FNA Interpretation
By Pattern Recognition

- **Monomorphic Patterns:**
  - Non-complex Epithelial Tissue Fragments
    (monolayer sheets)
Osama Abdelatif, MD.

FNA Interpretation
By Pattern Recognition

- **Monomorphic Patterns:**
  - Complex Epithelial Tissue Fragments
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
Fine Needle Aspiration Interpretation By Pattern Recognition
FNA Interpretation
By Pattern Recognition

• Monomorphic Patterns:
  • Three Dimensional Cell Clusters
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By
Pattern Recognition
FNA Interpretation
By Pattern Recognition

- Dimorphic Patterns:
  Usually Epithelial Cells & Other Cell Type in the Background
Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

**FNA Interpretation By Pattern Recognition**

- Single cell Patterns:
  - Monomorphic
  - Polymorphic
Osama Abdelatif, MD.

FNA Interpretation
By Pattern Recognition

• Single Cell Pattern
  ↓
  Monomorphic
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
FNA Interpretation
By Pattern Recognition

• Single Cell Pattern

  Polymorphic
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
FNA Interpretation By Pattern Recognition

- Background
  Necrosis, background Substance or Pattern
Fine Needle Aspiration Interpretation By Pattern Recognition
FNA Interpretation
By Pattern Recognition

- Unique Cells
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
FNA Interpretation
By Pattern Recognition

• Monomorphic Patterns:

• Single Cell Pattern DD:
  • Carcinoma (Breast, Neuroendocrine & Small Cell)
  • Lymphoma & Reactive Lymph Nodes
  • Melanoma
  • Seminoma
  • Sarcoma
FNA Interpretation By Pattern Recognition

- Monomorphic Patterns:
- Non-complex & Complex Epithelial Tissue Fragments

Benign

Malignant Epithelial Tumors

FNA Interpretation By Pattern Recognition

- Monomorphic Patterns:
  - Three Dimensional Cell Clusters

Malignant & Atypical Epithelial Tumors
Fine Needle Aspiration Interpretation By Pattern Recognition

• Pattern Interpretation By Organ:
  – Breast
  – Thyroid
  – Lymph Node
  – Salivary Gland
  – Soft Tissue
Osama Abdelatif, MD.

Pattern Interpretation By Organ:

**Thyroid Gland**

- **Dimorphic** (Epithelium+Lymphocytes)
  - Hashimoto
  - Papillary Carcinoma

- **Monomorphic** (Monolayer Sheets)
  - Uniform Rounded Nuclei
  - Abnormal Elongated Nuclei
  - Nodular Goiter
  - Papillary Ca
  - Follicular Neoplasm

- **Complex**
  - Syncytium Prominent Nucleoli
  - Elongated Nuclei
  - Papillary Ca

**Single Cells**
- Neoplasia
- Lymphoid Hyperplasia
- Cyst Content

CASE 1

25 y/o female with breast mass
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

CASE 2
65 y/o female with breast mass
Osama Abdelatif, MD.

CASE 3
65 y/o female with breast mass

Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

CASE 4
65 y/o female with axillary mass

Fine Needle Aspiration Interpretation By
Pattern Recognition
Osama Abdelatif, MD.

CASE 5
65 y/o female with axillary mass
Osama Abdelatif, MD.

CASE 5
65 y/o female with iris mass
Osama Abdelatif, MD.

CASE 6
5 y/o male child with upper arm mass
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
CASE 7
25 y/o female with para-umblical mass
Fine Needle Aspiration Interpretation By Pattern Recognition
Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

CASE 8
65 y/o male with infra-scapular mass
Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

CASE 9
23 y/o male with right neck mass
Osama Abdelatif, MD.

CASE 10
75 y/o female with thumb mass
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

CASE 11
45 y/o female with breast mass

Fine Needle Aspiration Interpretation By
Pattern Recognition
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

CASE 12
45 y/o male with para-aortic lymphadenopathy
Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition
Osama Abdelatif, MD.

Fine Needle Aspiration Interpretation By Pattern Recognition