The Mycetoma Research Center,
University of Khartoum
WHO Collaborating Center
on Mycetoma & Skin NTDs

Standard Operating Procedures for Surgical Biopsy of Mycetoma Lesions

Number: 001/HISTO/MRC/2019
On April 3, 2019

Standard Operating Procedures for Surgical Biopsy of Mycetoma Lesions

Introduction

This Standard Operating Procedure (SOP) outlines the steps for conducting a surgical biopsy of mycetoma lesions. Mycetoma is a chronic granulomatous infection that requires histopathological examination for accurate diagnosis and treatment planning. A surgical biopsy is crucial for identifying the causative organism (fungus or bacteria) and determining the appropriate treatment course.

Purpose
To provide a consistent, safe, and effective method for performing surgical biopsies of mycetoma lesions.

Scope
This SOP applies to all healthcare professionals involved in the surgical biopsy of patients with suspected or confirmed mycetoma lesions.

Responsibilities
Surgeon
Performs the biopsy procedure.

Surgical Assistant/Nurse
Assists the surgeon during the procedure and prepares the patient.

Pathologist
Analyses the biopsy sample.

Infection Control Officer
Ensures adherence to infection control protocols.

Equipment and Materials

- Surgical biopsy kit (scalpel, forceps, scissors, biopsy needle, sutures)
- Sterile gloves, gown, mask, and eye protection
- Antiseptic solution (e.g., chlorhexidine or povidone-iodine)
- Sterile drapes
- Local anaesthetic (e.g., lidocaine) and syringes
- Specimen containers with appropriate fixative (e.g., formalin)
- Labels and requisition forms
- Sterile dressing materials
- Suturing materials

Procedure

Pre-Procedure Preparation

Patient Identification and Consent

- Verify patient identity using at least two identifiers (e.g., name and date of birth).
- Explain the procedure, including risks and benefits, to the patient and obtain an informed consent.

Patient Preparation

• Position the patient comfortably to allow easy access to the lesion.
• Expose the area to be biopsied and cover surrounding areas with sterile drapes.

Site Preparation

• Clean the skin over the biopsy site with an antiseptic solution.
• Allow the antiseptic to dry before proceeding.

Anesthesia

General or regional Anesthesia
• Administer general or regional anaesthesia using appropriate techniques

Biopsy Procedure

Incision

• Make an adequate incision over the lesion using a scalpel.
• Carefully dissect through the tissue layers to expose the lesion.

Tissue Sampling

- Obtain a representative sample of the lesion, including both central and peripheral areas.
- Ensure the sample is of adequate size for histopathological examination.

Hemostasis

- Control any bleeding using appropriate techniques (e.g., cautery, pressure).

Wound Closure

Suturing

- Close the incision using appropriate suturing techniques.
- Apply a sterile dressing over the biopsy site.

Post-Biopsy Handling

Specimen Handling

- Place the biopsy sample in a specimen container with a fixative.
- Place the biopsy sample in a specimen container with normal saline.
- Label the container with patient details, date, and site of the biopsy.

Documentation

- Complete the biopsy requisition form, including clinical history and suspected diagnosis.
- Send the specimen and requisition form to the histopathology laboratory.

Post-Procedure Care

Patient Instructions

- Provide the patient with post-procedure care instructions, including wound care and signs of infection to watch for.
- Schedule a follow-up appointment to review biopsy results and manage any complications.

Record Keeping

- Document the procedure in the patient's medical record, including details of the biopsy site, sample taken, and any complications.

Follow-Up

Biopsy Results

- Review the pathology report once available.
- Discuss the findings with the patient and plan further management based on the results.

Quality Control and Safety

- Ensure all surgical instruments are sterilised and in good working condition.
- Adhere to strict aseptic techniques to prevent infection.
- Regularly review and update this SOP to incorporate new evidence and best practices.

References

- Fahal AH, el Toum EA, el Hassan AM, Mahgoub ES, Gumaa SA. The host tissue reaction to Madurella mycetomatis: new classification. J Med Vet Mycol. 1995 Jan-Feb;33(1):157-. PMID: 7650573.

- Siddig EE, Mhmoud NA, Bakhiet SM, Abdallah OB, Mekki SO, El Dawi NI, Van de Sande W, Fahal AH. The Accuracy of Histopathological and Cytopathological Techniques in the Identification of the Mycetoma Causative Agents. PLoS Negl Trop Dis. 2019 Aug 29;13(8):e0007056. doi: 10.1371/journal.pntd.0007056. PMID: 31465459; PMCID: PMC6750607.

- Mycetoma Policies and Management Guidelines (https://mycetoma.edu.sd/?page_id=4362)

- Soba University Hospital SOPs for surgical procedures and infection control.

- Manufacturer's instructions for surgical instruments and materials.

Surgical biopsy from mycetoma lesion

Approval

This Standard Operating Procedure has been prepared, reviewed and approved by:

Dr Mubarak Ahmed Hassan	**Consultant Surgeon**	Mubarak Ahmed
Dr Buthyna Mamoun Ali Hassan	**Consultant Surgeon**	Buthyna Mamoun
Prof Suliman Hussein	**Senior Consultant Surgeon**	Suliman Hussein
Prof Ahmed Fahal	**Center Director**	*Fahal*

On April 3, 2019.

Number: 002/HISTO/MRC/2022
On April 3, 2022

Standard Operating Procedures for Surgical Biopsy of Mycetoma Lesions Using Tru-Cut Needle

Introduction

This Standard Operating Procedure (SOP) outlines the steps for performing a surgical biopsy of mycetoma lesions using a Tru-Cut needle. Mycetoma is a chronic granulomatous infection that requires histopathological examination for accurate diagnosis and treatment planning. A Tru-Cut needle biopsy is a minimally invasive method for obtaining tissue samples.

Purpose

To provide a consistent, safe, and effective method for performing Tru-Cut needle biopsies of mycetoma lesions.

Scope

This SOP applies to all healthcare professionals involved in the Tru-Cut needle biopsy of patients with suspected or confirmed mycetoma lesions.

Responsibilities

Surgeon/Interventional Radiologist
Performs the biopsy procedure.

Surgical Assistant/Nurse

Assists during the procedure and prepares the patient.

Pathologist

Analyses the biopsy sample.

Infection Control Officer

Ensures adherence to infection control protocols.

Equipment and Materials

- Tru-cut biopsy needle (different sizes, 4G, 16G, 18G - Length: 11.25Cm, 15Cm).
- Sterile gloves, gown, mask, and eye protection
- Antiseptic solution (e.g., chlorhexidine or povidone-iodine)
- Sterile drapes
- Local anaesthetic (e.g., lidocaine) and syringes
- Specimen containers with appropriate fixative (e.g., formalin)
- Labels and requisition forms
- Sterile dressing materials

Procedure

Pre-Procedure Preparation

Patient Identification and Consent

- Verify patient identity using at least two identifiers (e.g., name and date of birth).
- Explain the procedure, including risks and benefits, to the patient and obtain informed consent.

Patient Preparation

• Position the patient comfortably to allow easy access to the lesion.
• Expose the area to be biopsied and cover surrounding areas with sterile drapes.

Site Preparation

• Clean the skin over the biopsy site with an antiseptic solution.
• Allow the antiseptic to dry before proceeding.

Anaesthesia

Local Anesthesia

• Administer local anaesthesia to the biopsy site using a small-gauge needle.
• Wait for the anaesthetic to take effect before starting the procedure.

Biopsy Procedure

Initial Puncture

• Make a small incision at the biopsy site if needed to facilitate needle insertion.
• Insert the Tru-Cut needle through the skin and advance it towards the lesion.

Needle Positioning

• Use ultrasound guidance if available to ensure accurate needle placement within the lesion.

Tissue Sampling

• Activate the Tru-Cut needle to obtain a core sample of the lesion.
• Retrieve the needle carefully to avoid dislodging the sample.
• Ensure the samples are of adequate sizes and contain a good amount of grains.

Multiple Samples

• If necessary, repeat the procedure to obtain multiple samples from different areas of the lesion to ensure a representative biopsy.

Post-Biopsy Handling
Specimen Handling

• Place each biopsy sample in a specimen container with a fixative.
• Place each biopsy sample in a specimen container with normal saline.
• Label each container with patient details, date, and site of the biopsy.

Documentation

• Complete the biopsy requisition form, including clinical history and suspected diagnosis.
• Send the specimen and requisition form to the pathology laboratory.

Wound Care
Haemostasis

• Apply pressure to the biopsy site to control any bleeding.
• Clean the area with an antiseptic solution.

Dressing

• Cover the biopsy site with a sterile dressing.

Post-Procedure Care
Patient Instructions

• Provide the patient with post-procedure care instructions, including wound care and signs of infection to watch for.
• Schedule a follow-up appointment to review biopsy results and manage any complications.

Record Keeping

• Document the procedure in the patient's medical record, including details of the biopsy site, sample taken, and any complications.

Follow-Up

Biopsy Results

• Review the pathology report once available.
• Discuss the findings with the patient and plan further management based on the results.

Quality Control and Safety

• Ensure all biopsy instruments are sterilised and in good working condition.
• Adhere to strict aseptic techniques to prevent infection.
• Regularly review and update this SOP to incorporate new evidence and best practices.

References

examination for accurate diagnosis and treatment planning. A surgical biopsy is crucial for identifying the causative organism (fungus or bacteria) and determining the appropriate treatment course.

https://www.merit.com/product/tru-cut-biopsy-device/

True Cut Style Biopsy Needle 14G x 15 cm
https://jorvet.com/product/true-cut-style-biopsy-needle-14g-x-15-cm/

Mycetoma Policies and Management Guidelines (https://mycetoma.edu.sd/?page_id=4362)

Soba University Hospital SOPs for surgical procedures and infection control.

Manufacturer's instructions for surgical instruments and materials.

Mycetoma Tru-Cut needle biopsy vidoe: https://www.youtube.com/watch?v=WZjl^BAXlZA

Collection of the sample in a container with normal saline

Collection of the sample in a container with normal saline

Approval

This Standard Operating Procedure has been prepared, reviewed and approved by:

Dr Mubarak Ahmed Hassan	**Consultant Surgeon**	Mubarak Ahmed
Dr Buthyna Mamoun Ali Hassan	**Consultant Surgeon**	Buthyna Mamoun
Prof Suliman Hussein	**Senior Consultant Surgeon**	Suliman Hussein
Prof Ahmed Fahal	**Center Director**	*Fahal*

On April 3, 2022.

The Mycetoma Research Center,
University of Khartoum
WHO Collaborating Center
on Mycetoma & Skin NTDs

www.mycetoma.edu.sd