Mycetoma Research Centre
University of Khartoum
WHO Collaborating Center
on Mycetoma and Skin NTDs

Mycetoma Wound Management. The Strategy and Standard Operating Procedures

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Mycetoma Wound Management

The Strategy and Standard Operating Procedures

Background

The Mycetoma Research Centre has designed a comprehensive, implementation-ready wound management programme that covers clinical care, infection control, diagnostic linkage, referral, rehabilitation, documentation, training, and monitoring. It's designed to be adaptable to different country contexts and resource levels.

Part 1: Strategy Overview

Objective:

Provide standardised, effective wound management for mycetoma to reduce progression, promote healing, prevent complications, and improve functional outcomes; establish clear referral pathways and data capture for continuous improvement.

Scope:

Implemented by community health workers (CHWs), primary care clinicians, district hospitals, community rehabilitation teams, laboratories, pharmacies, and supply chains, as well as patients and caregivers.

Core principles:

- Early assessment and prospective triage to appropriate care.
- Wound care that minimises infection risk and promotes healing.
- Evidence-informed antimicrobial therapy guided by clinical assessment and available lab results
- Strong infection control, biosafety, and waste management.
- Patient-centred care, rehabilitation, and social supports to reduce disability and economic burden
- Documentation, data privacy, and quality improvement.

Part 2: Roles and Governance

- Clinical Lead: Medical officer or dermatologist with expertise in tropical ulcers/mycetoma.
- Wound Care Team: Clinicians, nurses, CHWs with wound care training; rehabilitation liaison.
- Laboratory Liaison: Microbiology/mycology lab staff; specimen transport coordinator.
- Pharmacy/Procurement Team: Ensure access to antimicrobials (antibiotics/antifungals), dressings, and antiseptics.
- Care Navigation: Trained CHWs or nurses to coordinate follow-ups and referrals.
- Data and QA: M&E officer; data clerks; QA lead to monitor adherence to SOPs.
- Governance: Establish a Mycetoma Wound Management Steering Group with representation from health facilities, district authorities, labs, and patient advocates. Meet monthly to review cases, KPIs, and supply status.

Part 3: Clinical SOPs (Core Workflows)

SOP A: Initial assessment, triage, and infection control

Purpose:

- Rapidly assess suspected mycetoma wounds to determine urgency and initiate appropriate containment measures.

Scope:

Clinicians, CHWs, PHC clinicians, Nurses.

Steps:

1. **Triage**
   - Identify suspected mycetoma: painless swelling, draining sinuses with grains, granulomatous lesions, or chronic non-healing wounds.
   - Screen for red flags: rapid progression, extensive tissue loss, spreading infection, systemic symptoms (fever, malaise), signs of sepsis.
2. **History and Examination**
   - Document symptom onset, lesion location, number of lesions, functional impairment, prior treatments, and comorbidities (diabetes, immunosuppression).

- Perform wound assessment: size, depth, tissue type (necrotic, granulation), surrounding skin, exudate, odour, presence of grains.

3. **Infection Control and Biosafety**
   - Use gloves, hand hygiene, and appropriate PPE.
   - Equipment decontamination protocol and safe disposal of contaminated dressings.
4. **Immediate Management**
   - Clean wound with saline/thorough irrigation; remove necrotic tissue if feasible (limited debridement only by trained personnel).
   - Apply a sterile dressing; provide basic wound care instructions.
   - Initiate pain management as per local analgesia guidelines.
5. **Diagnostics and Referrals**
   - Collect appropriate specimens for microscopy, culture, or molecular tests when available (see SOP C for treatment decisions).
   - Refer urgently to a higher-level facility if red flags or extensive tissue involvement are present.
6. **Documentation**
   - Record in wound care log: date, lesion characteristics, initial management, referral status.

Template: Initial Wound/Lesion Assessment Form (SOP A)

Patient ID
Date
Clinician
Location
Lesion location(s)
Size(s) and depth
Presence of sinuses or grains: Yes/No (describe)
Pain: None/Mild/Moderate/Severe
Exudate: Present/Absent; odor: Yes/No
Comorbidities
Allergies
Previous treatments
Red flags: Yes/No; details
Plan: wound care, analgesia, referral, specimens collected
Follow-up: date and location

SOP B: Wound Cleansing, Debridement, and Dressing Protocol

Purpose:

- Promote wound healing, reduce microbial burden, and maintain a clean wound bed.

Scope:

- Clinicians and trained nurses; CHWs for basic care under supervision.

Steps:

1. **Environment and Preparation**
   - Clean the area; assemble the necessary supplies (saline, antiseptic as per local policy, sterile dressings, non-adherent dressings, tape, and scissors).
2. **Wound Cleansing**
   - Irrigate with normal saline; avoid harsh antiseptics that can delay healing unless supported by guidelines.
3. **Debridement**
   - Perform only if trained; consider conservative sharp debridement for necrotic tissue in a controlled setting.
4. **Dressing Technique**
   - Apply a sterile, non-adherent layer, cover it with an appropriate dressing (semi-occlusive or absorptive), and secure it with minimal tension.
   - For wicks or drains, ensure secure management and monitor for blockages.

5. **Frequency**
    - Change dressings as per protocol (daily for highly exudative wounds or according to local guidelines) or as clinically indicated.
6. **Wound Care Education**
    - Instruct the patient/caregiver on home wound care, signs of infection, and when to return for follow-up.
7. **Documentation**
    - Record wound measurements, tissue type, exudate, dressing type, and changes.

Template: Wound Care Log

Patient ID
Date
Wound location
Size (cm)
Tissue type
Exudate
Dressing
Change reason
Clinician
Next due date

SOP C: Antimicrobial Therapy and Biochemical Management

Purpose:

Treat mycetoma according to etiologic type (actinomycetoma vs eumycetoma) and disease severity, guided by avail- able laboratory data.

Scope:

Clinicians prescribing antibiotics/antifungals; pharmacists.

Guiding principles:

- When the species is unknown, base empirical therapy on clinical suspicion and local guidelines; adjust when lab results are available.
- Antimicrobial stewardship: avoid unnecessary broad-spectrum use, monitor for adverse effects, and consider potential drug interactions.

Steps:

1. **Assessment for Antimicrobial Therapy**
   - Determine probable aetiology:
   - Actinomycetoma: bacteria (Nocardia, Actinomycetoma spp.)
   - Eumycetoma: fungi (Madurella spp., others)
   - Consider comorbidities and pregnancy status.

2. **Regimen Selection**
    - Actinomycetoma: standard regimens (e.g., combination antibiotics as per local guidelines); duration per guidelines.
    - Eumycetoma: antifungal therapy (e.g., azoles or other antifungals per local guidelines); duration long-term.
3. **Dosing and Monitoring**
    - Start with recommended dosing; monitor for side effects and liver/kidney function when indicated.
    - Schedule follow-up to assess response (clinical improvement, wound healing, adverse events).
4. **Laboratory Support**
    - Correlate with culture/molecular results when available; adjust therapy accordingly.
5. **Adherence Support**
    - Provide patient education on dosing, potential interactions, and the importance of adhering to the full course of therapy.

6. Documentation

- Record regimen, start date, planned duration, adverse events, and response.

Template: Antimicrobial Therapy Ledger

Patient ID
Aetiology suspected/confirmed
Drug(s) prescribed
Dose and frequency
Route
Start date
Planned duration
Monitoring plan (LFTs, renal, etc.)
Adverse events
Response
Completion date:

SOP D: Wound Complications Management and Escalation

Purpose:

Identify and manage complications (secondary infection, osteomyelitis, sepsis) promptly.

Steps:

1. **Recognition**
    - Signs of infection: increasing redness, swelling, warmth, purulent discharge, fever
    - Signs of systemic illness: fever, tachycardia, hypotension.
2. **Interim management**
    - Improve wound cleansing; adjust dressings; escalate analgesia.
3. **Escalation**
    - Immediate referral to higher-level care; imaging and advanced labs as indicated.
4. **Documentation**
    - Record complications, time to escalation, and actions taken.

SOP E: Rehabilitation and functional restoration

Purpose:

- Prevent disability and support return to work.

Steps:

1. **Early Rehab Planning**
   - Assess functional impact; refer to physiotherapy/occupational therapy as appropriate
2. **Offloading and Prosthetics**
   - Provide assistive devices if needed (wound-friendly footwear, orthoses)
3. **Return-to-Work Planning**
   - Develop a graded activity plan; coordinate with employers or microfinance groups if applicable
4. **Follow-Up**
   - Schedule rehab follow-ups; monitor progress and adapt plan
5. **Documentation**
   - Rehab plan, progress notes, and return-to-work milestone.

SOP F: Infection Prevention, Biosafety, and Waste Management

Purpose:

- Minimise infection risk for patients and health workers; ensure safe waste handling.

Steps:

- Hand hygiene compliance; PPE use.
- Instrument and equipment decontamination.
- Safe handling and disposal of contaminated dressings and materials.
- Environmental cleaning.
- Waste segregation and sharps management.
- Training and supervision.

Strategy and SOPs for Wound Care

The wound care aims to optimise the wound bed, control infection, relieve pain, and prevent secondary complications.

1. **Strategic overview: Goals and Principles**

Goals

- Eradicate or control the infectious focus with appropriate antimicrobial therapy (antifungals for eumycetoma; antibiotics for actinomycetoma) guided by culture and susceptibility.
- Achieve a clean, well-vascularised wound bed with stable margins to permit healing or surgical planning if needed.
- Minimise pain, prevent secondary infection, and limit functional impairment (ankle, foot, hand, or other sites).
- Reduce the risk of sinus formation and bone involvement where possible.
- Provide patient-centered care, considering comorbidities (diabetes, immunosuppression), nutrition, and psychosocial factors.

Core principles

- Debridement when indicated by a trained clinician, followed by appropriate local wound care.
- Moist wound healing with dressings tailored to exudate level and tissue status.

- Atraumatic, regular dressing changes with aseptic technique.
- Regular monitoring and culture-directed therapy adjustments.
- Infection control and prevention of cross-contamination, especially in resource-limited settings.

2. **Diagnostic and Therapeutic Framework**

Initial Assessment

- Full history: duration, prior treatments, comorbidities, allergy history, trauma, exposure.
- Physical exam: lesion size/volume, depth, presence of sinus tracts, necrosis, granulation, exudate type, foul odour.
- Imaging as needed: ultrasound, X-ray (for bone involvement), MRI/CT if deep extensions suspected.
- Microbiology: bacterial culture with sensitivity and fungal cultures (and ideally PCR if available).
- Laboratory: CBC, CRP/ESR, renal/hepatic function tests if systemic therapy planned; nutritional status (albumin/prealbumin).

Therapeutic Core Components

- Systemic therapy tailored to the organism:
  - Actinomycetoma: appropriate antibiotics (e.g., trimethoprim-sulfamethoxazole, amikacin, doxycycline, etc., per local guidelines and susceptibilities).

- Eumycetoma: antifungal therapy (e.g., itraconazole, posaconazole, voriconazole) with duration per expert guidelines and response.

- Surgical input:
  - Debridement for necrotic tissue, fistulous tracts, or persistent infection when indicated.
  - Consider wide excision or partial/near-total resection in selected cases with reconstruction planning.
- Wound care optimisation:
  - Choose dressings that support a moist wound environment, manage exudate, and minimise microbial burden.
- Supportive care:
- Pain management, nutrition optimisation, glycemic control, and physical therapy to preserve function.

3. **Dressing strategy by wound status**

Exudate management

- Low exudate: hydrogel, hydrocolloid (non-absorbent, non-adhesive edges if fragile skin).
- Moderate to high exudate: alginate, hydrofiber, foams; consider contour-fitting dressings to manage seepage.

Tissue status

- Necrotic tissue: selective debridement (surgical or enzymatic), followed by appropriate dressings.
- Slough: debridement and continued cleansing.
- Granulation/epithelialisation: maintain moisture and protect newly formed tissue.

4. **Infection control**

- Colonisation is common; true infection requires clinical signs (increasing pain, fever, spreading erythema, systemic symptoms) and/or positive culture with purulent exudate.
- Consider antimicrobial dressings or topical antiseptics only if indicated and guided by pathogen data and local policy.

5. **Pain and comfort**

- Use non-adherent contact layers and soft dressings; provide analgesia as needed; plan dressing changes to minimise discomfort.

6. **Special considerations for mycetoma sites**

- Lower limbs: weight-bearing considerations; offloading as appropriate after debridement.
- Hands/feet near tendons/bones: protect structures; maintain mobility with early physical therapy when feasible.

Standard Operating Procedure (SOP)

Wound Dressing for Mycetoma

Purpose

- To provide a standardised approach to wound dressing in patients with suspected or confirmed mycetoma to optimise wound bed healing, manage infection, relieve pain, and prevent complications.

Scope

- Applies to all clinical settings where wound care for mycetoma is provided (outpatient clinics, wards, surgical units, community settings with trained staff.

Responsibilities

- Wound care team: nurses, wound care specialists, or trained clinicians; consult infectious disease or surgical teams as needed.
- Physicians determine antimicrobial therapy, assess the need for debridement, and monitor the response.
- Microbiological team: provides culture data and susceptibilities.
- Rehabilitation team: assists with mobility and function.

Materials (example list; adapt to local formulary)

- Standard aseptic supplies include sterile gloves, sterile drapes, sterile saline, antiseptic solution as per policy (e.g., chlorhexidine 2% or povidone-iodine 10% as per facility policy), gauze, and non-adherent dressings.
- Dressings by category (adjust to exudate and tissue status):
    - Low exudate: hydrogel dressings, non-adherent petrolatum-impregnated gauze.
    - Moderate exudate: hydrocolloid ulcers, hydrogels with absorbent cores.
    - High exudate: alginate dressings, foam dressings.
    - Antimicrobial options (as per policy and sensitivity): silver-containing dressings, iodine-impregnated dressings (used cautiously in patients with iodine sensitivity or thyroid disease), if available and appropriate.
- Absorbent materials include rolled gauze and non-occlusive secondary dressings.
- Adhesives: hypoallergenic tapes, skin barrier films for sensitive skin.
- Cleansing tools: sterile saline solution and a gentle suction device, if available.
- Occlusion and protection: moisture barrier cream for skin around wounds (avoid around open sinuses if the moisture barrier impedes assessment).
- Pain management: topical anaesthetics for dressing changes if indicated and safe.
- Personal protective equipment (PPE): gloves (sterile or non-sterile, as per procedure), masks, and eye protection as per infection control guidelines.
- Documentation tools: wound assessment form, dressing change log, culture results log.

Procedure steps

1. **Pre-Procedure**
    - Verify the patient's identity and the indication for the dressing.
    - Review current antimicrobial therapy and recent culture results.
    - Assess wound: size, depth, exudate level, tissue type (necrotic, slough, granulation), presence of sinus tracts, pain level, odour, and surrounding skin condition.
    - Check intolerance or allergies to dressings or antiseptics.
    - Explain the procedure to the patient and obtain consent if required.
2. **Preparation and Asepsis**
    - Perform hand hygiene.
    - Don appropriate PPE.
    - Lay out supplies on a clean field.
    - If there's necrotic tissue or sinus tracts, plan for debridement in coordination with the surgical team (if in-indicated and feasible)

3. **Cleaning and Initial Assessment**
    - Gently cleanse the wound with sterile saline; avoid aggressive scrubbing.
    - Inspect for changes since the last dressing (exudate: amount/type; tissue: necrosis/granulation; presence of new sinus tracts).
4. **Debridement (when indicated)**
    - If trained to perform debridement and it is clinically indicated, remove necrotic tissue conservatively.
    - If surgical debridement is required, arrange promptly with the surgical team.
5. **Dressing Selection and Application**
    - Choose dressing type based on current wound assessment:

- Low exudate: Apply a hydrogel or non-adherent layer, then cover with a non-occlusive secondary dressing.
- Moderate exudate: use alginate or hydrofiber with a secondary non-adherent layer.
- High exudate: select foam or alginate with secure secondary dressing.
    - Place a non-adherent layer directly on the wound bed if necrotic tissue is present or if the wound is delicate.
    - Secure with an appropriate adhesive, ensuring no tight constriction on limbs.
    - If there are sinus tracts, avoid occluding the tract entry; document and plan specialised care or consider targeted drainage if indicated.

- If an antimicrobial dressing is indicated based on culture data or local policy, apply it according to the product instructions.

6. **Documentation**
   - Record wound measurements (length, width, depth if feasible), exudate level, tissue type, odour, pain score, and any signs of infection.
   - Note dressing type, products used, and the date/time of change.
   - Record patient tolerance and any adverse reactions.
7. **Post-Procedure Care and Education**
   - Provide wound care instructions to patient/caregiver (home dressing changes, signs of infection, when to seek care).
   - Schedule the next dressing change interval and follow-up assessment.
   - Review antimicrobial therapy duration, safety monitoring, and potential side effects.
8. **Follow-Up and Monitoring**
   - Reassess at planned intervals (every 48–72 hours in active infections or exudates; longer intervals for stable wounds, depending on policy).
   - Repeat cultures if signs of worsening or non-response.

- Reassess need for imaging (if bone involvement suspected) and surgical reconsideration.

9. **Safety and Infection Control**
   - Use aseptic technique for each dressing change.
   - Properly dispose of used dressings and materials in accordance with the hospital's waste policy.
   - Monitor for adverse reactions to dressings and antiseptics.
   - Ensure infection control measures to prevent cross-contamination, particularly in communal settings.
10. **Quality Assurance and Improvement**
   - Track wound healing progress (size reduction, granulation coverage) and time to closure.
   - Audit dressing change intervals, antibiotic/antifungal therapy alignment with culture data, and adverse events.
   - Update protocol in response to new guidelines, local resistance data, and patient outcomes.
11. **Special Considerations and Tips**
   - Antibiotics/antifungals: Always follow culture results and local guidelines. Monitor for drug interactions, organ toxicity (liver/kidney), and adherence.
   - Bone involvement: If imaging reveals involvement, coordinate with the clinician to determine the need for prolonged systemic therapy and potential surgical management.

- Diabetes and ulcers: Optimise glycemic control, nutrition, and reduce infection risk.
- Resource-limited settings: Use readily available dressings effectively; prioritise moist wound healing principles; consider affordable antimicrobial dressings if indicated and safe.
- Patient safety: Screen for iodine or silver allergies; monitor thyroid function if iodine-containing products are used long-term; avoid cytotoxic antiseptics if healing is compromised.

12. **Documentation templates (adapt to your charting system)**

Wound Assessment Template
Date/time:
Location and size (cm in length x width; depth if measurable):
Wound bed appearance (necrotic/slough/granulation):
Exudate level (none/minimal/moderate/copious) and type:
Odor:
Pain score (0–10):
Surrounding skin condition:
Sinus tracts (presence/number/tract status):
Current antimicrobial therapy (systemic/topical):
Dressing applied:
Dressing changes planned/frequency:
Next review date:

Clinical notes:

Date/time:

Wound size and observations:

Dressing materials used:

Any complications:

Follow-up plan:

Date of culture:

Specimen type:

Pathogen results:

Therapy adjustment notes:

13. **Training and Competency**

- Ensure staff are trained in wound assessment, debridement basics, dressing selection, aseptic technique, and infection control.
- Provide ongoing education about mycetoma-specific management and updates to guidelines.
- Conduct periodic competency checks and simulations for dressing changes and emergency scenarios.

14. **Important Cautions**

- Do not rely solely on visible colonisation; treat clinically and with culture data.
- Avoid cytotoxic antiseptics when tissue regeneration is crucial; prefer saline and mild antiseptics as per policy.
- Always check for patient allergies to dressings and antiseptics.
- Coordinate with infectious disease and surgical teams early for complex cases or suspected osteomyelitis.

15. **Adaptation Examples**

- Resource-limited setting: Use readily available dressings (gauze, simple foam) with moist wound healing principles. Rotate products based on exudate management and cost considerations, and ensure access to antibiotics/antifungals in accordance with local guidelines.
- Bone involvement: Intensify monitoring, consider negative-pressure wound therapy if available and appropriate, and plan for surgical consultation as needed.

Part 4: Training, Supervision, and Capacity Building

- **Training Needs:**
  - Wound assessment and documentation.
  - Basic wound care techniques and dressing selection.
  - Principles of antimicrobial therapy in mycetoma.
  - Infection control and biosafety.
  - Rehabilitation referral pathways.
  - Patient education and adherence support.
- **Training Cascade:**
  - Train-the-trainer model: master trainer → facility trainers → CHWs.
- **Supervision**:
  - Routine clinical supervision visits, quarterly refresher trainings, and audits of wound care quality.

Part 5: Documentation, Data Management, and QA

- **Core Data Elements:**
  - Patient demographics, lesion details, lab results (if available), treatment regimens, adverse events, wound healing status, rehabilitation referrals.
- **Data Privacy:**
  - Access controls, encrypted storage, and de-identification for reporting.
- **QA Activities:**
  - Monthly chart reviews, dressing and medication audits, antibiotic/antifungal stewardship checks, wound healing time tracking

Part 6: Monitoring, Evaluation, and Indicators

- **Process Indicators:**
  - Proportion of wounds assessed within 48 hours of presentation.
  - Proportion of patients with documented wound measurements.
  - Dressing change adherence (within prescribed schedule).
- **Outcome Indicators:**
  - Time to wound healing; rate of complete healing.
  - Reduction in wound size over 4, 8, 12 weeks.
  - Rate of infection complications or osteomyelitis.
- **Access Indicators:**
  - Time from symptom onset to first clinical evaluation
  - Proportion of patients referred to rehab services
- **Safety Indicators:**
  - Adverse drug reactions; treatment interruptions.
- **Data Sources:**
  - Wound care logs, antimicrobial ledger, rehab referrals, lab results, follow-up notes.

Part 7: Templates and Ready-to-Use Forms

Template T-WA1: Wound Assessment and Triage Form

- Patient ID:
- Date:
- Lesion location and size:
- Depth and tissue type:
- Exudate and odour:
- Grading of severity:
- Red flags: Yes/No; details
- Assessment: suspected aetiology
- Plan: cleansing, dressing, meds, referral
- Follow-up date:

Template T-WA2: Wound Dressing Log

- Patient ID:
- Date:
- Dressing type:
- Wound size:
- Cleaning agent:
- Dressing change notes:
- Clinician:
- Next appointment:

Template T-WA3: Antimicrobial Therapy Record

- Patient ID:
- Regimen:
- Dose:
- Route:
- Start date:

- Planned duration:
- Monitoring plan:
- Adverse events:
- Outcome:

Template T-WA4: Referral and Escalation Log

- Patient ID:
- Date of referral:
- Referred to:
- Reason for referral:
- Referral method:
- Date of evaluation:
- Outcome:
- Follow-up plan:

Template T-WA5: Wound Care Training Checklist (for supervision)

- Topics covered:
- Trainer:
- Trainee names:
- Date:
- Competency demonstrated: Yes/No
- Notes

Template T-WA6: Infection Control Audit Checklist

- Hand hygiene adherence
- PPE usage
- Equipment cleaning
- Waste management
- Environmental cleaning
- Date
- Auditor

Template T-WA7: Rehabilitation Referral Form

- Patient ID:
- Rehab services prescribed:
- Referring clinician:
- Facility:
- Start date:
- Follow-up:

Template T-WA8: Consent for Treatment and Data Sharing

- Patient/caregiver consent
- Purpose of data collection
- Data sharing scope
- Rights and withdrawal information

Part 8: Implementation Plan and Milestones (12–18 months)

	Develop a training plan and materials
Months 4–6	Implement wound management SOP in pilot facilities
Pilot and refine	Begin antimicrobial therapy protocols and wound care routines
	Initiate rehabilitation referrals and basic transport/access supports
Months 7–9	Expand to more facilities; standardise documentation; strengthen referral networks
Scale-up and integration	Begin regular QA audits; adjust stock management and supply
Months 10–12	Integrate wound management into district health plans Implement patient education and adherence programmes Initiate patient support and rehabilitation networks
Consolidation	
Months 13–18	Scale to additional districts if feasible
Optimisation and Ssustainability	Expand workforce capacity via training of CHWs and mid-level providers

Part 9: Example Metrics and Data Sources

- Wound healing rate at 8 weeks
- Time to initiation of antimicrobial therapy after diagnosis
- Adherence rate to prescribed therapy
- Incidence of secondary infection or osteomyelitis
- Rehospitalisation or re-referral rate
- Patient-reported pain and functional status
- Stock-out frequency for dressings and medications
- Training completion rates and competency scores

Notes on Customisation

- Localise policies, medicines, and dosing to national or regional guidelines.
- Adapt PPE, dressings, and wound care products to availability and cost.
- Align with existing TB/leprosy or skin disease programmes, if possible, to leverage existing platforms.
- Ensure cultural and language appropriateness in all educational materials.

Appendex

Mycetoma management is a multidisciplinary approach that involves infectious disease, surgery/plastic surgery, radiology, pathology, microbiology, and wound care.

The management of mycetoma emphasises early diagnosis, multidisciplinary care, and integrated medical, surgical, and wound-care approaches. The management should be adapted to local resources, mycetoma type and patient factors.

- Core goals.
- Eradicate infection (pathogen clearance).
- Control and heal the wound with robust wound care.
- Preserve limb function and prevent deformity.
- Prevent recurrence and complications (bone involvement, secondary infection, CF/disability).
- Minimise treatment burden and adverse effects; optimise adherence.

- **Postoperative Wound Care**
  - Apply early wound dressing with moisture-retentive dressings and monitor for hematoma, seroma, and serous discharge.
  - Consider negative pressure wound therapy (NPWT) in select situations to promote drainage and granulation, ensuring there are no contraindications (e.g., active infection) and assessing for cost feasibility.
  - Regular wound assessment and dressing changes based on exudate and infection risk.

- **Follow-Up and Monitoring**
    - Serial imaging to assess bone healing and residual disease.
    - Re-evaluate for possible additional debridement if disease persists.
    - Coordinate the timing of surgical interventions with the phases of medical therapy.

Wound-Care Strategy for the Wound Bed

Principles

- Keep the wound clean, moist, and protected; prevent secondary infection.
- Manage exudate with appropriate dressings (hydrocolloid, hydrogel, foam, alginate, or composite dressings depending on exudate level).
- Debridement of nonviable tissue: sharp debridement by trained personnel when indicated.
- Avoid toxic or drying agents, and minimise mechanical trauma during dressing changes.

Dressing Options by Wound Status

- Granulating wounds with moderate exudate: hydrocolloid, polyurethane foam, or hydrogel with moisture balance.
- Highly exudative wounds: alginate or foam dressings; consider NPWT if appropriate and available.
- Dry wounds: hydrogel-based dressings to maintain moisture.
- Sinus tracts: consider negative pressure therapy with caution; ensure tract communication and monitor risk of creating sinusiform pathways.

Offloading and Protection

- Offload weight-bearing on the affected limb if feasible; immobilisation or splinting to reduce tissue stress while healing.
- Protect skin around lesions to prevent secondary injury.

Nutrition and Adjuncts

- Ensure adequate protein and calories, and correct micronutrient deficiencies (such as zinc and iron) as needed.
- Evaluate for and treat diabetes or other metabolic disorders; optimise overall health to support wound healing.

Monitoring, Follow-Up, and Outcomes

- **Clinic Visit Schedule**
  - Frequent early follow-ups (2–4 weeks) to monitor wound progression, medication tolerance, side effects, and adherence.
  - Imaging follow-ups (US/MRI) are performed every 3–6 months or as indicated to track disease progression, particularly bone involvement.

Rehabilitation

- Early physical therapy is used to maintain the range of motion and prevent contractures.
- Occupational therapy to maximise hand/foot function and facilitate daily activities.

Clear Milestones

- Clinical: reduction in lesion size, decreased drainage, fewer sinus tracts, improved function.
- Imaging: decrease in soft-tissue extension and stabilisation or improvement of bone involvement.
- Microbiology/histology: culture negativity or histopathologic improvement (as available) during the course.

Endpoints

- Clinical resolution or significant stabilisation with functional recovery.
- Completion of antimicrobial/antifungal therapy per guidelines or MDT decision.
- Absence of major adverse events; patient tolerates therapy.