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Title: Skin Biopsy for Diagnosing Discoid Lupus Erythematosus

Authors and Affiliations:
Xiaoyuan Hou[1], Dandan Chen[1], Fei Wu[2], Jia Chen[1]

[1]Department of Rheumatology, Shanghai Skin Disease Hospital, Tongji University School of Medicine
[2] Department of Dermatopathology, Shanghai Skin Disease Hospital, Tongji University School of Medicine

Corresponding Authors:
Jia Chen chenjia_doc@163.com

Email Addresses for All Authors:
Xiaoyuan Hou houxiaoyuan_njmu@163.com
Dandan Chen cheng_hjx@163.com
Fei Wu wufei_2000@163.com
Jia Chen chenjia_doc@163.com

Author Questionnaire

1. We have marked your project as author-provided footage, meaning you film the video yourself and provide JoVE with the footage to edit. JoVE will not send the videographer. Please confirm that this is correct.

√ Correct

2. Microscopy: Does your protocol require the use of a dissecting or stereomicroscope for performing a complex dissection, microinjection technique, or something similar? **No**

3. Software: Does the part of your protocol being filmed include step-by-step descriptions of software usage? **No**

4. Proposed filming date: To help JoVE process and publish your video in a timely manner, please indicate the proposed date that your group will film here: **09/06/2025**

When you are ready to submit your video files, please contact our China Location Producer, Yuan Yue.

Current Protocol Length

Number of Steps: 17
Number of Shots: 33

Introduction

1.1. **Xiaoyuan Hou:** Our research focuses on skin lesions in rheumatic diseases, highlighting the essential role of dermatopathology in achieving accurate diagnosis.

1.1.1. INTERVIEW: Named talent says the statement above in an interview-style shot, looking slightly off-camera. *Suggested B-roll: 2.3.1*

What technologies are currently used to advance research in your field?

1.2. **Dandan Chen:** Analyzing gene expression studies for skin biopsies, uncovering phenotype-related genes and disease stratification are used to design treatments for rheumatic diseases.

1.2.1. INTERVIEW: Named talent says the statement above in an interview-style shot, looking slightly off-camera. *Suggested B-roll: 2.5.1*

What are the current experimental challenges?

1.3. **Dandan Chen:** Challenges include diagnostic subjectivity, vague pathology terms, and the potential for false-negative results in reports.

1.3.1. INTERVIEW: Named talent says the statement above in an interview-style shot, looking slightly off-camera. *Suggested B-roll: 4.1.1*

Ethics Title Card

This research has been approved by the Ethics Committee at the Shanghai Dermatology Hospital, and written informed consent was obtained from the participants

Protocol

2. Preparation Prior to Biopsy

Demonstrators: Xiaoyuan Hou, Dandan Chen

2.1. To begin, arrange the instruments and any required medications within easy reach to improve procedural efficiency **[1]**.

2.1.1. WIDE: Talent organizing instruments on a sterile table for easy access.

2.2. Next, prepare the antiseptic solution, such as alcohol, iodophor, or chlorhexidine **[1]**. Gather local anesthetic such as lidocaine, along with sterile injection syringe, sterile needles, sterile sutures, sterile gloves, sterile gauze, and dressing materials **[2]**.

2.2.1. Talent pouring antiseptic solution into a sterile container.

2.2.2. Talent arranging local anesthetic, injection syringe, needles, sutures, gloves, gauze, and dressing materials on a sterile tray.

2.3. Now, carefully select the biopsy site, prioritizing a non-treated, non-traumatized, and fully developed lesion with clear diagnostic features **[1]**. Confirm that the planned biopsy captures the full thickness of the lesion, including the epidermis, dermis, and part of the adjacent normal tissue **[2]**.

2.3.1. Talent examining patient's lesions and pointing to a selected one.

2.3.2. Talent palpating and evaluating the thickness and position of the lesion.

2.4. Using a surgical skin marker, mark the excision path on the selected biopsy site for precision **[1]** and shave any hair around the site to clear the surgical area **[2]**.

2.4.1. Talent drawing the excision path on the skin with a surgical marker.

2.4.2. Talent using electric clippers or a razor to shave hair around the marked area.

2.5. Then, take high-resolution photographs of the lesion and the marked biopsy site for documentation and future clinical reference **[1]**.

2.5.1. Talent using a digital camera to capture clear images of the lesion and surrounding area.

2.6. Now, properly position the patient, ensuring that the selected biopsy site is fully exposed and aligned parallel to the floor **[1]**.

2.6.1. Talent adjusting the patient's position and checking the alignment of the biopsy site.

3. Skin Biopsy Procedure

3.1. Thoroughly disinfect the biopsy area using an appropriate antiseptic solution **[1-TXT]**. Allow the antiseptic to dry completely before proceeding **[2]**.

3.1.1. Talent applying antiseptic solution to the biopsy site. **TXT: Cleanse in a circular motion**

3.1.2. Shot of the biopsy site dried.

3.2. After disinfection, apply a sterile surgical drape to isolate the surgical field **[1]**.

3.2.1. Talent placing and adjusting a sterile drape over the disinfected area.

3.3. Use a 1 to 2 percent lidocaine solution for local anesthesia **[1]**. Inject the solution subcutaneously at the biopsy site with a fine needle according to institutionally approved protocols **[2].** Wait for 2 to 3 minutes and gently palpate the site to confirm the absence of pain **[3]**.

3.3.1. Talent drawing lidocaine into a syringe.

3.3.2. Talent injecting lidocaine into the biopsy site.

3.3.3. Talent lightly pressing the injection site to check for numbness.

3.4. Then, using a sterile scalpel, make a vertical, shuttle-shaped incision that extends to the deep dermis or subcutaneous fat **[1]**. Use biopsy forceps to stabilize or gently lift the tissue **[2]** and excise a representative section of the lesion with a margin of normal tissue, aiming for a sample size of 3 to 5 millimeters **[3]**.

3.4.1. Talent making an incision on the lesion using a scalpel.

3.4.2. Talent lifting the tissue with biopsy forceps.

3.4.3. Talent cutting out a section of tissue from the lesion.

3.5. Apply steady pressure with sterile gauze for 2 to 3 minutes or until the bleeding stops completely **[1]**. If needed, use absorbable sutures or electrocautery to manage larger vessels **[2]**.

3.5.1. Talent pressing gauze on the wound to control bleeding.

3.5.2. Talent using absorbable sutures or applying electrocautery on a bleeding vessel.

3.6. Next, suture the excision site to promote healing and reduce infection risk **[1-TXT]**. Insert the needle vertically, keeping the distance between the entry point and wound edge equal to the wound depth **[2-TXT]**.

3.6.1. Talent stitching the wound with appropriate suture material. **TXT: Facial or neck wounds: 6-0 monofilament non-absorbable sutures**

3.6.2. Close-up of needle insertion technique showing the vertical angle and proper spacing. **TXT: Trunk or limb wounds: 5-0 non-absorbable sutures**

3.7. Then, place a sterile dressing over the sutured biopsy site **[1]** and secure it with adhesive tape **[2]**.

3.7.1. Talent covering the wound with dressing.

3.7.2. Talent taping the dressing in place.

3.8. Advise the patient to keep the wound dry for 24 to 48 hours and provide detailed post-procedure care instructions **[1]**.

3.8.1. Talent explaining aftercare steps to the patient.

4. Handling Specimen Post-Biopsy

4.1. Using a sterile scalpel or scissors, divide the excised tissue into two equal portions **[1]**. Clearly label each container with the patient's identification details and the specific biopsy site **[2]**. Complete the pathology request form thoroughly **[3]**.

4.1.1. Talent cutting the tissue sample into two halves using a sterile scalpel.

4.1.2. Talent labeling specimen containers with patient ID and biopsy site.

4.1.3. Talent filling out the pathology request form with relevant clinical details.

4.2. Place one half of the tissue into a container filled with 10 percent formalin solution **[1]** and send this container to the pathology laboratory for hematoxylin and eosin staining **[2]**.

4.2.1. Talent placing one tissue portion into a vial of formalin.

4.2.2. Talent sealing the vial and placing it in a transport container marked for HE staining.

4.3. Finally, transport the other tissue half on gauze soaked in ice-cold physiological saline for immediate analysis **[1-TXT]** and prepare the sample for direct immunofluorescence analysis **[2]**.

4.3.1. Talent placing the second tissue half on saline-soaked gauze. **TXT: Store the sample in Michel's medium for delayed analysis**

4.3.2. Talent labeling and packaging the sample.

Results

5. Results

5.1. Histopathological examination of one of the skin biopsy samples indicated hyperkeratosis and follicular plugging **[1].**

5.1.1. LAB MEDIA: Figure 2 *Video editor: Please check the image "guide for highlighting" on the project page to identify regions for highlighting in Figure 2. Please highlight the region labeled "hyperkeratosis and follicular plugging"*

5.2. There was flattening of the epidermal ridges, focal epidermal thinning, thickening of the epidermal basement membrane **[1]**, and a superficial and deep perivascular and periadnexal lymphocytic infiltrate **[2]**.

5.2.1. LAB MEDIA: Figure 2 *Video editor: Please check the image "guide for highlighting" on the project page to identify regions for highlighting in Figure 2. Please highlight the region labeled "epidermal ridges, focal epidermal thinning, thickening of the epidermal basement membrane"*

5.2.2. LAB MEDIA: Figure 2 *Video editor: Please check the image "guide for highlighting" on the project page to identify regions for highlighting in Figure 2. Please highlight the region labeled "superficial and deep perivascular and periadnexal lymphocytic infiltrate"*

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1. Iodophor

Pronunciation link: (merriam-webster.com)
IPA: /ˈaɪəˌdoʊˌfɔr/
Phonetic Spelling: eye-uh-doh-for

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2. Chlorhexidine

Pronunciation link: (merriam-webster.com)
IPA: /klɔːrˈhɛksəˌdiːn/
Phonetic Spelling: klor-hek-suh-deen

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3. Lidocaine

Pronunciation link: (merriam-webster.com)
IPA: /ˈlaɪdəˌkeɪn/
Phonetic Spelling: lie-duh-kane

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4. Epidermis

Pronunciation link: (merriam-webster.com)
IPA: /ˌɛpɪˈdɜːrmɪs/
Phonetic Spelling: ep-ih-dur-mis

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5. Dermis

Pronunciation link: (merriam-webster.com)
IPA: /ˈdɜːrmɪs/
Phonetic Spelling: dur-mis

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6. Peristalsis

Pronunciation link: (merriam-webster.com)
IPA: /ˌpɛrəˈstɔːlsɪs/
Phonetic Spelling: pair-uh-stawl-sis

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7. Hyperkeratosis

Pronunciation link: (merriam-webster.com)
IPA: /ˌhaɪpərˌkɛrəˈtoʊsɪs/
Phonetic Spelling: hy-per-ker-uh-toh-sis

8. Follicular

Pronunciation link: (merriam-webster.com)
IPA: /fəˈlɪkjələr/
Phonetic Spelling: fuh-lik-yuh-lur

9. Perivascular

Pronunciation link: No confirmed link found
IPA: /ˌpɛrɪˈvæskjələr/
Phonetic Spelling: peh-ree-vas-kyuh-lur

10. Periadnexal

Pronunciation link: No confirmed link found
IPA: /ˌpɛriædˈnɛksəl/
Phonetic Spelling: peh-ree-ad-nek-suhl

11. Lymphocytic

Pronunciation link: No confirmed link found
IPA: /ˌlɪmfəˈsɪtɪk/
Phonetic Spelling: lim-foh-sit-ik