

SECOND EDITION

CURRENT

Medical Diagnosis & Treatment



Study Guide

- In-depth, case-based review of key internal medicine topics
- Great preparation for internal medicine examinations
- Covers the most common diseases and disorders

GENE R. QUINN • NATHANIEL W. GLEASON
MAXINE A. PAPADAKIS • STEPHEN J. MCPHEE

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CURRENT Medical Diagnosis & Treatment Study Guide

Second Edition

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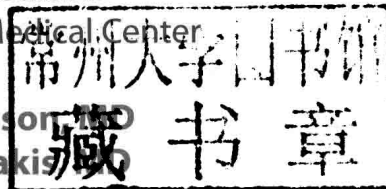
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Current Medical Diagnosis & Treatment Study Guide, Second Edition

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Preface

Purpose

Current Medical Diagnosis and Treatment (CMDT) is the leading internal medicine textbook known for its comprehensive coverage of current inpatient and outpatient care with diagnostic tools relevant to day-to-day practice. Facilitating its usefulness, this *CMDT Study Guide*, second edition, directs readers through a case analysis of 80 of the most common topics in internal medicine. The *CMDT Study Guide* provides a comprehensive and clearly organized synopsis of each medical topic that helps the reader review and study for a variety of examinations, such as the medicine clerkship shelf exam, USMLE Step 2 examinations, ABIM internal medicine boards, and recertification examinations. As such it will be very useful to medical, nursing (Adult and Family Nurse Practitioner Certification Exam), pharmacy, and other health professional students, Physician Assistant National Certifying Exam (PANCE), to house officers, and to practicing physicians. The *CMDT Study Guide* is engaging and patient-centered since each of the 80 topics begins with presentation of a typical patient to help the reader think in a step-wise fashion through the various clinical problem-solving aspects of the case. For each topic, the *CMDT Study Guide* provides PubMed's references to the most current and pertinent MEDLINE articles for that topic. Each reference provides PMID numbers to facilitate retrieval of the relevant articles.

Outstanding Features

- Eighty common internal medicine topics useful to learners and practitioners for patient care and to prepare for examinations
- Material drawn from the expert source, *Current Medical Diagnosis and Treatment 2016*, including tables about laboratory tests and treatments
- In-depth, consistent, and readable format organized in a way that allows for quick study and easy access to information
- Emphasis on a standard approach to clinical problem-solving with Learning Objectives, Salient Features, Symptoms and Signs, Treatment, Outcomes, When to Refer and When to Admit, and References

- Medical and nursing students, physician's assistants, nurse practitioners, house officers, and practicing physicians will find the clear organization and current literature references useful in devising proper management for patients with these conditions

Organization

The *CMDT Study Guide* provides comprehensive yet succinct information. Each *CMDT Study Guide* topic begins with a patient presentation, followed by Learning Objectives and 9 Questions to help the learner work through the topic in the context of the patient presented. Answers to the 9 questions are organized as Salient Features, How to Think Through the Problem, Key Features (which contain Essentials of Diagnosis, General Considerations, and Demographics), Symptoms and Signs, Differential Diagnosis, Laboratory, Imaging, and Procedural Findings, Treatments, Outcomes, and When to Refer and When to Admit. References are then provided that contain current literature citations complete with PubMed (PMID) numbers. The *CMDT Study Guide* is a complete source of patient care information for these 80 most common clinical problems! The 80 topics in the *CMDT Study Guide* were selected as the core topics for the learner because of their importance to the field of internal medicine.

The *CMDT Study Guide* follows the organization of *Quick Medical Diagnosis and Treatment (QMDT)* (or *Quick Dx & Rx* at www.accessmedicinehmhmedical.com) and the QMDT App, and is divided into 11 sections:

- Skin Disorders
- Pulmonary/Ear, Nose, & Throat Disorders
- Heart/Hypertension/Lipid Disorders
- Hematologic Disorders
- Gastrointestinal/Liver/Pancreas Disorders
- Gynecologic/Urologic Disorders
- Musculoskeletal Disorders
- Kidney/Electrolyte Disorders
- Nervous System/Psychiatric Disorders
- Endocrine/Metabolic Disorders
- Infectious Disorders

Intended Audience

Medical students on their internal medicine clerkship will find this *Study Guide* a useful aid as they care for patients with these common medical problems. The *Study Guide* will assist medical students, PA students, and NP students taking their internal medicine rotation and house officers to review the core topics as they prepare for standardized examinations. Practicing physicians, physician assistants and nurse practitioners will similarly find the *CMDT Study Guide* useful in order to stay current in clinical problem-solving, while providing a concise summary of relevant diagnostic laboratory, microbiologic, and imaging studies and treatments, and recent relevant publications.

Acknowledgments

We thank our *Current Medical Diagnosis and Treatment* authors for their contributions to it and we are grateful to the many students, residents, and practitioners who have made useful suggestions to this book. We hope that you will share with us your comments about the *CMDT Study Guide*.

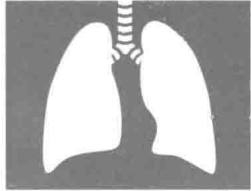
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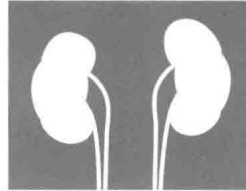
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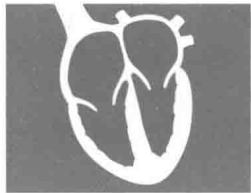
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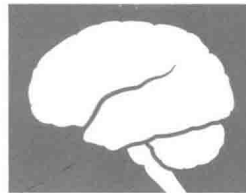
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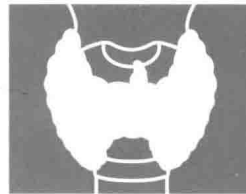
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Psychiatric
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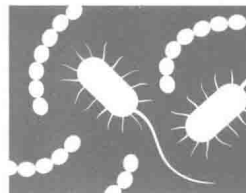
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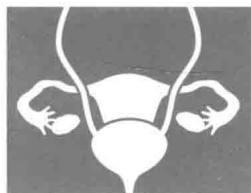
**Endocrine/
Metabolic
Disorders**



**Gastrointestinal/
Liver/Pancreas
Disorders**








**Infectious
Disorders**



**Gynecologic/
Urologic
Disorders**

Contents

<i>Preface</i>	<i>v</i>		
 Skin Disorders	1		
1. Atopic Dermatitis	2		
2. Contact Dermatitis	7		
3. Psoriasis	12		
 Pulmonary/Ear, Nose, and Throat Disorders	17		
4. Asthma	18		
5. Chronic Obstructive Pulmonary Disease	29		
6. Cough	37		
7. Dyspnea	43		
8. Lung Cancer	48		
9. Pharyngitis	56		
10. Pneumonia	60		
11. Pulmonary Embolism	70		
12. Sinusitis (Bacterial)	79		
 Heart/Hypertension/Lipid Disorders	85		
13. Acute Myocardial Infarction	86		
14. Aortic Regurgitation	94		
15. Aortic Stenosis	99		
16. Chest Pain	105		
17. Dyslipidemia	111		
18. Heart Failure	117		
19. Hypertension	126		
20. Mitral Regurgitation	140		
21. Mitral Stenosis	145		
22. Shock	149		
 Hematologic Disorders	155		
23. Hypercoagulable States	156		
24. Iron Deficiency Anemia	164		
25. Deep Venous Thrombosis and Thromboembolism	168		
26. Vitamin B ₁₂ Deficiency Anemia	175		
 Gastrointestinal/Liver/Pancreas Disorders	179		
27. Acute Cholecystitis	180		
28. Cirrhosis	185		
29. Colorectal Cancer	193		
30. Crohn Disease	199		
31. Diarrhea	205		
32. Lower Gastrointestinal Bleeding	216		
33. Upper Gastrointestinal Bleeding	221		
34. Viral Hepatitis	226		
35. Acute Pancreatitis	241		
36. Chronic Pancreatitis	248		
37. Ulcerative Colitis	255		
 Gynecologic/Urologic Disorders	263		
38. Breast Cancer	264		
39. Benign Prostatic Hyperplasia	274		
40. Dysmenorrhea	280		
41. Prostate Cancer	284		
 Musculoskeletal Disorders	291		
42. Low Back Pain	292		
43. Gout	298		
44. Knee Pain	304		
45. Rheumatoid Arthritis	313		
46. Systemic Lupus Erythematosus	321		
 Kidney/Electrolyte Disorders	329		
47. Glomerulonephritis	330		
48. Hypokalemia	338		
49. Hyponatremia	342		
50. Acute Kidney Injury	349		
51. Chronic Kidney Disease	354		
52. Kidney Stone Disease	361		
53. Metabolic Acidosis	367		
54. Nephrotic Syndrome	373		
 Nervous System/Psychiatric Disorders	379		
55. Altered Mental Status	380		
56. Dementia	387		
57. Depression	394		
58. Epilepsy	401		
59. Bacterial Meningitis	408		
60. Myasthenia Gravis	415		
61. Parkinson Disease	420		
62. Stroke	426		
63. Smoking Cessation	435		
64. Substance Abuse	441		

**Endocrine/Metabolic Disorders****447**

65. Adrenocortical Insufficiency	448
66. Cushing Syndrome	456
67. Type 1 Diabetes Mellitus	463
68. Type 2 Diabetes Mellitus	470
69. Hyperaldosteronism (Aldosteronism)	482
70. Hypercalcemia	487
71. Primary Hyperparathyroidism	492
72. Hyperthyroidism	499
73. Hypothyroidism	506

**Infectious Disorders****525**

74. Obesity	512
75. Osteoporosis	518
76. Fever	526
77. HIV-AIDS	532
78. Healthcare-Associated Infections	547
79. Infective Endocarditis	553
80. Sepsis	561
<i>Index</i>	567



ANSWERS

Salient Features

Pulmonary/Ear, Nose, and Throat Disorders

How to Tackle Them

Heart/Hypertension/Lipid Disorders

Hematologic Disorders

Gastrointestinal/Liver/Pancreas Disorders

Gynecologic/Urologic Disorders

Musculoskeletal Disorders

Kidney/Electrolyte Disorders

Nervous System/Psychiatric Disorders

Endocrine/Metabolic Disorders

Infectious Disorders



1

Atopic Dermatitis

A 30-year-old woman presents to her primary care clinician with an itchy rash on her hands, wrists, and arms. She states she has had similar rashes before, which had gone away with over-the-counter hydrocortisone cream, the first episode occurring when she was very young. Her past medical history includes asthma. She takes loratadine occasionally for allergic rhinitis. Physical examination reveals plaques on the hands, wrists, and antecubital folds, which are mildly exudative and without scale. Laboratory testing shows eosinophilia on a complete blood count with differential and an elevated serum immunoglobulin E (IgE) level.

LEARNING OBJECTIVES

- ▶ Learn the clinical manifestations and objective findings of atopic dermatitis, and the findings that distinguish it from other skin conditions
- ▶ Understand the associated diseases that predispose to atopic dermatitis
- ▶ Know the differential diagnosis of atopic dermatitis
- ▶ Learn the treatments for each clinical pattern of atopic dermatitis
- ▶ Know which patients are likely to have recurrent atopic dermatitis and how to prevent flares

QUESTIONS

1. What are the salient features of this patient's problem?
2. How do you think through her problem?
3. What are the key features, including essentials of diagnosis and general considerations, of atopic dermatitis?
4. What are the symptoms and signs of atopic dermatitis?
5. What is the differential diagnosis of atopic dermatitis?
6. What are the laboratory findings in atopic dermatitis?
7. What are the treatments for atopic dermatitis?
8. What are the outcomes, including complications, prognosis, and prevention, of atopic dermatitis?
9. When should patients with atopic dermatitis be referred to a specialist?

ANSWERS

1. Salient Features

Pruritic rash in distribution of hands, wrists, antecubital folds; similar symptoms starting in childhood; personal history of atopic conditions (asthma, allergic rhinitis); plaques with exudates and without scale; eosinophilia; and elevated serum IgE levels

2. How to Think Through

It is important to think broadly about possible causes of rash in this patient, despite her strong atopic history. Might this be seborrheic dermatitis? (Seborrheic dermatitis typically looks like greasy, scaly lesions on the central face and scalp.) A fungal infection? (Prior similar manifestations have resolved with topical corticosteroid treatment, making this unlikely.) Psoriasis? (The distribution and absence of silvery scale makes this unlikely.) Contact dermatitis? (This is a reasonable consideration. Contact dermatitis can be indistinguishable from atopic dermatitis, and in this case, the rash is similarly confined to exposed areas of the body.) What would raise your suspicion for contact dermatitis? (A history of new potential allergen or irritant exposure.)

After considering the above, a diagnosis of atopic dermatitis is most likely, given the prior atopy (asthma and allergic rhinitis), the recurrence of similar symptoms since childhood, the eosinophilia, and elevated IgE. How should she be treated? (Mid-potency topical corticosteroids twice daily with subsequent tapering to low-potency corticosteroids, and with emollient applied frequently. This patient's presentation is unlikely to require oral corticosteroid treatment. An oral antihistamine for itching may be helpful.) How would you counsel this patient to prevent future flares? (Avoid excessive bathing and hand washing. Use mild soaps. Apply emollient after washing. Trim fingernails and wrap affected areas at night to prevent scratching.)

3. Key Features

Essentials of Diagnosis

- Pruritic, exudative, or lichenified eruption on face, neck, upper trunk, wrists, hands, and antecubital and popliteal folds
- Personal or family history of allergies or asthma
- Tendency to recur
- Onset in childhood in most patients; onset after age 30 is very uncommon

General Considerations

- Also known as eczema
- Looks different at different ages and in people of different races
- Diagnostic criteria include
 - Pruritus
 - Typical morphology and distribution (flexural lichenification, hand eczema, nipple eczema, and eyelid eczema in adults)
 - Onset in childhood
 - Chronicity
- Also diagnostically helpful are
 - Personal history of asthma or allergic rhinitis
 - Family history of atopic disease (asthma, allergic rhinitis, atopic dermatitis)
 - Xerosis ichthyosis
 - Facial pallor with infraorbital darkening
 - Elevated serum IgE
 - Repeated skin infections



4. Symptoms and Signs

- Itching may be severe and prolonged
- Rough, red plaques usually without the thick scale and discrete demarcation of psoriasis affect the face, neck, and upper trunk; may be pruritic or exudative
- Flexural surfaces of elbows and knees are often involved
- In chronic cases, the skin is dry, leathery, and lichenified
- In black patients with severe disease, pigmentation may be lost in lichenified areas
- During acute flares, widespread redness with weeping, either diffusely or in discrete plaques

5. Differential Diagnosis

- Seborrheic dermatitis
- Impetigo
- Secondary staphylococcal infections
- Psoriasis
- Lichen simplex chronicus (circumscribed neurodermatitis)

6. Laboratory Findings

Laboratory Tests

- Eosinophilia and increased serum IgE levels may be present

7. Treatments

Medications

Local Treatments

- Corticosteroids
 - For treatment of lesions on the body (excluding genitalia, axillary or crural folds), begin with triamcinolone 0.1% ointment or a stronger corticosteroid, then taper to hydrocortisone 1% ointment or another slightly stronger mild corticosteroid (alclometasone 0.05% or desonide 0.05% ointment)
 - Apply sparingly once or twice daily
 - Taper off corticosteroids and substitute emollients as the dermatitis clears to avoid the side effects of corticosteroids and rebound
- Tacrolimus and pimecrolimus
 - Do not appear to cause corticosteroid side effects
 - Safe on the face and eyelids
 - Use sparingly and for as brief a time as possible
 - Avoid in patients at high risk for lymphoma (ie, those with HIV, iatrogenic immunosuppression, prior lymphoma)
 - Tacrolimus 0.03% and 0.1% ointment applied twice daily
 - Effective as a first-line steroid-sparing agent
 - Burning on application occurs in about half but may resolve with continued treatment
 - Pimecrolimus 1% cream applied twice daily is similar but burns less

Systemic and Adjuvant Therapies

- Prednisone
 - Start at 40 to 60 mg orally daily
 - Taper to nil over 2 to 4 weeks
 - Use as long-term maintenance therapy is not recommended
- Bedtime doses of hydroxyzine, diphenhydramine, or doxepin may be helpful via their sedative properties in reducing perceived pruritus



- Antistaphylococcal antibiotics
 - Should only be used if indicated by bacterial culture
 - First-generation cephalosporins may be helpful
 - Doxycycline, if methicillin-resistant *Staphylococcus aureus* is suspected
- Phototherapy
- Oral cyclosporine, mycophenolate mofetil, methotrexate, interferon gamma, dupilumab, or azathioprine may be used for the most severe and recalcitrant cases

Treatment by Pattern and Stage of Dermatitis

- Acute weeping lesions
 - Staphylococcal or herpetic superinfection should be excluded
 - Use saline or aluminum subacetate solution (Domeboro tablets) or colloidal oatmeal (Aveeno) as soothing or wet dressings or astringent soaks for 10 to 30 minutes two to four times a day
- Lesions on the extremities may be bandaged for protection at night
 - Use high-potency corticosteroids after soaking but spare the face and body folds
 - Tacrolimus may not be tolerated; systemic corticosteroids are last resort
- Subacute or scaly lesions (lesions are dry but still red and pruritic)
 - Mid- to high-potency corticosteroids
 - In ointment form if tolerated—creams, if not
 - Should be continued until scaling and elevated skin lesions are cleared and itching is decreased
 - Then, begin a 2- to 4-week taper with topical corticosteroids
- Chronic, dry lichenified lesions (thickened and usually well demarcated)
 - High-potency to ultrahigh-potency corticosteroid ointments
 - Nightly occlusion for 2 to 6 weeks may enhance the initial response
 - Occasionally, adding tar preparations such as liquor carbonis detergens 10% in Aquaphor or 2% crude coal tar may be beneficial
- Maintenance treatment
 - Constant application of effective moisturizers is recommended to prevent flares
 - In patients with moderate disease, topical anti-inflammatory agents can be used on weekends only or three times weekly to prevent flares

8. Outcomes

Complications

- Treatment complications
 - Monitor for skin atrophy
 - Eczema herpeticum, a generalized herpes simplex infection manifested by monomorphic vesicles, crusts, or scalloped erosions superimposed on atopic dermatitis or other extensive eczematous processes
- Smallpox vaccination is absolutely contraindicated in patients with atopic dermatitis or a history thereof because of the risk of eczema vaccinatum

Prognosis

- Runs a chronic or intermittent course
- Affected adults may have only hand dermatitis
- Poor prognostic factors for persistence into adulthood: onset early in childhood, early generalized disease, and asthma; only 40% to 60% of these patients have lasting remissions

Prevention

- Avoid things that dry or irritate the skin: low humidity and dry air
- Other triggers: sweating, overbathing, animal danders, scratchy fabrics
- Do not bathe more than once daily and use soap only on armpits, groin, and feet
- After rinsing, pat the skin dry (not rub) and then, before it dries completely, cover with a thin film of emollient such as Aquaphor, Eucerin, petrolatum, Vanicream



9. When to Refer

- If there is a question about the diagnosis, recommended therapy is ineffective, or specialized treatment is necessary

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Contact Dermatitis

2

A 30-year-old woman presents to the clinic complaining that she has "an itchy rash all over the place." She noticed that her legs became red, itchy, and blistered about 2 days after she had been hiking in a heavily wooded area. She says that scratching broke the blisters and afterward the rash became much worse and spread all over. She is convinced that the rash could not be poison ivy because once before she was exposed to that plant and did not develop a rash. On examination, there are erythematous vesicles and bullae in linear streaks on both of her legs. Some areas are weepy, with a yellowish crust. There are ill-defined erythematous plaques studded with papulovesicles on the trunk and arms.

LEARNING OBJECTIVES

- ▶ Learn the clinical manifestations and morphologic type of eruption in contact dermatitis
- ▶ Understand the factors that predispose to contact dermatitis
- ▶ Know the differential diagnosis of contact dermatitis
- ▶ Learn the treatments for contact dermatitis by its severity
- ▶ Understand how to prevent contact dermatitis from recurring

QUESTIONS

1. What are the salient features of this patient's problem?
2. How do you think through her problem?
3. What are the key features, including essentials of diagnosis and general considerations, of contact dermatitis?
4. What are the symptoms and signs of contact dermatitis?
5. What is the differential diagnosis of contact dermatitis?
6. What are the laboratory and procedural findings in contact dermatitis?
7. What are the treatments for contact dermatitis?
8. What are the outcomes, including prognosis and prevention, of contact dermatitis?
9. When should patients with contact dermatitis be referred to a specialist?



ANSWERS

1. Salient Features

Itchy erythematous rash; history of pre-eruption exposure to the outdoors; previous initial exposure to same antigen; weeping, vesicles, and bullae in allergic type

2. How to Think Through

This patient's rash is severe, so it is important to think broadly about other causes besides those linked to the outdoor exposure. No symptoms or signs of systemic illness are mentioned, but a complete review of systems and physical examination (with vital signs) are essential. Could this be atopic dermatitis? (Unlikely—there is no history of atopy or prior similar symptoms.) Might this be seborrheic dermatitis? (No, since it typically involves the face and scalp.) A fungal infection? (The pace is too rapid and the rash is more consistent with dermatitis). Scabies? (No, due to the rapid pace and lack of focus in intertriginous areas.) Could this be impetigo? (Yes, careful examination is warranted to exclude impetigo.) What features of this case provide the strongest evidence for contact dermatitis? (Streaked appearance, a pattern confined to exposed areas of the body, recent possible exposure to poison ivy with prior contact with this antigen.) What are the two classes of causative agents in contact dermatitis? (Irritants and antigens.) What are common irritants or antigens?

How should she be treated—topically or systemically? (The weeping and bullae suggest that she may need systemic corticosteroids.) What complications may develop? (Superinfection, especially with *Streptococcus* spp and *Staphylococcus aureus*.)

3. Key Features

Essentials of Diagnosis

- Erythema and edema, with pruritus, often followed by vesicles and bullae in an area of contact with a suspected agent
- Later, weeping, crusting, or secondary infection
- A history of previous reaction to suspected contactant
- Patch test with agent positive

General Considerations

- An acute or chronic dermatitis that results from direct skin contact with chemicals or allergens
- Irritant contact dermatitis
 - Eighty percent of cases are due to excessive exposure to or additive effects of universal irritants such as soaps, detergents, or organic solvents
 - Appears red and scaly but not vesicular
- Allergic contact dermatitis
 - Most common causes are poison ivy, oak, or sumac; topically applied antimicrobials (especially bacitracin and neomycin), anesthetics (benzocaine); haircare products; preservatives; jewelry (nickel); rubber; essential oils; propolis (from bees); vitamin E; and adhesive tape
 - Occupational exposure is an important cause
- Weeping and crusting are typically due to allergic and not irritant dermatitis

4. Symptoms and Signs

- The acute phase is characterized by tiny vesicles and weepy and crusted lesions
- Resolving or chronic contact dermatitis presents with scaling, erythema, and possibly thickened skin; itching, burning, and stinging may be severe
- The lesions, distributed on exposed parts or in bizarre asymmetric patterns, consist of erythematous macules, papules, and vesicles
- The affected area is often hot and swollen, with exudation and crusting, simulating and, at times, complicated by infection



- The pattern of the eruption may be diagnostic (eg, typical linear streaked vesicles on the extremities in poison oak or ivy dermatitis)
- The location will often suggest the cause
 - Scalp involvement suggests hair dyes or shampoos
 - Face involvement, creams, cosmetics, soaps, shaving materials, nail polish; neck involvement, jewelry, hair dyes

5. Differential Diagnosis

- Impetigo
- Cellulitis
- Scabies
- Dermatophytid reaction (allergy or sensitivity to fungi)
- Atopic dermatitis
- Pompholyx
- Asymmetric distribution, blotchy erythema around the face, linear lesions, and a history of exposure help distinguish contact dermatitis from other skin lesions
- The most commonly confused diagnosis is impetigo, in which case Gram stain and culture will rule out impetigo or secondary infection (impetiginization)

6. Laboratory and Procedural Findings

Laboratory Tests

- Gram stain and culture will rule out impetigo or secondary infection (impetiginization)
- After the episode of allergic contact dermatitis has cleared, patch testing may be useful if triggering allergen is not known

Diagnostic Procedures

- If itching is generalized, then consider scabies

7. Treatments

- Table 2-1
- Vesicular and weepy lesions often require systemic corticosteroid therapy
- Localized involvement (except on the face) can often be managed with topical agents
- Irritant contact dermatitis is treated by protection from the irritant and use of topical corticosteroids as for atopic dermatitis

Local Measures

- Acute weeping dermatitis
 - Compresses are most often used
 - Lesions on the extremities may be bandaged with wet dressings for 30 to 60 minutes several times a day
 - Calamine or zinc oxide paste can be used between wet dressings, especially for intertriginous areas or when oozing is not marked
 - High-potency topical corticosteroids in gel or cream form (fluocinonide, clobetasol, or halobetasol) may help suppress acute contact dermatitis and relieve itching
 - Then, taper the number of high-potency topical steroid applications per day or use a mid-potency corticosteroid, such as triamcinolone 0.1% cream to prevent rebound of the dermatitis
 - A soothing formulation is 2 oz 0.1% triamcinolone acetone cream in 7.5 oz Sarna lotion (0.5% camphor, 0.5% menthol, 0.5% phenol)
- Subacute dermatitis (subsiding)
 - Mid-potency (triamcinolone 0.1%) to high-potency corticosteroids (clobetasol 0.05%, fluocinonide 0.05%, desoximetasone 0.05%–0.25%) are the mainstays of the therapy
- Chronic dermatitis (dry and lichenified)
 - High- to super-potency corticosteroids are used in ointment form