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Paronychia Drainage: Nursing Assessment, Procedural Care, and Infection Prevention

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Abstract

Background: Acute paronychia is a common periungual infection characterized by inflammation and abscess formation around the nail folds. It often results from disruption of the protective nail fold barrier due to trauma, nail-biting, or cosmetic practices, allowing microbial inoculation.

Aim: To outline nursing assessment, procedural care, and infection prevention strategies for effective management of acute paronychia requiring drainage.

Methods: A comprehensive review of clinical staging, anatomical considerations, procedural techniques, and nursing roles was conducted. Evidence-based guidelines and expert consensus were synthesized to define indications, contraindications, equipment, and post-procedure care.

Results: Clinical diagnosis relies on identifying pain, erythema, swelling, and fluctuance. Abscess presence is the primary indication for drainage, which may involve lateral fold elevation, eponychial access, or complete nail plate removal for subungual abscesses. Nursing responsibilities include triage, neurovascular assessment, sterile preparation, patient education, and follow-up. Effective drainage combined with culture-guided antibiotic therapy and structured aftercare reduces recurrence and complications such as felon or osteomyelitis.

Conclusion: Timely recognition of abscess formation and safe drainage are critical for preventing progression and restoring function. Nursing interventions play a pivotal role in optimizing outcomes through procedural support, infection control, and patient education.

Keywords: Acute paronychia, abscess drainage, nursing care, periungual infection, nail anatomy, infection prevention.

Introduction

Acute paronychia is among the most frequently encountered infections affecting the hand and periungual tissues, and it represents a common reason for urgent clinical assessment in primary care, emergency, and outpatient procedural settings.[1][2] The condition is defined by an acute inflammatory and infectious process involving the soft tissue adjacent to the nail plate—most often the lateral nail fold, though the proximal nail fold may also be involved. In the majority of cases, the initiating event is not a spontaneous infection arising in intact tissue, but rather a structural failure of the normal protective barrier that seals the junction between the nail plate and the surrounding nail fold. Once this seal is compromised, microorganisms can be inoculated into the periungual space, allowing localized infection to develop.[3] The disruption may be subtle, yet clinically important: microscopic fissures, minor lacerations, or maceration can transform a normally

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resistant interface into an entry point for pathogens. The subsequent inflammatory response produces the characteristic clinical syndrome of tenderness, erythema, swelling, and, in more advanced presentations, fluctuant abscess formation that may require procedural drainage. The breakdown of this protective barrier is typically precipitated by behaviors and exposures that either directly traumatize the periungual tissues or promote chronic moisture and maceration. Nail-biting is a prominent risk factor, particularly among adolescents and individuals experiencing anxiety-related habitual behaviors, as it repeatedly compromises the nail fold and introduces oral flora into the wound environment. Similarly, minor trauma—such as that sustained during manual work, sports, or accidental injury—can create an entry portal for microorganisms. Cosmetic practices, including manicures, trimming of the cuticle, and manipulation of hangnails, are also well recognized triggers because the cuticle functions as an important physical barrier; when it is damaged or removed, the risk of periungual infection increases. Ingrown nails and aggressive hangnail "picking" can produce recurrent microtrauma, creating a local milieu conducive to infection. In some patients, the process progresses beyond cellulitis to the development of a localized abscess containing pus in the soft tissues adjacent to the nail. The presence of an abscess is clinically significant because antibiotics alone may be insufficient; drainage becomes necessary to evacuate purulence, decompress the affected tissues, reduce bacterial burden, and permit rapid symptom relief. In this context, procedural management is not an optional adjunct but a core therapeutic intervention.

Microbiologically, acute paronychia is frequently polymicrobial, reflecting both the diversity of organisms present on the skin surface and the influence of exposure-related inoculation patterns. Reports indicate that mixed aerobic and anaerobic flora are present in approximately half of cases.[4] This polymicrobial potential has direct implications for clinical decision-making, especially when selecting empiric antimicrobial therapy for patients with cellulitis extending beyond the nail fold, systemic symptoms, immunocompromise, or high-risk exposures. Among implicated pathogens, Staphylococcus aureus is the most common causative organism, including methicillin-resistant Staphylococcus aureus (MRSA) strains in communities where MRSA prevalence is substantial.[2][4] Other aerobic bacteria may include Streptococcus species as well as gram-negative organisms, particularly in certain exposure contexts. Anaerobic organisms have particular relevance in cases where the infection is associated with contact with oral secretions—most notably nail-biting or digital sucking behaviors. In these circumstances, organisms such as Bacteroides, Enterococcus species, and Eikenella corrodens have been associated with periungual infection, and these exposures are more commonly encountered in children, though they can occur in any age group.[2][4] Because antimicrobial coverage must be tailored to the likely microbial spectrum, the clinical history becomes a central diagnostic tool: it guides clinicians toward or away from the need for MRSA-active agents and toward consideration of anaerobic coverage when oral inoculation is likely. Additionally, local antibiotic guidance and awareness of institutional or regional MRSA rates are essential in directing appropriate empiric prescribing.[5] This approach supports both effective treatment and antibiotic stewardship by avoiding overly broad regimens when they are not justified, while ensuring adequate coverage when risk factors exist. Although acute paronychia is most often bacterial, nonbacterial etiologies are clinically important, particularly because they influence procedural safety and therapeutic direction. Fungal infections, most notably those caused by Candida albicans, are less common in acute presentations but may be relevant in chronic or recurrent periungual inflammation. Viral causes, especially herpes simplex virus, can also produce distal digit infections that may resemble paronychia in early stages. In clinical practice, the most consequential viral differential is herpetic whitlow, which may present with pain, erythema, and swelling of the distal phalanx, often accompanied by grouped vesicles or blisters.[2] The distinction matters because management strategies diverge sharply: herpetic whitlow is generally treated with supportive care and, when appropriate, antiviral therapy, whereas surgical drainage is contraindicated in uncomplicated herpetic infection due to the risk of worsening local tissue injury, facilitating viral spread, and increasing the likelihood of secondary bacterial infection. Drainage should be avoided unless there is clear evidence of concurrent bacterial abscess formation.[2] Therefore, careful inspection for vesicles, an assessment of pain characteristics (often disproportionately severe in herpetic infections), and evaluation of relevant exposure history (such as contact with oral secretions or known herpes lesions) are critical components of safe clinical assessment prior to any attempt at incision and drainage.

Classification by duration further clarifies both etiology and management. Acute paronychia is generally defined by symptoms present for less than six weeks, whereas chronic paronychia persists for six weeks or longer.[6] This distinction is not merely temporal; it reflects fundamentally different pathophysiologic processes. Chronic paronychia is widely recognized as a multifactorial inflammatory disorder rather than a straightforward bacterial infection, and it is frequently driven by repeated exposure to irritants, allergens, or prolonged moisture. Occupational exposures—such as frequent handwashing, wet work, chemical exposure, or glove

use that promotes sweating—can predispose to chronic inflammation of the periungual folds. In chronic disease, the ongoing inflammatory disruption compromises the barrier function of the cuticle and nail fold, permitting secondary colonization by microorganisms, with Candida albicans commonly implicated.[2][7] However, in many cases, Candida represents colonization rather than the primary driver, which is why treatment often emphasizes barrier restoration, avoidance of irritants, and anti-inflammatory strategies rather than drainage. Because chronic paronychia has a distinct etiology and a different therapeutic approach, it is appropriately treated as a separate entity from acute paronychia. The focus of procedural drainage, therefore, is primarily directed toward acute bacterial paronychia, particularly when abscess formation is present. It is also important to acknowledge anatomical and contextual variations that influence presentation and management. Paronychia affecting the toes is relatively common, frequently associated with ingrown toenails and footwear-related pressure.[2] While general principles of infection control, drainage of abscesses, and targeted antimicrobial use may overlap between hand and toe paronychia, toe infections may require additional attention to nail mechanics, footwear modification, and—in recurrent cases—more definitive management of the ingrown nail. Nevertheless, because the functional demands, contamination risks, and procedural considerations differ between hands and feet, many clinical discussions treat hand paronychia drainage as a distinct focus.

Fig. 1: Paronychia.

Within nursing practice, acute paronychia has particular relevance because nurses often perform triage, identify red flags, assess neurovascular status, provide wound care education, reinforce hygiene and prevention strategies, and monitor response to treatment. Recognizing when a paronychia has progressed from superficial inflammation to abscess formation is central to timely escalation for drainage, while identifying features suggestive of herpetic whitlow or chronic inflammatory paronychia helps prevent inappropriate procedures and guides correct referral. In sum, acute paronychia is common, often precipitated by disruption of the nail fold barrier with subsequent microbial inoculation,[3] frequently involves polymicrobial flora with Staphylococcus aureus as a leading pathogen,[2][4] and may require drainage when an abscess is present. The clinical challenge lies in integrating history, exposure risk, and physical examination to distinguish acute bacterial infection from chronic inflammatory disease and viral mimics such as herpetic whitlow,[2] ensuring that management is both effective and procedurally safe.

Clinical Assessment and Diagnosis

Acute paronychia is primarily a clinical diagnosis based on characteristic symptoms and local examination findings. Patients most commonly present with acute onset pain, swelling, erythema, and tenderness along the proximal or lateral nail folds, often following a recent precipitating event such as nail-biting, manicure-related trauma, hangnail manipulation, or minor penetrating injury. The clinician's assessment should be methodical because early, non-suppurative inflammation may be managed conservatively, whereas established abscess formation generally requires drainage to achieve definitive source control. Nursing assessment is particularly influential at this stage, as nurses frequently perform the initial evaluation, identify red flags, initiate symptom control measures, reinforce infection prevention advice, and determine whether escalation for procedural intervention is required. The hallmark triad of acute paronychia is localized periungual pain, erythema, and swelling of the nail fold. These signs may range from mild inflammation confined to a small segment of the fold to more extensive swelling with increased warmth and severe tenderness. Clinicians should assess the distribution of inflammation, the degree of tenderness, and the presence of fluctuance, as these findings help distinguish cellulitis from abscess. Formation of pus may occur along the paronychial fold, and if untreated, infection can extend proximally to involve the eponychium and potentially track beneath the nail plate. Clinically, this progression may be appreciated as increasing swelling that becomes soft, boggy, and exquisitely tender, often with a focal point of maximal pain. The description of a "tender, boggy swelling" is clinically meaningful because it often corresponds to a localized collection of purulence under pressure, which is unlikely to resolve promptly with antibiotics alone.

In addition to standard inspection and palpation, bedside maneuvers may support recognition of an abscess when pus is not overtly draining. Turkmen et al. described the digital pressure

test as a simple clinical method to help identify pus within the periungual soft tissue. When light pressure is applied to the volar aspect of the fingertip of the affected digit, a localized region of skin blanching around the nail may indicate an underlying abscess.[8] The rationale is that pressure displaces tissue fluid and accentuates the presence of a localized collection, producing a visible blanching pattern that is not seen when only diffuse inflammation is present. While this test should not replace careful palpation and clinical judgment, it is particularly helpful in equivocal cases where swelling is present but fluctuance is difficult to appreciate, such as when edema is tense or when patient discomfort limits examination. The clinician should also assess for pus deep to the nail plate. Subungual involvement may be suspected when purulence is visible through the nail plate, when the nail appears discolored or lifted, or when palpation suggests a ballotable collection under the nail. Inspection from multiple angles in good lighting is useful, and gentle palpation can help determine whether tenderness is localized to the nail fold alone or extends beneath the nail. A safe diagnostic approach requires attention to important alternative diagnoses and associated conditions that can mimic paronychia, coexist with it, or result from it. A particularly relevant entity is a felon, an infection of the digital pulp space of the distal phalanx. A felon is distinct from paronychia in both anatomy and management: it involves the fingertip pulp compartment and can cause pressure necrosis if not drained. Although paronychia can progress and contribute to felon development, the presence of one does not automatically imply the presence of the other. Therefore, clinicians must examine the entire distal finger, not just the nail folds. A felon is suggested by a very tender, fluctuant swelling localized to the finger pad, often with throbbing pain and tense pulp tissue.[1] The physical finding is typically confined to the volar pulp rather than the periungual fold, although advanced infections can blur boundaries. Identification matters because a felon may require a different incision approach and, in many settings, specialist involvement. In contrast, the present discussion focuses specifically on acute paronychia drainage, emphasizing the importance of distinguishing periungual abscess from pulp space infection.

Clinical staging of acute paronychia is central to diagnosis because it directly determines management. In early-stage paronychia, inflammation may be limited to the paronychial fold without any established pus collection. The nail fold appears erythematous and swollen, but palpation may reveal firmness rather than fluctuance, and the pain may be moderate rather than severe. In this stage, most cases can be managed non-operatively in primary care or emergency settings. Conservative management typically includes oral antibiotics when bacterial infection is suspected and careful safety-netting with close follow-up, as progression to abscess can occur. Antibiotic choice is guided by likely pathogens and exposure risks. Agents providing gram-positive coverage are generally advised, while broader-spectrum coverage is preferable if there is suspicion of oral inoculation, such as nail-biting or finger-sucking, due to the increased likelihood of mixed aerobic and anaerobic organisms.[6][7][9] Nursing input is critical in ensuring patients understand dosing, recognize signs of progression, and return promptly if symptoms worsen, as early-stage paronychia can deteriorate quickly. Adjunctive measures such as warm water or antiseptic soaks are sometimes recommended in early paronychia. However, it is important to recognize that evidence supporting routine use at any stage is not definitive, and therefore these measures should not be portrayed as universally required.[2][9] Clinicians may still suggest soaks in selected cases for comfort and local hygiene, but patients should be counseled that these measures do not substitute for reassessment if swelling increases, pain intensifies, or pus becomes evident. When advising supportive care, the priority should remain on monitoring and timely escalation rather than on prolonged home treatment in the face of evolving abscess.

In later-stage paronychia, the presence of pus in the form of a local abscess becomes the defining diagnostic feature and the primary determinant of treatment. Clinically, the nail fold may appear markedly swollen and tense, and a focal area of fluctuance may be palpable. There may be visible purulence at the cuticle margin or lateral fold, and the digit can be extremely tender. At this point, procedural drainage is indicated because the abscess represents a closed space infection in which antibiotic penetration and immune clearance are limited. Laboratory and radiological investigations may be relevant in this stage, particularly to identify complications or contributing factors. Plain film radiographs of the affected digit are often used to evaluate for foreign bodies, fractures, or osteomyelitis when the history suggests penetrating trauma, when symptoms are unusually severe or prolonged, or when there is concern for deep infection.[1] Although osteomyelitis is not common in straightforward acute paronychia, delayed presentation, immunocompromise, or recurrent infection increases risk, and imaging can be an important risk-reduction step. Metabolic assessment can also be clinically relevant. Glucose testing may be necessary to review glycemic control in patients with known diabetes and may occasionally identify previously undiagnosed diabetes in patients presenting with unexpectedly severe infection or poor wound healing. Poor glycemic control is associated with increased infection risk and impaired resolution, and identifying this factor can meaningfully influence

both acute management and long-term prevention counseling. More extensive blood testing—such as a complete blood count and inflammatory markers—is not routinely required for uncomplicated localized paronychia, but may be justified in more severe presentations with extensive cellulitis, systemic symptoms, or tracking lymphangitis, where the clinician must evaluate for more significant infection burden and potential systemic involvement. In such cases, abnormal inflammatory markers may support the need for escalation, broader antibiotic coverage, or inpatient observation depending on clinical stability and comorbidities.

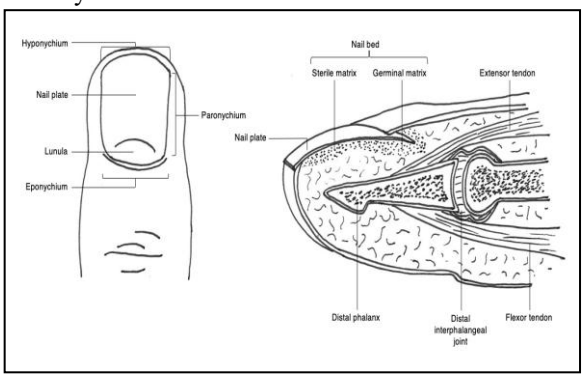

Fig. 2: Illustration of fingertip anatomy.

The decision to drain should be grounded in the clinical presence of an abscess. In all cases of paronychia with established abscess formation, surgical drainage is indicated.[1] The setting for drainage depends on local resources, clinician expertise, and patient factors. Many abscesses can be drained safely in primary care or emergency department environments when appropriate procedural competence and sterile technique are available. However, referral to hand surgery or a higher level of care may be necessary when infection is extensive, when there is concern for deep space involvement, when prior drainage attempts have failed, or when comorbidities and risk factors increase procedural or infection-related risk. The clinician should also consider referral if the abscess extends beneath the nail plate, if there is significant nail plate lifting, or if there are features that suggest alternative diagnoses, such as herpetic lesions, which would make standard incision and drainage inappropriate. In summary, the diagnosis of acute paronychia is clinical and depends on recognition of periungual pain, erythema, and swelling, with careful evaluation for abscess formation, which can be suggested by boggy swelling, fluctuance, visible or ballotable pus, and supportive maneuvers such as the digital pressure test.[8] Assessment must also include examination for related or alternative infections such as felon, characterized by a tender, fluctuant pulp space swelling.[1] Early inflammatory paronychia without pus is commonly managed non-operatively with close follow-up and appropriately targeted antibiotics based on exposure risk.[6][7][9] Once an abscess is present, drainage is indicated, and selected radiologic and laboratory investigations may help identify foreign bodies, fractures, osteomyelitis risk, metabolic contributors, or severe infection patterns requiring escalation.[1]

Anatomy and Physiology

A precise understanding of distal digit anatomy and nail unit physiology is fundamental to safe and effective management of acute paronychia, particularly when abscess formation necessitates drainage. The fingertip region distal to the insertions of the flexor and extensor tendons is composed of specialized osseous and soft-tissue structures that provide both functional dexterity and a highly effective barrier to environmental pathogens.[10] This distal unit is not simply skin over bone; rather, it represents an integrated system in which the terminal phalanx, the fibrofatty pulp, and the nail apparatus collectively enable fine motor performance, tactile discrimination, and protection of the distal phalanx. For nurses involved in procedural preparation, wound care, and post-procedural monitoring, appreciating the boundaries and relationships of these structures supports accurate assessment, anticipation of abscess spread, selection of safe intervention sites, and early recognition of complications. The nail apparatus consists of three principal components: the nail plate, the perionychium, and the nail bed.[10] The nail plate is the hardened, keratinized structure visible on inspection and functions as a rigid protective cap over the dorsal distal phalanx. Beyond protection, the nail plate has distinct biomechanical roles that are clinically relevant. By providing a firm counterpressure surface to the finger pulp, it enhances the efficiency of fine touch sensation and improves the ability to manipulate small objects. In humans, the nail plate also improves grip and precision handling, supporting delicate tasks that require stabilization of the pulp against a rigid surface.[6] This counterpressure function helps explain why pain and disability can be disproportionate when periungual inflammation causes tissue tension; swelling adjacent to the nail plate occurs in a constrained compartment, producing pressure-related tenderness that is amplified by the rigidity of the nail unit. Surrounding the nail plate, the perionychium comprises the specialized soft tissues that border and seal the nail unit.[6] These tissues are subdivided by their anatomical relationship to the nail plate and each has a specific protective function. Laterally, the paronychium refers to the lateral nail folds that frame the sides of the nail plate and provide a barrier against microbial entry. Distally, the hyponychium is the tissue beneath the free edge of the nail plate that forms a protective seal between the nail plate and the fingertip pulp. Proximally, the eponychium—commonly referred to in clinical contexts as the cuticle region—forms a critical seal over the proximal nail fold. This seal is not merely cosmetic; it is a primary barrier that prevents the ingress of water, debris, and microorganisms into the potential

space between the proximal nail fold and the nail plate. When the eponychial seal is disrupted by minor trauma, cuticle trimming, aggressive manicure practices, or chronic moisture and maceration, the protective barrier fails, and the risk of acute periungual infection increases substantially. This barrier function is central to the pathogenesis of acute paronychia, where breakdown of the nail fold–nail plate interface allows inoculation of pathogens into periungual tissues.

The nail bed, also considered a constituent of the perionychium, lies deep to the nail plate and is divided into two functionally distinct regions: the germinal matrix and the sterile matrix.[10] The germinal matrix is particularly significant because it is responsible for generating the majority of the nail plate through a process described as gradient parakeratosis.[11] Anatomically, the germinal matrix is located proximally, deep to the eponychial fold, and extends distally to the lunula—the pale, crescent-shaped region that may be visible through the nail plate in many individuals. Injury or infection involving the germinal matrix can therefore have long-term consequences for nail growth, potentially resulting in ridging, splitting, or permanent deformity of the nail plate. Distal to the lunula lies the sterile matrix, which is darker in appearance and has the primary role of strengthening and anchoring the nail plate to the underlying tissues. The sterile matrix contributes to adherence and structural stability; therefore, inflammation or disruption in this region can contribute to nail plate lifting (onycholysis), pain, and increased vulnerability to further infection. In the context of acute paronychia, the anatomy of the perionychium explains both the typical presentation and the potential patterns of abscess spread. Early infection commonly begins at one side of the nail, with localized inflammation of the lateral nail fold. When an abscess forms, initial fluctuance is often unilateral at the paronychium, reflecting a localized collection in the lateral fold. However, the periungual tissues are contiguous, and infection can progress beyond the initial compartment, spreading proximally to involve the eponychium, across to the contralateral paronychium, or deeper to involve the nail bed beneath the nail plate. This potential for extension is clinically important because it influences both the urgency of intervention and the complexity of drainage. When multiple components of the periungual tissues are involved, the condition is more precisely described as a paronychial infection, reflecting a broader infection of the nail unit rather than a localized inflammation limited to a single fold.[6] From a procedural standpoint, broader involvement can imply deeper collections, greater tissue tension, and increased risk of nail bed involvement, which may require a modified drainage approach and closer follow-up to prevent long-term nail changes.

The physiology of the distal digit also shapes the clinical consequences of delayed or inadequate management. The fingertip and nail unit are highly vascular, which can support healing but also contributes to pronounced inflammatory swelling and pain. The compact nature of periungual tissues means that even small abscesses can generate significant pressure, producing throbbing pain and functional limitation. If an abscess is left untreated, pressure and infection can extend into adjacent structures, leading to clinically significant sequelae. Potential complications include disruption of normal nail growth if the germinal or sterile matrix is affected, formation of a felon if infection spreads into the pulp compartments of the distal phalanx, osteomyelitis of the distal phalanx when infection extends to bone, and more extensive soft tissue infection manifesting as cellulitis or tracking lymphangitis.[6] These complications underscore why early recognition of abscess formation and timely drainage are central to safe care pathways. In nursing practice, monitoring for escalating erythema, proximal streaking, increased swelling, worsening pain, systemic symptoms, or decreased range of motion is essential because these signs may indicate deeper involvement or progression beyond a simple periungual abscess. Overall, the distal digit and nail unit represent a specialized anatomic region in which the nail plate provides mechanical support and tactile enhancement,[6] the perionychium provides a critical barrier system through its lateral, distal, and proximal seals, and the nail bed matrices sustain nail growth and adherence through distinct physiologic roles.[10][11] Acute paronychia exploits weaknesses in this barrier, and abscess formation may spread from a localized paronychial collection to involve other periungual compartments, potentially leading to functional impairment and serious complications if not appropriately managed.[6]

Indications

Drainage of acute paronychia is indicated when clinical assessment demonstrates a well-defined periungual abscess or when symptoms fail to improve despite appropriately selected conservative therapy, most commonly oral antibiotics with close follow-up.[5] [Level 5] The central indication is therefore the presence of a localized collection of pus that is unlikely to resolve with antimicrobials alone because abscess cavities represent relatively avascular spaces in which antibiotic penetration is limited and in which bacterial burden remains high until source control is achieved. Clinically, a well-defined abscess is suggested by fluctuance, a boggy tender swelling of the lateral or proximal nail fold, visible purulence at the paronychial margin, or ballotable pus beneath the nail plate. The digital pressure test has also been described as supportive of abscess presence when blanching is induced around the nail by pressure applied to the volar fingertip.[8] In practice, drainage

is most strongly indicated when the patient's pain is escalating, swelling is increasing, and a focal point of maximal tenderness and fluctuance is present, as these features collectively suggest a contained purulent collection under pressure. Early procedural drainage in such cases provides rapid analgesic benefit through decompression and reduces the risk of proximal spread into the eponychium, contralateral fold, or nail bed. Failure of conservative treatment is a second key indication and should be interpreted in a clinically time-sensitive manner. Conservative management may be appropriate in early paronychia without a clear abscess, particularly when inflammation is mild and localized. However, if symptoms persist or worsen after a short interval of observation and antibiotic therapy—especially if cellulitis expands, pain becomes throbbing, or fluctuation develops—procedural drainage becomes indicated.[5] [Level 5] This is particularly important in patients with risk factors for complicated infection, such as diabetes with poor glycemic control, immunosuppression, peripheral vascular compromise, or recurrent periungual infections, where progression may be faster and the threshold for drainage lower. In such populations, drainage may be indicated earlier because delayed source control increases the risk of deeper extension, including development of felon, osteomyelitis of the distal phalanx, or tracking lymphangitis. Importantly, the indication for drainage also incorporates functional impact: when pain and swelling significantly impair hand function or occupational activities, or when the patient cannot tolerate ongoing symptoms, drainage is commonly the most definitive therapeutic step. From a nursing perspective, clear documentation of fluctuance, extent of erythema, neurovascular status, and functional limitation strengthens clinical decision-making and facilitates safe escalation.

Contraindications

There are no absolute contraindications to drainage of acute paronychia when a true abscess is present, because untreated closed-space infections in the hand can progress to serious complications.[5] [Level 5] Instead, clinicians should consider relative contraindications and safety factors that influence procedural planning, choice of anesthetic technique, and the appropriate setting for intervention. The most important principle is not to avoid drainage altogether, but to ensure that drainage is performed safely, with appropriate expertise and support. General considerations typical of local anesthetic procedures on the hand apply. Anticoagulant or antiplatelet use may increase bleeding risk, but this rarely precludes drainage; rather, it necessitates careful hemostasis planning, readiness to manage oozing, and clear post-procedure wound care instructions. Similarly, poorly controlled diabetes may increase infection severity, delay healing, and raise the risk of recurrence. In diabetic patients, drainage may still be indicated but should be coupled with glycemic assessment and follow-up, and clinicians may lower the threshold for culture sampling and antibiotic therapy depending on the severity of surrounding cellulitis. Other patient factors that influence procedural suitability include impaired cooperation, severe anxiety, needle phobia, or developmental conditions that make safe completion difficult in an outpatient setting. In such cases, drainage is not contraindicated, but the environment and personnel support may need to be escalated, including the use of additional staff for stabilization and distraction or, when necessary, procedural sedation or general anesthesia in an appropriate facility. Another important diagnostic "contraindication" is the presence of herpetic whitlow, which can mimic paronychia but is characterized by vesicular lesions and typically should not be incised unless there is convincing evidence of concurrent bacterial abscess.[2] Although this is not a contraindication to paronychia drainage per se, it is a contraindication to incision in a viral infection mistakenly assumed to be bacterial. Therefore, careful inspection for vesicles, disproportionate pain, and relevant exposure history is essential before proceeding. In summary, drainage is generally feasible and appropriate when indicated, but clinicians must weigh bleeding risk, infection risk modifiers, patient cooperation, and diagnostic certainty to ensure safe practice.

Equipment

Effective and safe drainage of acute paronychia requires a focused set of equipment to maintain asepsis, achieve adequate anesthesia, access the abscess cavity with precision, irrigate the wound, and provide appropriate dressing and sampling. Personal protective equipment is required to protect both the patient and provider, including a mask, eye protection, and sterile gloves, as periungual abscesses may drain under pressure and generate splash risk. Skin preparation should be performed with a suitable antiseptic solution such as chlorhexidine or povidone-iodine, followed by placement of a sterile drape to establish a controlled field. Because paronychia is often intensely painful, equipment for a digital nerve block is typically necessary, including a 10 mL syringe, a 25–27 gauge needle, and a local anesthetic agent such as 1% lidocaine with epinephrine, when clinically appropriate. A finger tourniquet may be used optionally to improve visualization, particularly when epinephrine is not used or when bleeding limits procedural accuracy. For drainage access, a scalpel blade (commonly number 11 or 15) is used for controlled incision, while a 21–23 gauge needle can be useful for gentle lifting of the nail fold, drainage of small collections, or aspiration for microbiology. Fine scissors—ideally tenotomy scissors—support delicate dissection when needed to break loculations or release small tissue planes without excessive trauma. Small forceps facilitate handling of the nail fold or peel edges,

while a nail elevator device (such as a Freer elevator or Mitchell trimmer) can be useful if partial nail plate elevation or removal is required to access subungual pus. Irrigation supplies, commonly normal saline with or without an antiseptic adjunct based on local practice, support cleansing of the cavity after evacuation. Dressing materials should include a nonadherent interface dressing (such as silicone-based products), gauze, and a digital wrap to protect the site while minimizing maceration. Finally, microbiology sampling equipment, including a sterile swab or a small syringe for fluid collection, should be available when culture is clinically indicated, such as in recurrent infection, immunocompromise, severe cellulitis, or concern for resistant organisms.

Personnel

Drainage of acute paronychia is a relatively contained procedure that can often be completed by a single appropriately trained clinician, such as an emergency medicine physician, primary care physician, nurse practitioner, or surgeon, depending on local scope of practice and institutional protocols. The key personnel requirement is procedural competence in hand assessment, digital anesthesia techniques, incision and drainage principles, and post-procedure wound management. Nursing support, when available, enhances safety and efficiency through preparation of sterile equipment, assistance with positioning, patient reassurance, monitoring for vasovagal responses, and reinforcement of discharge instructions. In many clinical environments, nurses also document pre- and post-procedure neurovascular status and pain scores, which strengthens both clinical safety and medicolegal quality. Additional staff may be required when patient cooperation is limited. Children, particularly young children, may have difficulty tolerating digital injections and the sensation of drainage even under local anesthesia. Similarly, patients with autism spectrum disorder, developmental delay, severe anxiety, or behavioral dysregulation may be unable to remain still, creating risk of accidental injury to periungual structures or incomplete drainage. In such circumstances, additional personnel may assist through distraction techniques, gentle stabilization, and therapeutic communication. If safe completion remains doubtful, escalation to a setting where procedural sedation or general anesthesia can be administered may be necessary. The decision to involve additional staff should be proactive rather than reactive; anticipating the need for support improves the likelihood of a calm procedure, reduces procedural time, and can minimize tissue trauma. When infection is extensive, recurrent, or complicated—such as suspected felon, tendon sheath involvement, or deep space infection—referral to hand surgery and a broader team approach may be required to ensure comprehensive management.

Preparation

Preparation for paronychia drainage begins with informed consent, which should be obtained from the patient or guardian after a clear explanation of the diagnosis, rationale for drainage, expected benefits, and potential complications. Patients should be informed that drainage aims to evacuate pus, relieve pain, and prevent spread of infection, but that additional interventions—such as partial nail plate elevation or removal—may be necessary depending on the location of the abscess. If nail plate removal is planned or likely, counseling should include the anticipated timeline for nail regrowth, with many patients achieving full regrowth within approximately three to four months.[12] This anticipatory guidance is important because nail appearance changes can be distressing if unexpected, and clear counseling improves satisfaction and adherence to wound care. Consent should also include discussion of risks such as bleeding, persistent infection, pain, need for repeat drainage, scarring, nail dystrophy, and rare progression to deeper infection, with reassurance that careful technique and follow-up reduce these risks. The procedural field should then be prepared using an antiseptic solution and sterile draping. Because periungual tissues are highly sensitive and inflamed, adequate analgesia is essential, and a digital block is typically required to allow complete drainage and inspection of the cavity without patient movement. A local anesthetic such as 1% lidocaine with epinephrine can be safely used in healthy individuals, and the vasoconstrictive effect of epinephrine can reduce bleeding and improve visualization, which many clinicians prefer over routine tourniquet use.[13] The reduced bleeding can be particularly advantageous in nail fold procedures where the operative field is small and minor oozing can obscure tissue planes. Nonetheless, hemostasis planning should be individualized. A digital tourniquet may be advisable when plain lidocaine is used, and it may also be employed selectively when lidocaine with epinephrine is used but bleeding remains problematic. The purpose of a tourniquet is to provide a relatively bloodless field to facilitate accurate incision placement, minimize tissue trauma, and ensure complete evacuation of purulence. When using a tourniquet, nursing monitoring is important to ensure appropriate placement, limited duration, and patient comfort, as prolonged tourniquet time can cause ischemic discomfort. Finally, preparation should include a brief pre-procedure safety check: confirm the correct digit, assess baseline neurovascular status (capillary refill, sensation, range of motion), review allergy history to anesthetics or antiseptics, review anticoagulant use, and ensure that aftercare supplies and follow-up plans are in place. A clear plan for wound dressing, pain control, and indications for urgent reassessment—such as worsening swelling, spreading erythema, fever, numbness, or reduced finger motion—should be

established before the procedure begins, ensuring that post-procedure care is as deliberate and structured as the drainage itself.

Technique or Treatment

The procedural management of acute paronychia is fundamentally a source-control intervention: the aim is to decompress purulence, reduce microbial load, relieve tissue pressure, and restore the integrity of periungual soft tissues so that inflammation can resolve and normal function can return. Although there is no universally standardized technique for drainage, the operative approach is typically individualized according to the anatomic compartment involved and the extent of pus accumulation.[5] In practice, clinicians classify abscess patterns into collections confined to the lateral paronychial fold, collections extending proximally into the eponychium, and collections that track beneath the nail plate into the nail bed as subungual abscesses. This anatomic framework is clinically useful because each pattern carries different procedural access requirements, different risks to the nail unit structures, and different implications for recurrence if decompression is incomplete. Across all approaches, the principles of asepsis, adequate analgesia (most often via digital nerve block), gentle tissue handling, and post-procedure wound protection are essential to optimize outcomes and minimize morbidity. When the abscess is limited to the paronychial fold alone—typically the lateral nail fold—drainage may be achieved through decompression of the potential space between the nail plate and the swollen nail fold. In such cases, rather than a large incision, clinicians may use a controlled elevation technique by placing a suitable instrument into the sulcus between the lateral nail fold and the nail plate, thereby opening the space and allowing purulent material to egress.[14][15] This method is attractive because it can achieve adequate decompression with minimal disruption of periungual tissues and minimal scarring. The technique may be performed with a blunt instrument such as a nail elevator, which reduces the risk of inadvertent laceration of the nail bed. However, depending on clinician preference and the firmness of the tissues, a sharp instrument—such as a scalpel tip, fine scissors, or a bevel-up 21–23 gauge needle—may also be used. The critical technical safety element is that the instrument should be directed away from the nail bed.[14][15] This directional control reduces the risk of injuring the sterile matrix, which can compromise nail adherence and lead to postoperative pain or nail dystrophy. In nursing-supported environments, meticulous positioning and stabilization of the digit, along with reassurance and monitoring for vasovagal responses, help the clinician maintain fine motor control during this delicate maneuver.

Abscesses that involve the eponychium—within or deep to the proximal nail fold—often require a slightly different approach, typically involving elevation of the eponychial fold in a transverse plane. Small eponychial collections may be decompressed by lifting the proximal fold using a similar gentle elevation technique, followed by a limited incision placed at the most fluctuant point if necessary to permit drainage.[6] The decision to use a limited incision versus fold elevation alone is influenced by the size of the collection, the degree of tissue tension, and whether pus drains freely once the fold is lifted. The procedural goal remains maximal decompression with minimal tissue trauma. In very small collections, overly aggressive incision may create unnecessary pain and swelling, whereas insufficient access may leave pus trapped, prolonging symptoms and increasing recurrence risk. Therefore, careful palpation to identify the point of maximal fluctuance is an essential pre-incision step. In more extensive eponychial or combined eponychial–paronychial abscesses, clinicians must also assess whether infection has extended beneath the nail plate. Large, tense, fluctuant swellings, especially when pain is severe and appears deep rather than superficial, should prompt suspicion of nail bed involvement. This assessment is not merely diagnostic; it determines whether nail plate removal is needed to achieve adequate drainage and avoid persistent infection. When pus is present beneath the nail plate—forming a subungual abscess—complete nail plate removal is generally recommended to ensure full decompression.[1] The logic is straightforward: subungual pus cannot reliably be evacuated through a lateral fold opening alone if the nail plate remains adherent to the nail bed, because the rigid nail structure can trap purulent material in a closed compartment. Complete nail plate removal is typically performed by using an elevator device to release adherence at the margins of the nail plate, including separation from the eponychial and paronychial folds, followed by gentle elevation of the plate off the nail bed.[1] In the setting of infection, adherence is often already loosened by inflammation and tissue edema; therefore, the nail plate may detach more easily than in noninfected conditions, allowing removal with gentle traction. When needed, forceps or a needle holder can be used to grasp the nail plate and remove it with a controlled rolling motion in the transverse direction, which helps maintain even force distribution and reduces the risk of sudden tearing of the nail bed. A practical advantage of complete nail plate removal is that it provides the clinician with full visualization of the nail bed, enabling confirmation that purulence has been evacuated and allowing assessment for nonviable tissue requiring debridement.

Complete nail removal has been described as a relatively straightforward and teachable procedure that achieves maximal decompression while maintaining low morbidity.[1] This approach is often favored over partial nail removal for subungual abscess because partial removal can leave undrained

pockets of pus, particularly if the abscess extends beyond the partially removed segment, and because partial techniques may be more technically challenging, increasing the risk of uneven nail bed trauma. Although some clinicians advocate partial nail plate removal, concerns include incomplete decompression and lack of strong evidence that partial removal yields superior outcomes.[1][2] A common practical concern among patients and some clinicians is whether complete removal will lead to abnormal nail regrowth. Evidence from nail trauma contexts suggests that the vast majority of nails regrow without significant deformity, typically within three to four months after surgical removal.[12] This expectation is clinically important for patient counseling and for nursing education at discharge, as reassurance regarding regrowth timelines can improve acceptance of the procedure and adherence to aftercare recommendations. Microbiological sampling is an important procedural step, particularly when antibiotic selection must be optimized or when resistant organisms are suspected. In all cases of paronychial drainage, sampling may be obtained either by swab or, preferably, by aspirating fluid with a syringe, and sent for culture and sensitivity testing. While swabs are convenient, fluid sampling can yield a more representative specimen of the infected collection and may improve microbiologic accuracy. Sampling should be performed after adequate exposure of purulence but before extensive irrigation, to avoid dilution and false-negative results. Culture data are particularly valuable in patients with recurrent paronychia, immunocompromise, severe cellulitis, prior antibiotic exposure, or known high MRSA prevalence, where empiric therapy may be uncertain and targeted therapy improves stewardship.

After the abscess cavity is opened and pus evacuated, the procedure should include thorough irrigation and, when indicated, debridement of nonviable tissue. Debridement should be conservative and limited to clearly necrotic material, as excessive tissue removal can compromise periungual structures and prolong healing. Irrigation with saline is commonly recommended, and some practices add a disinfectant solution depending on local protocols. The purpose of irrigation is to reduce residual bacterial load, remove debris, and ensure the cavity is free of thick purulence that could perpetuate infection. Once hemostasis is adequate, the wound is dressed. Digital dressings typically involve a nonadherent interface layer to prevent adhesion to the wound, followed by gauze and a protective digital bandage. Dressing selection should balance protection with avoidance of excessive occlusion; overly tight or bulky wraps can compromise circulation or increase maceration. Nursing care at this stage is pivotal: confirming capillary refill, assessing sensation, and ensuring the dressing is secure but not constricting are core safety steps before discharge. Post-procedure disposition is guided by complication risk and the presence of systemic or spreading infection. Most patients can be discharged home after uncomplicated drainage, provided they have clear instructions and timely follow-up. Hospital admission is generally reserved for cases with significant cellulitis, tracking lymphangitis, suspected osteomyelitis, or other major complications requiring intravenous antibiotics, imaging, or surgical consultation. Antibiotic prescribing after drainage remains a nuanced decision. Many clinicians prescribe oral antibiotics for approximately seven to ten days, particularly when there is surrounding cellulitis, immunocompromise, systemic symptoms, or high-risk exposure patterns.[16] However, it has been argued that antibiotics may not be necessary if the abscess has been completely drained and there is minimal cellulitis, reflecting the central role of source control in superficial abscess management.[16] In settings where antibiotics are prescribed, culture results should be reviewed to confirm sensitivity, and therapy should be adjusted if resistance is identified.

Follow-up is not optional; it is a safety requirement that ensures ongoing infection control and early detection of recurrence or complications. A common review interval is 48 to 72 hours for wound cleansing and dressing change, assessment of symptom improvement, and review of culture results.[16] During follow-up, clinicians should reassess pain, swelling, range of motion, and signs of proximal spread. Patients should also receive clear safety-net advice to seek urgent care if they develop fever, worsening redness, red streaking up the hand or arm, increasing swelling, numbness, severe throbbing pain suggesting deeper infection, or reduced finger mobility. From a nursing perspective, discharge education should emphasize hand hygiene, avoidance of nail trauma, protection of the dressing, and adherence to prescribed antibiotics when indicated, while also addressing behavioral triggers such as nail-biting to reduce recurrence risk. In this way, technique and aftercare form a continuous therapeutic pathway: an anatomically appropriate drainage approach achieves immediate decompression, while culture-guided therapy and structured follow-up consolidate healing and prevent escalation.

Complications

Complications following surgical drainage of acute paronychia are generally uncommon, particularly when the abscess is clearly identified, adequate anesthesia permits thorough evacuation, and post-procedure follow-up is arranged. Nevertheless, nurses and clinicians should approach paronychia drainage as a hand procedure with meaningful functional implications, and patients should be counseled appropriately during consent regarding both general and procedure-specific risks. General

risks include pain, bleeding, infection, and scarring. Pain is expected to some degree due to inflammatory tissue sensitivity and procedural manipulation; however, persistent or escalating pain after the immediate post-procedure period may indicate incomplete drainage, deep space extension, or the development of a complication such as felon or osteomyelitis. Bleeding is usually minor and self-limited, but it may be more pronounced in patients taking anticoagulants or antiplatelet agents, in those with vascular fragility, or when inflamed tissues ooze diffusely. Infection as a complication typically refers to either persistence of the original infection despite intervention or secondary infection due to contamination or inadequate wound care. Scarring is generally minimal in periungual procedures, but cosmetically noticeable changes can occur, especially after extensive tissue swelling, repeated interventions, or delayed healing. Procedure-specific complications include recurrence or persistence of infection, incomplete drainage, damage to surrounding structures, and abnormal nail growth. Recurrence or persistence may occur when the abscess cavity is not fully decompressed—particularly if infection extends beneath the nail plate and nail removal is not performed when indicated—or when locates locations prevent complete evacuation. Persistence can also occur due to antimicrobial resistance if antibiotics are prescribed and are ineffective against the causative organism, and this risk is increased in immunosuppressed patients who have reduced capacity for local immune clearance.[9] When infection persists, the consequences can extend beyond local discomfort and cosmetic issues to clinically significant sequelae. Ongoing purulence may track into the fingertip pulp space, resulting in a felon, or may spread into the surrounding soft tissues, producing cellulitis or tracking lymphangitis. In delayed or severe cases, infection can extend to bone, leading to osteomyelitis of the distal phalanx, a complication that typically requires prolonged antimicrobial therapy and specialist management. Systemic spread is rare but possible, particularly in high-risk patients, and may progress to sepsis if the infection is extensive and untreated. For this reason, careful post-procedure safety-netting is essential, and nurses should emphasize the importance of urgent reassessment if fever, worsening erythema, proximal streaking, increasing swelling, or new neurovascular symptoms occur.

Damage to surrounding structures is uncommon but remains a relevant risk because the periungual region contains the nail bed and matrix tissues that govern nail growth and adherence. Iatrogenic injury can occur if sharp instruments are directed toward the nail bed during fold elevation or if excessive force is used during nail plate removal. Such injury may lead to prolonged pain, delayed healing, or nail plate adherence problems. Abnormal nail growth is generally uncommon and is more frequently a consequence of the infection itself—particularly when the germinal matrix is involved—rather than an effect of drainage alone. However, abnormal regrowth can occasionally be iatrogenic if the matrix is damaged during intervention. In practice, most nails regrow without significant deformity, but patients should be informed that temporary ridging or irregularity may occur during regrowth, and persistent deformity, while rare, is possible in severe infections or repeated episodes. Overall, complication prevention depends on accurate assessment of the abscess extent, complete drainage, appropriate antibiotic use when indicated, and structured follow-up.

Clinical Significance

Paronychia is a clinically significant condition because it is both common and potentially function-limiting, affecting children and adults across primary care, emergency department, urgent care, and surgical settings. The infection impacts a highly functional anatomical region: even a small periungual abscess can produce disproportionate pain and impair fine motor tasks, occupational performance, and self-care activities. In many cases, acute paronychia begins as localized inflammation after minor trauma or cuticle disruption, and early presentations without an abscess can often be managed conservatively with appropriate antimicrobial coverage, symptom control, and close monitoring. However, once pus has accumulated and a well-defined abscess is present, the clinical significance escalates because source control becomes necessary. At that stage, continued reliance on antibiotics alone may delay definitive management and increases the risk of extension into deeper structures of the digit. The key clinical inflection point is therefore abscess formation. A fluctuant, boggy, tender swelling of the nail fold—or evidence of subungual pus—signals a closed-space infection that generally requires drainage for resolution. Procedural drainage rapidly reduces pain through decompression, decreases bacterial burden, and accelerates recovery, often allowing patients to return to function more quickly than conservative management alone. From a broader safety perspective, timely drainage also helps prevent progression to felon, cellulitis, lymphangitis, and osteomyelitis—complications that are less common but substantially more morbid when they occur. In pediatric populations, clinical significance is amplified by the frequency of nail-biting and finger-sucking behaviors, which can contribute to polymicrobial infection and recurrent episodes. In adults, occupational exposures, manicures, and repetitive microtrauma can drive both initial infections and recurrence. The condition therefore has relevance not only as an acute infection but also as a preventable problem connected to behavioral and environmental factors. For nursing, paronychia carries particular significance because nurses often

identify the condition early during triage, assess severity, evaluate neurovascular status, provide analgesia support, and educate patients about wound care and recurrence prevention. Nurses also play a decisive role in recognizing red flags that necessitate escalation, such as rapidly spreading erythema, proximal streaking, systemic symptoms, immunocompromise, or disproportionate pain that could suggest deeper infection or alternative diagnoses. After drainage, nursing oversight is critical in ensuring dressing integrity, monitoring for circulation compromise, reinforcing hand hygiene and activity modification, and ensuring follow-up for dressing changes and culture review. Thus, paronychia is clinically significant not only because it is common, but because safe outcomes depend on accurate staging, timely drainage when indicated, and coordinated follow-up care.

Enhancing Healthcare Team Outcomes

Optimizing outcomes in acute paronychia requires coordinated, interprofessional care that begins with accurate clinical staging and continues through definitive drainage, microbiology review, and follow-up. In many settings, paronychia drainage can be performed by emergency medicine physicians, primary care providers, surgeons, urgent care clinicians, physician assistants, or nurse practitioners. While the techniques described are generally straightforward and associated with few complications, achieving consistently good outcomes depends on adequate experience and clinical judgment—particularly the ability to identify the true extent of the abscess and recognize when infection extends beneath the nail plate or into adjacent compartments, necessitating modified drainage strategies.[5] Underestimating abscess extent can lead to incomplete decompression and recurrence; overestimating it can result in unnecessary tissue disruption. For this reason, team performance improves when clinicians follow a structured assessment approach, document key findings such as fluctuance, suspected subungual involvement, and neurovascular status, and apply clear criteria for escalation or referral. When diagnostic uncertainty exists, when there is no response to initial management, or when deeper infection is suspected, referral to an appropriate tertiary hand surgery service is advisable. This is particularly relevant in patients with possible felon, suspected osteomyelitis, extensive cellulitis, immunosuppression, or recurrent infections where underlying nail pathology or behavioral factors may require broader management. Even in uncomplicated cases, adequate follow-up arrangements are essential. Many infections resolve promptly after drainage, but early re-evaluation—often within 48 to 72 hours—supports dressing changes, wound cleansing, and timely adjustment of antibiotics if culture results indicate resistance. Understanding the clinical course, recognizing early complications, and actively reviewing microbiology results are therefore central to reducing morbidity and preventing treatment failure.[7]

Nursing contributions are pivotal across this pathway. Nurses facilitate safe procedural care by preparing sterile equipment, assisting with patient positioning, monitoring pain and anxiety, and documenting baseline and post-procedure circulation and sensation. After discharge, nursing-led education reinforces wound care, adherence to prescribed antibiotics when indicated, recognition of red flags, and prevention measures such as avoiding nail trauma and managing nail-biting behaviors. Pharmacists contribute by supporting antibiotic selection aligned with local resistance patterns and ensuring dosing safety, particularly in children, pregnant patients, or those with comorbidities. Where available, hand therapists or occupational therapists may assist if stiffness or functional limitation persists after infection resolution. Communication between these roles is essential: clear handoffs regarding culture pending, follow-up timing, dressing instructions, and escalation criteria reduce fragmented care and support better outcomes. Ultimately, high-quality care for paronychia is achieved when the team aligns around shared goals: accurate diagnosis, complete drainage when indicated, appropriate antimicrobial stewardship, and structured follow-up with patient-centered education. Interprofessional collaboration and open communication—among clinicians, mid-level practitioners, and nursing staff—reduce complications and improve patient experience by ensuring that no element of the care continuum is overlooked.

Conclusion:

Acute paronychia represents a clinically significant infection due to its potential to impair hand function and cause severe pain despite its superficial location. While early-stage inflammation may respond to conservative measures, the development of a periungual abscess marks a critical point where procedural drainage becomes essential for effective source control. Delayed or inadequate intervention can lead to complications such as felon, cellulitis, lymphangitis, or osteomyelitis, underscoring the importance of timely management. Nursing professionals are central to this process, from initial triage and recognition of abscess formation to procedural preparation and post-drainage care. Their role extends beyond technical assistance to encompass patient education on wound care, behavioral modification (e.g., avoiding nail-biting), and adherence to follow-up. Structured interprofessional collaboration further enhances outcomes by ensuring accurate diagnosis, complete drainage, appropriate antimicrobial stewardship, and continuity of care. Ultimately, successful management of acute paronychia hinges on

integrating anatomical knowledge, clinical judgment, and coordinated team efforts. By emphasizing early detection, safe drainage techniques, and comprehensive aftercare, healthcare providers can minimize morbidity, prevent recurrence, and preserve hand function—transforming a common infection into a manageable condition with predictable recovery.

References:

[1] Ong YS, Levin LS. Hand infections. Plastic and reconstructive surgery. 2009 Oct:124(4):225e-233e. doi: 10.1097/PRS.0b013e3181b458c9.

[2] Lomax A, Thornton J, Singh D. Toenail paronychia. Foot and ankle surgery : official journal of the European Society of Foot and Ankle Surgeons. 2016 Dec:22(4):219-223. doi: 10.1016/j.fas.2015.09.003.

[3] Koshy JC, Bell B. Hand Infections. The Journal of hand surgery. 2019 Jan:44(1):46-54. doi: 10.1016/j.jhsa.2018.05.027.

[4] Brook I. Paronychia: a mixed infection. Microbiology and management. Journal of hand surgery (Edinburgh, Scotland). 1993 Jun:18(3):358-9

[5] Ritting AW, O'Malley MP, Rodner CM. Acute paronychia. The Journal of hand surgery. 2012 May:37(5):1068-70; quiz page 1070. doi: 10.1016/j.jhsa.2011.11.021.

[6] Shafritz AB, Coppage JM. Acute and chronic paronychia of the hand. The Journal of the American Academy of Orthopaedic Surgeons. 2014 Mar:22(3):165-74. doi: 10.5435/JAAOS-22-03-165.

[7] Rigopoulos D, Larios G, Gregoriou S, Alevizos A. Acute and chronic paronychia. American family physician. 2008 Feb 1:77(3):339-46

[8] Turkmen A, Warner RM, Page RE. Digital pressure test for paronychia. British journal of plastic surgery. 2004 Jan:57(1):93-4

[9] Jebson PJ. Infections of the fingertip. Paronychias and felons. Hand clinics. 1998 Nov:14(4):547-55, viii

[10] Fassler PR. Fingertip Injuries: Evaluation and Treatment. The Journal of the American Academy of Orthopaedic Surgeons. 1996 Jan:4(1):84-92

[11] Zook EG. Anatomy and physiology of the perionychium. Hand clinics. 1990 Feb:6(1):1-7

[12] Greig A, Gardiner MD, Sierakowski A, Zweifel CJ, Pinder RM, Furniss D, Cook JA, Beard D, Farrar N, Cooper CD, Jain A, NINJA Pilot Collaborative. Randomized feasibility trial of replacing or discarding the nail plate after nail-bed repair in children. The British journal of surgery. 2017 Nov:104(12):1634-1639. doi: 10.1002/bjs.10673.

[13] Lalonde DH. Discussion: Wide-Awake Surgical Management of Hand Fractures: Technical Pearls and Advanced Rehabilitation. Plastic and reconstructive surgery. 2019 Mar:143(3):811-812. doi: 10.1097/PRS.0000000000005380.

[14] Rockwell PG. Acute and chronic paronychia. American family physician. 2001 Mar 15:63(6):1113-6

[15] Ogunlusi JD, Oginni LM, Ogunlusi OO. DAREJD simple technique of draining acute paronychia. Techniques in hand & upper extremity surgery. 2005 Jun:9(2):120-1

[16] Pierrart J, Delgrande D, Mamane W, Tordjman D, Masmejean EH. Acute felon and paronychia: Antibiotics not necessary after surgical treatment. Prospective study of 46 patients. Hand surgery & rehabilitation. 2016 Feb:35(1):40-3. doi: 10.1016/j.hansur.2015.12.003.