Clinical Practice Guideline: **Nail Unit Biopsy**

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Product: **Specialty**

GUIDELINES

American Specialty Health – Specialty (ASH) considers services consisting of CPT Code 11755 to be medically necessary for biopsy of the nail unit **if used for the diagnosis of at least one of the following conditions:**

1. ***Squamous cell carcinoma, Bowen's disease***: Hyperkeratosis, dyschromia, onycholysis, destruction of the nail plate (Carcinoma in situ of skin of other sites and unspecified [ICD-10 codes D04.8 – D04.9])
2. ***Keratoacanthoma***: Multiple or solitary, nail plate destruction, mass, erosion, granulation tissue, with or without pain (Other specified epidermal thickening (ICD-10 code L85.8) or other benign neoplasm of skin, unspecified [D23.9])
3. ***Melanoma***: Pigmentation of the nail bed, erosion, destruction of the nail plate (Malignant melanoma of skin, unspecified [C43.9])
4. ***Basal cell carcinoma***: Rare, variable clinical appearance (Basal cell carcinoma of skin, unspecified [C44.91])
5. ***Pyogenic granuloma***: Exuberant friable mass (ICD-10 code L98.0)
   - Needs to be distinguished from amelanotic melanoma
6. ***Glomus tumor***: Spontaneous pain, blue–red mass (Hemangioma unspecified site (D18.00))
7. ***Epidermoid cyst***: Mass, nail plate deformity (ICD-10 code L72.0)
8. ***Fibroma***: Mass, elevation, distortion of the nail (if presses on matrix, distal groove; if underneath nail plate, elevation of plate) (Benign neoplasm of connective and other soft tissue, unspecified [ICD-10 code D21.9])
9. ***Metastatic carcinomas***: Mass, pseudo-clubbing, nail dystrophy, dusky red color, with or without pain (Secondary malignant neoplasm of unspecified site [C79.9])
10. ***Kaposi sarcoma***: Pigmentation, elevation, destruction of the nail plate (ICD-10 code C46.0)
11. ***Warts***: Verrucous mass, sometimes painful, nail plate deformity or destruction (Plantar, other, and unspecified warts [B07.0, B07.8 – B07.9])
    - Must distinguish from verrucous or squamous cell carcinoma
12. ***Subungual scabies***: Hyperkeratosis of hyponychium (ICD-10 code B86)
13. ***Psoriasis***: Onycholysis, hyperkeratosis, splinter hemorrhages, oil drop discoloration (Other and unspecified psoriasis [L40.8 – L40.9])
14. ***Lichen planus***: Violaceous discoloration, atrophy of nail bed; if nail matrix is involved, trachyonychia, hapalonychia (soft nails), dorsal pterygium (Other and unspecified lichen planus [L43.8 – L43.9])

15. ***Hemorrhage, trauma***: Red violet to black discoloration under nail plate; persistent or non-migrating discoloration (Other nail disorders [L60.8])
    - Needs to be distinguished from melanoma

This code is not appropriate for routine nail trimming/focal excision of nail plate/subungual debris for simple fungal culture specimen.

CPT Codes and Descriptions

CPT® Code	CPT® Code Description
11755	Biopsy of nail unit (e.g., plate, bed, matrix, hyponychium, proximal and lateral nail folds) (separate procedure)

BACKGROUND

Inflammatory or infectious conditions that affect the nail can have a marked impact on a patient's quality of life. A wide-ranging variety of tumors can also develop in this region and may be life-threatening or require surgery that will result in functional defects. The nail biopsy is a useful technique to obtain a diagnosis of a clinically ambiguous nail condition that is not diagnosable by history, clinical appearance, and routine mycology. Within the context of this clinical practice guideline, nail unit biopsy is performed for the purpose of defining subungual and periungual masses, nail disorders, and pigmented streaks.

Patient selection is important as nail biopsy needs to be performed only for a patient in whom the diagnosis has not been forthcoming due to the absence of typical skin lesions or histopathology, as skin biopsy is always a safer and easier procedure than nail biopsy. Patients with diabetes, peripheral vascular disease, or arterial insufficiency are at higher risk of developing complications after nail surgery, and the use of nail biopsy should therefore be more conservative in these groups (Martin et al., 2013; Grover et al., 2012). Before performing a nail biopsy, it is important to discuss with the patient the potential benefits and risks of the procedure and address the patient's concerns about pain or scarring.

The various types of nail biopsies include excision biopsy, punch biopsy, or longitudinal biopsy. A punch or an excision biopsy can be applied to any individual anatomical part of the nail unit, such as the nail bed, nail plate, nail fold, or matrix. A longitudinal nail biopsy gives maximum histopathological information, but it is not routinely resorted to due to its scarring potential. The nail as a unit is capable of producing a very limited set of clinical reaction patterns, for example onycholysis can be a manifestation of onychomycosis, nail psoriasis, or even nail lichen planus. Therefore, finding a histopathologic cause is generally required prior to initiating specific therapy. The choice of area to be biopsied is important

in that the physician must select the area that will show the histopathological diagnostic changes (e.g., histopathological features such as subungual hyperkeratosis are best represented with nail bed biopsies).

Psoriasis

Psoriasis is probably the dermatosis that most commonly affects the nails. Clinical manifestations of this condition in the nails vary according to the part of the nail affected by the inflammation. Involvement of the proximal matrix, responsible for producing the most superficial part of the nail plate, gives rise to pitting. Psoriasis affecting the hyponychium and nail bed produces oil spots and onycholysis. The accumulation of material over the nail bed leads to ungual hyperkeratosis. Splinter hemorrhages reflect vascular changes that develop in the nail bed. Histologically the changes are similar to those observed in psoriasis plaques on the skin: hyperkeratosis, parakeratosis, psoriasiform epithelial hyperplasia, dilated and tortuous vessels in the papillary dermis, and the presence of neutrophils. However, in contrast to other areas of the skin, the nail commonly shows evidence of spongiosis and serous exudates, and hypergranulosis may be observed.

Lichen Planus

As with psoriasis, lichen planus can affect different parts of the nail unit, and this will determine the clinical manifestations. Focal involvement of the matrix causes partial thinning of the nail plate and produces longitudinal striae. More aggressive disease that affects the entire matrix can give rise to complete nail atrophy. The healing process can provoke pigmentary changes, or even the formation of a pterygium or fusion of the matrix with the proximal nail fold, which permanently blocks nail growth.

Warts

Viral warts develop in those areas of the nail apparatus that possess a granular layer (nail folds and hyponychium) but can enlarge to affect the nail bed and even the matrix. The histology of these lesions is similar to that of warts on other areas of the skin, except in the case of deep plantar warts, which are characterized by thick keratohyaline granules, eosinophilic inclusions, and very marked koilocytosis.

Glomus Tumor

This tumor can affect different regions of the nail apparatus. The signs will vary according to the area affected and may include, for example, presentation as a bluish nodule or as nail dystrophy. These tumors, which are usually painful, are typically single, though multiple tumors have been reported in patients with neurofibromatosis type I. The histology of these lesions reveals a proliferation of cuboidal cells with round basophilic nuclei and eosinophilic cytoplasm that are positive for actin and occasionally for CD34.

Pyogenic Granuloma

This type of granuloma can affect the nail folds, bed, or matrix. Involvement of the matrix will cause nail dystrophy. Clinically, the lesions are exophytic and bleed easily. They may be confused clinically with amelanotic melanomas or squamous cell carcinomas, as well as with a wide variety of benign tumors. The histology of pyogenic granuloma of the nail apparatus is similar to that of lesions at other sites, with a lobular proliferation of capillary vessels embedded in an edematous stroma.

Bowen Disease

In situ squamous cell carcinoma can develop in the periungual tissues or in the epithelium of the nail bed or matrix. Clinical presentation is usually similar to a periungual wart or a disorder of infectious, inflammatory, or traumatic origin. However, atypical manifestations such as nail-plate pigmentation or erythronychia have also been reported. This disease tends to show gradual progression to dermal invasion, and it is therefore advisable to take multiple biopsies from different areas, with evaluation of serial sections of the specimens (Martin et al., 2013).

Subungual Scabies

Subungual scabies limited to the nail unit is quite rare. In the ordinary form of scabies, the nails are not involved but the distal subungual area may represent a reservoir of mites (collected from skin scratching), potential source for small epidemics. The lesions of the Norwegian scabies have a predilection for areas of pressure and are strikingly different from those of ordinary scabies. The characteristic of this condition is the existence of dystrophic nails which are hyperkeratotic and accompanied by large, psoriasis-like accumulations of scales under the nails. Even after successful treatment of the hyperkeratotic lesions on the skin, the dystrophic nails persist.

Basal Cell Carcinoma

Basal cell carcinomas occurring on the periungual area are uncommon and may lead to diagnostic difficulties. Presentation varies from onycholysis, to longitudinal melanonychia, and the most common sign of the disease is ulceration around and of the nail plate.

Malignant Melanoma

The symptoms of subungual melanoma are vague, as are the findings, including discoloration of the nail, a non-healing wound, a mass, a split in the nail, and bleeding from the nail. These lesions can lack pigmentation and appear relatively benign. The pigmentation of the surrounding nail tissue, called Hutchinson's sign, paired with nail lifting is indicative of melanoma. The continued linear growth of dark bands subungually, or longitudinal melanonychia, is indicative of melanoma, especially if it is greater than 3 mm wide or wide at the base with distal tapering.

According to the guideline for the treatment of cutaneous melanoma (Marsden et al., 2010), Biopsies of possible subungual melanomas should be carried out by surgeons regularly doing so. The nail should be removed sufficiently for the nail matrix to be adequately sampled: a clinically obvious tumor should be biopsied if present.

Kaposi's Sarcoma

Kaposi's sarcoma (KS) is a vascular neoplasm of the skin which can also involve any organ. There are several subtypes of KS and have been found to be associated with a virus known as Human Herpesvirus-8. Kaposi's sarcoma is now subdivided into the classical form, an epidemic form mainly seen in Africa, and a subtype seen in acquired immunodeficiency syndrome (AIDS) and other immunodepressions including drug-induced immunosuppression. Histopathologically, they are virtually identical. The classical form, but also the other types very often involve the lower legs and feet. Kaposi's sarcoma often affects the nail folds or even overgrows the nail. Subungual Kaposi's sarcoma was found to cause elevation and deformation of the nail plate. Kaposi sarcoma of the nail region in AIDS patients often appears as a small bruise that may turn brown or violaceous (Haneke et al., 2012).

Fibroma

Large subungual fibromas present as pink papules originating from under the nail plate, which may cause lifting of the nail plate with visible hyperkeratosis. Smaller tumors appear as oval red or white discolorations under the nail. Histologically, these tumors are characterized by an acantholytic epidermis with a thickened horny layer and a stroma containing capillaries surrounded by collagen fibers (Willard et al., 2012).

Keratocanthoma

Characteristically, subungual keratoacanthoma is a rapidly growing (within a period of weeks) and usually painful tumor. Pressure bone erosion presents as an early event. Its diagnosis should be based on the correlation between clinical, radiological, and pathologic findings. Microscopic examination shows a squamoproliferative lesion with a focal crateriform pattern and overlying hyperkeratosis with ortho and parakeratosis. Lobules of squamous epithelium are often well differentiated, composed of large keratinocytes with copious "glassy" eosinophilic cytoplasm. Dyskeratotic cells are numerous, while atypia and mitotic figures are rare. Onycholemmal keratinization (without granular layer) is frequent in the center of the lobules (Andre et al., 2013).

Epidermoid Cyst

Epidermal cysts are benign cystic lesions caused by the proliferation of epidermal cells within a circumscribed region in the dermis. These may occur as single cysts but are more often multiple. They are thought to result from trauma, although the patient does not always recall this. Clinical findings of subungual epidermoid cysts include gradual enlargement of the distal phalanx, clubbing, a pincer nail deformity, ridging of the nail, onycholysis,

pachyonychia, and subungual hyperkeratosis. Pain occurs late in onset and can be accompanied by bone compression or fractures. Patients usually have a single affected digit; thumbs and great toenails are the most common locations for these growths (Willard et al., 2012).

Hemorrhage

Subungual hemorrhage usually produces well-circumscribed dots or blotches with a red to red-black pigmentation, and less often a longitudinal band that may or may not originate at the proximal nail fold, but some cases can be difficult to distinguish from subungual melanoma by the naked eye alone. Its irregular edges and the presence of leukonychia may be a clue to its etiology, as is its natural evolution, that is, to grow outward with the nail. Another important aspect of this evaluation is that although hemorrhage may be confirmed, some nail neoplasms, including nail unit melanoma may be associated with hemorrhage. Conversely, melanin may enter the nail plate secondary to trauma, and thus hemorrhage and true melanonychia may be concurrent in that setting. Therefore, any suspected case of subungual hemorrhage should be clinically monitored to ensure that the area in question resolves as expected (Ruben, 2010).

PRACTITIONER SCOPE AND TRAINING

Practitioners should practice only in the areas in which they are competent based on their education, training, and experience. Levels of education, experience, and proficiency may vary among individual practitioners. It is ethically and legally incumbent on a practitioner to determine where they have the knowledge and skills necessary to perform such services and whether the services are within their scope of practice.

It is best practice for the practitioner to appropriately render services to a member only if they are trained, equally skilled, and adequately competent to deliver a service compared to others trained to perform the same procedure. If the service would be most competently delivered by another health care practitioner who has more skill and training, it would be best practice to refer the member to the more expert practitioner.

Best practice can be defined as a clinical, scientific, or professional technique, method, or process that is typically evidence-based and consensus driven and is recognized by a majority of professionals in a particular field as more effective at delivering a particular outcome than any other practice (Joint Commission International Accreditation Standards for Hospitals, 2020).

Depending on the practitioner's scope of practice, training, and experience, a member's condition and/or symptoms during examination or the course of treatment may indicate the need for referral to another practitioner or even emergency care. In such cases it is prudent for the practitioner to refer the member for appropriate co-management (e.g., to their primary care physician) or if immediate emergency care is warranted, to contact 911 as

appropriate. See the *Managing Medical Emergencies (CPG 159 – S)* policy for information.

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