Vulvar Ulcers: An Algorithm to Assist With Diagnosis and Treatment

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Objectives: Vulvar ulcers can be challenging to diagnose, manage, and treat. Ulcers can be nonspecific in appearance and have many etiologies. Description of the lesion is very important.

Methods: An interactive vulvar ulcer algorithm was created to aid in the evaluation, diagnosis, and treatment of vulvar ulcers

Results: The algorithm flowchart begins with careful history and physical examination. Pending these, specific tests can be obtained to aid in diagnosis. The algorithm also links to appropriate treatments. The algorithm can be accessed on the International Society for the Study of Vulvovaginal Disease Web site (issvd.org). Each underlined word in the algorithm is a hyperlink that leads to a wealth of information on the topic that providers can use to direct testing and aid in diagnosis and treatment.

Conclusions: The vulvar ulcer algorithm can help clinicians with diagnosis and treatment plans.

Key Words: ulcer, erosion, fissure, herpes simplex virus, aphthous, infection

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BACKGROUND

Vulvar ulcers can be challenging to diagnose, manage, and treat. They vary by multiple factors including age and geographic location. Ulcers often have a nonspecific appearance with many etiologies that contribute to difficulty in diagnosis.[1] With these challenges in mind, an algorithm was created to aid in the evaluation, diagnosis, and treatment of vulvar ulcers.

DEFINITIONS

It is important to describe the presenting lesion including size, shape, and depth of the lesion, as well as characteristics of the border, base, and surrounding tissue (Figure 1).

- An ***ulcer*** is a full-thickness loss of the epidermis plus at least a portion of the dermis. It may extend into the subcutaneous tissue.
- An ***erosion*** involves loss of either a portion of, or the entire epidermis. The dermis remains intact.
- A ***fissure*** is a linear disruption of the stratum corneum and may extend into the dermis.[2]

DIAGNOSIS

While approaching the diagnosis of an ulcer, several key questions should be answered[1]:

- How long has the lesion been present?
- Has it occurred before and returned?
- Any new sexual partner(s)?
- Any recent travel history?
- Any chronic medical conditions such as Crohn disease?
- Any systemic or flu-like symptoms?
- Any recent or current medication exposures?
- Any history of trauma?
- Is the patient immobilized?
- Any itching and/or scratching?
- Any history of cancer?
- Have any caustic substances been used on the vulva (e.g., benzocaine)?

Once a thorough history is obtained, a physical examination should be completed, including evaluation of the extragenital skin and mucosa. Photography can be helpful for documenting the lesion(s). Evaluation should include an infectious disease workup because infection is a common cause of ulcers. Screening for herpes simplex virus (HSV), syphilis, HIV, and other sexually transmitted infections should be completed regardless of sexual history.[3] The most sensitive test to diagnose HSV is direct polymerase chain reaction swab of an active lesion; serology testing for HSV 1 and 2 may also be appropriate at times.[4] However, HSV IgG serology remains positive and does not inform location of the lesion. Furthermore, a significant part of the general population is positive for HSV 1. Screening for syphilis depends on which diagnostic tests are available to the individual clinician. Testing for rare causes of ulcers such as chancroid, granuloma inguinale, and lymphogranuloma venereum can be considered in endemic areas, or if the patient has a recent history of travel to endemic areas. Notably, access to chancroid testing is limited and treatment is often empiric if suspected.

Ulcers are acute (present for <1 mo) or chronic (present for >1 mo). Evaluation for systemic symptoms should be performed. In acute ulcers without systemic symptoms, the differential diagnosis includes trauma (contact dermatitis) and infections (HSV, syphilis, chancroid, lymphogranuloma venereum). Drug reactions, although extremely rare, are also included in this category; because there are sometimes systemic symptoms with any of these conditions, they must be considered when forming the differential diagnosis of acute ulcers.

In acute ulcers with systemic symptoms such as malaise, myalgias, sore throat, and fever, aphthous ulcers (also known as acute vulvar ulcers or Lipschütz ulcers) should be considered high on the differential diagnosis list. If aphthous ulcers are suspected, further testing for Epstein-Barr virus,[5–7] cytomegalovirus,[8–10] and *Mycoplasma pneumoniae*[11–13] can be performed.[5] In 30% of cases, acute aphthous ulcers can be also be associated with other infections such as group A streptococcus,[14] influenza A,[15] parvovirus,[2,5] paramyxovirus,[16] salmonella,[17] toxoplasmosis,[18] mumps,[16] Lyme disease,[19] and coronavirus disease (COVID-19).[20–23] It is important to remember that aphthous ulcers may be a skin response to any virus, even those not listed here.

Chronic ulcers may or may not be associated with mouth ulcers. If a chronic ulcer is HSV-positive, testing for HIV should be considered, with treatment according to applicable guidelines. The differential diagnosis includes contact dermatitis, complex aphthous ulcers,

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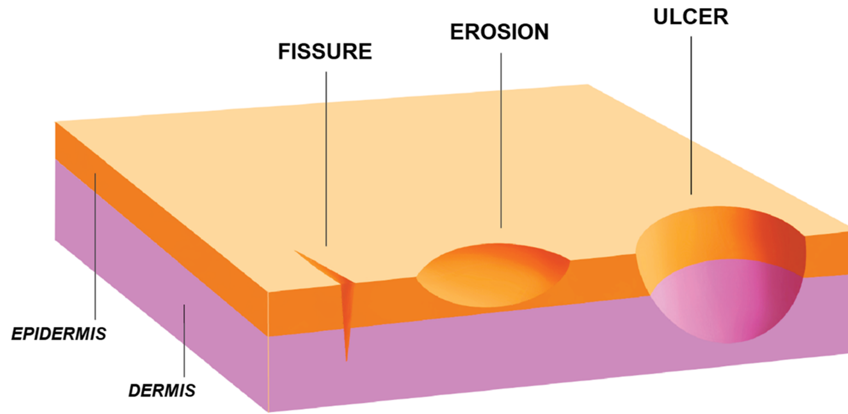

FIGURE 1. Ulcer diagram.

Langerhan cell histiocytosis, hidradenitis suppurativa, pyoderma gangrenosum, and other less common infections.[24,25] Complex aphthous ulcers may be caused by inflammatory bowel disease (such as Crohn disease[26]), Behçet disease, and myeloproliferative disorders.[27] A biopsy should also be considered. If the lesion is ***soft***, it should be biopsied at the ulcer edge and in any other abnormal-appearing area; if it is ***firm or raised***, the biopsy should be obtained from the thickened area, to the depth of the punch biopsy. The differential diagnosis includes squamous cell carcinoma, basal cell carcinoma, melanoma, adenocarcinoma, and lymphoma.

If in doubt regarding diagnosis or treatment of ulcers, the patient should be referred to a specialist.

HOW TO ACCESS THE ULCER ALGORITHM

1. The International Society for the Study of Vulvovaginal Disease (ISSVD) has a Web site with a variety of educational resources on many different vulvovaginal conditions. Go to www.issvd.org, click on the search function (the magnifying glass icon in the top right corner), and type "ulcer algorithm" in the search box. You do not need to be an ISSVD member to access this information.
2. Click on "Ulcer Algorithm" or "Ulcer Algorithm, a Guide and Treatment Tool" to bring up and download the algorithm flowchart.
3. You may also access the flowchart directly at https://www.issvd.org/benefits/ulcer-algorithm-guide-and-treatment-tool

HOW TO USE THE ALGORITHM

1. Refer to the ulcer algorithm to direct testing and aid in diagnosis. ***Each underlined word in the algorithm is a hyperlink that leads to a wealth of information on that topic.***
2. In the upper left corner of the algorithm diagram is a link to the full PowerPoint presentation regarding the evaluation of ulcers.
3. Refer to the "chronic ulcers" section of the algorithm to help decide where to biopsy these lesions. It is of utmost importance in chronic ulcers to exclude cancer.

The algorithm flowchart was approved by the board and membership of the ISSVD. The current version is available at the aforementioned location.

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