

Managing Common Vulvovaginal Diseases

Frederick J. Fleury, MD
Springfield, Illinois

A relatively small number of vulvovaginal disorders occur commonly in the office practice of the family physician, and they may present challenging problems in management. Knowledge of the differential diagnosis, diagnostic procedures, and methods of therapy is essential in dealing with these common problems. This paper presents an updated perspective of the diagnosis and management of the more common vulvovaginal diseases which can be effectively managed by the family physician.

Complaints referable to the vulva and vagina are an important part of the office practice of the family physician and the gynecologist. Since this area is not emphasized sufficiently in most training programs, the practitioner must learn about vulvovaginal diseases and develop a diagnostic approach on his own.

Time is saved when the proper diagnostic tools and reagents (Table 1) are in the examination room or close at hand. Treatment is simplified with a working differential diagnosis of the more common conditions, a planned diagnostic approach, and a proven effective therapeutic regimen (Table 2). Because of the innumerable creams, ointments, and suppositories available, it is helpful to select one or two to keep in mind. Substitutions can be made with time when newer medications are proven more effective. Such is the case with the new medication miconazole nitrate (Monistat), which was recently shown to be more

effective than nystatin preparations¹⁻⁴ (Mycostatin, Nilstat) in the treatment of monilia. A new vaginal tablet has been recently released which need be used only once daily for seven days, clotrimazole (Gyne-Lotrimen), for the treatment of monilia. Studies comparing its effectiveness to present medications are in progress.

Vaginal Discharge

Monilia

Monilia is responsible for about one third to one half of all vaginal infections. Pregnancy, oral contraceptives, antibiotics, and diabetes are important predisposing factors. The diagnosis can be made on wet smear examination (Figure 1) in most cases, but occasionally cultures are necessary when wet smears are negative. This is especially true when the patient has douched, worn a tampon to the office, or recently finished a vaginal medication. Wet smears will also be negative with *Torulopsis glabrata* which shows no hyphae on wet smear but is a "monilia species" on culture, and accounts for up to nine percent of monilia infections. Treatment is outlined in Table 2.

One percent gentian violet, though messy, is helpful in treatment failures, and occasionally in the patient with

severe proven monilial vulvovaginitis or the very acute symptomatic patient who is miserable. In resistant cases, oral contraceptives should be discontinued or the dosage reduced, if possible. Since reusable douching equipment harbors monilia and other organisms, the practice of douching may be the cause of reinfection. In patients who will not stop douching, a compromise might be a disposable douching product. Weight reduction and screening for diabetes are occasionally helpful. Labial and penile smegma should be kept in mind as a reservoir for reinfection, and tub bathing is preferable to showers to remove this focus.

Trichomoniasis

Trichomoniasis is a venereal disease although it may be infrequently contacted otherwise.⁵ When suspected, this infection must be confirmed with wet smears showing the motile protozoon (Figure 2). Wet smears without apparent trichomonads but with many white blood cells could still be trichomoniasis, but it is more likely to be a cervicitis or vaginitis of some other cause. Cultures may be helpful in these cases.

Metronidazole (Flagyl) is the drug of choice in symptomatic cases of trichomoniasis, and treatment must include all sexual contacts. The need for treatment of asymptomatic patients, for example those discovered incidentally on Pap smears, is debatable. In a recent chart review of 351 patients found to have *Trichomonas vaginalis* on their Pap smears, only 52 percent were symptomatic (FJ Fleury: study in progress). The small number of asymptomatic patients in whom the diagnosis was missed be-

From the Department of Obstetrics and Gynecology, Southern Illinois University, School of Medicine, Springfield, Illinois. Requests for reprints should be addressed to Dr. Frederick J. Fleury, Department of Obstetrics and Gynecology, Southern Illinois University, School of Medicine, P.O. Box 3926, Springfield, Ill 62708.

cause of negative wet smears, were telephoned and treated along with their contacts. Initially asymptomatic patients were also called, but nearly all still had no symptoms and the notification resulted in more anxiety and confusion than benefit. Although some authors feel asymptomatic carriers will inevitably become symptomatic, this has not been our experience.

Clinical and laboratory studies suggest the traditional ten-day and even the five-day metronidazole (Flagyl) treatment schedules are much more drug than is necessary. Dykers⁶ recently reviewed the literature of single-dose programs, and treated 31 patients with 2 gm (eight tablets) of metronidazole taken all at once. This "single shot" therapy appears as effective as the longer programs. In our own ongoing study using 2 gm stat, 95 percent of the first 220 patients returning for follow-up have been cured (FJ Fleury: study in progress). Studies with similar and even smaller doses are underway. The April-May 1976 FDA drug bulletin has recommended only seven days of treatment for men and women, and the same dose for each. That is, one tablet t.i.d. It is quite likely that the FDA recommendation will change again to a still lower dosage in the near future.

Treatment failures may be due to excessive numbers of certain bacteria in the vagina that can inactivate metronidazole.^{7,8} This occurs most commonly when there is a severe concomitant bacterial infection or in a postoperative patient, such as after hysterectomy, conization, or cautery. Successful eradication of trichomonads in these cases requires concomitant therapy of the bacterial infection or retreatment at a later postoperative date.

A recent medical publication entitled "Is Flagyl Dangerous?" has caused a great deal of concern.⁹ The statements therein parallel those of the Health Research Group (HRG) of Washington, DC, founded by Ralph Nader, and suggest "tub baths twice daily," "biweekly douches with... vinegar," and "avoidance of pantyhose and other tight clothing" for symptomatic trichomoniasis. These are unproven and unlikely remedies, and the Food and Drug Administration in a subsequent publication stated that the HRG position is "denied" and "Flagyl should continue to be available for the

Table 1. Diagnostic Equipment	
Instruments for Biopsy	
Keys biopsy punch (4mm)	
Small, sharp scissors	
Pickups without teeth	
Disposables for Biopsy	
1% lidocaine hydrochloride (Xylocaine) with adrenalin	
Oxidized cellulose (Oxycel) cotton	
3cc syringes	
25 or 27 gauge needles	
1% toluidine blue	
1% acetic acid	
Silver nitrate sticks	
Disposables for Wet Smears	
Standard microscopic slides	
Cover slips	
10% KOH in eyedropper bottle	
Physiologic saline in eyedropper bottle	
Equipment	
Microscope	

treatment of trichomonal vaginitis."¹⁰ The FDA further stated "...available evidence indicates that the total dose of Flagyl presently given to patients, when compared to the life span doses given to rodents, is very low." The great fortune in the discovery of metronidazole and the prior failure of all other measures is recounted in an interesting article entitled "History of the Treatment of Trichomoniasis."¹¹

Hemophilus Vaginalis

Hemophilus vaginalis is the most common cause of malodorous discharge and probably the most common venereal disease. Most cases of "nonspecific vaginitis" are actually *Hemophilus vaginalis* and not "nonspecific" at all. This term has encouraged physicians to make casual visual diagnoses and should be abandoned. Its pungent odor and frequent bubbles can lead to the erroneous visual diagnosis of trichomoniasis. The wet smears, however, show "clue cells" (Figure 3) and *very few white blood cells* since *Hemophilus vaginalis* does not infect the tissue but simply thrives in the vaginal secretions.

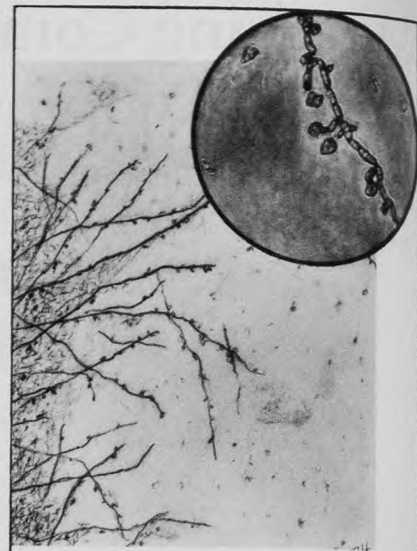


Figure 1. Wet Smear for Monilia

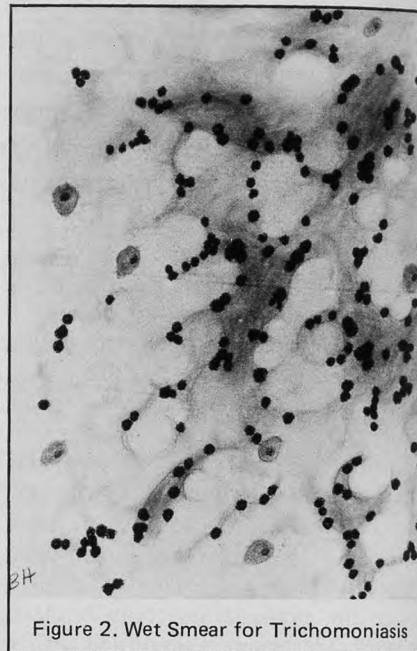


Figure 2. Wet Smear for Trichomoniasis

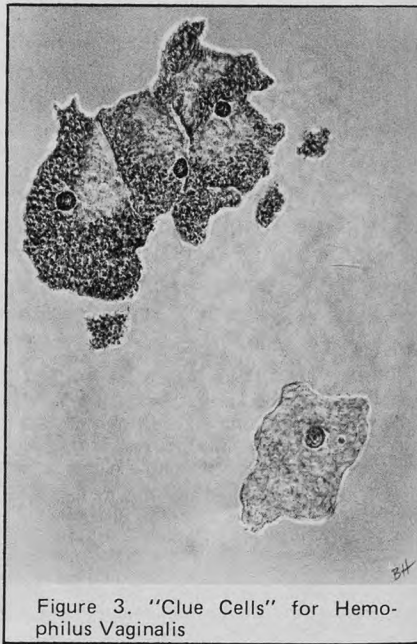
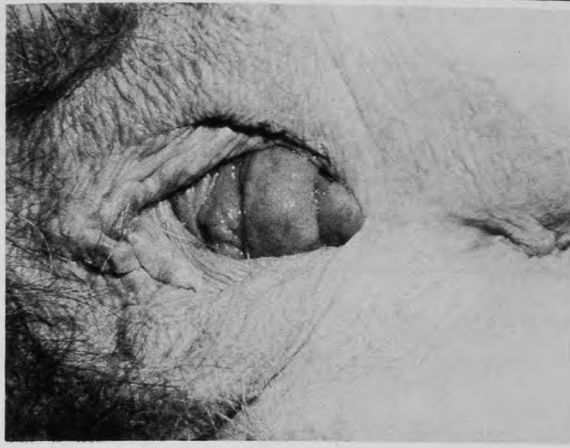
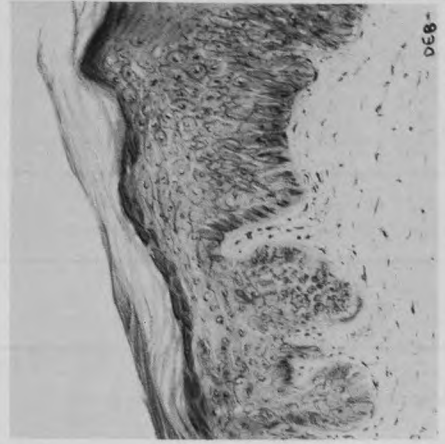


Figure 3. "Clue Cells" for Hemophilus Vaginalis



Acute and Chronic Inflammation

b

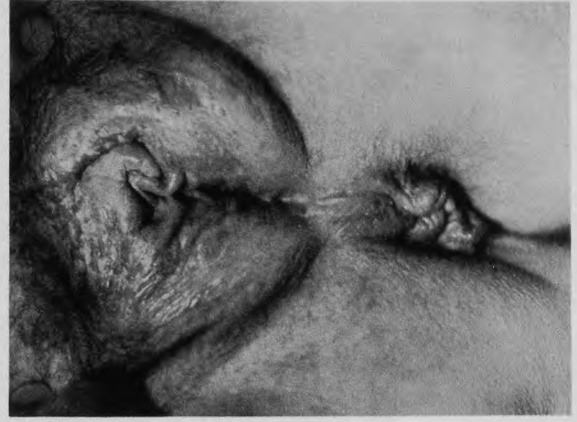


(microscopic)

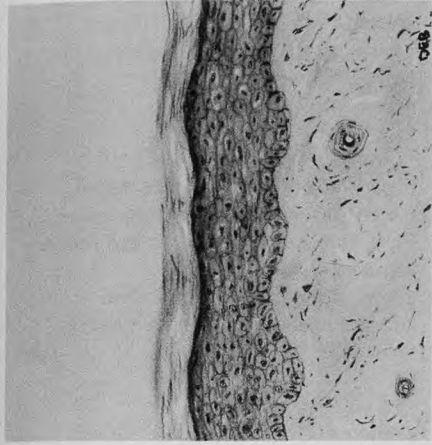
c

Hypertrophic Dystrophy

d



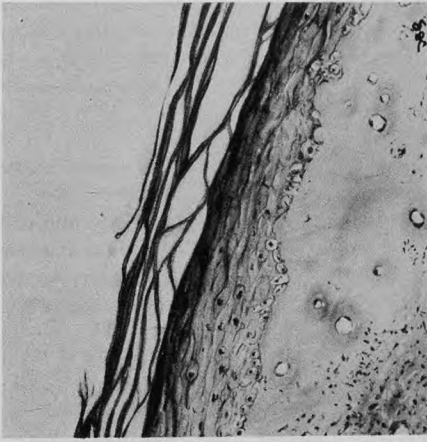
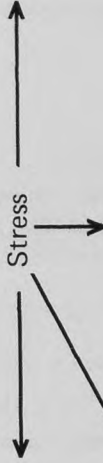
(gross)



Normal Vulvar Skin (microscopic)

a

Stress



Lichen Sclerosus and Atrophic

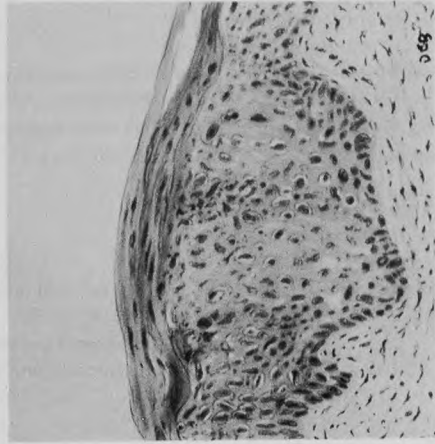
(microscopic)

g



(gross)

f



Atypia or Dysplasia (microscopic)

e

Figure 4. Worrisome Lesions and White Vulvas

Table 2. Diagnosis and Treatment (continued)

Differential Diagnosis	Diagnostic Procedure	Treatment
Worrisome Lesions and White Vulvas	Collins stain followed by office biopsy (Table 3)	See below
Lichen sclerosus et atrophicus and related atrophic vulvas	Collins stain entire vulva Biopsy shows: (Figure 4, g) atrophic epithelium plus other features of lichen sclerosus et atrophicus depending upon severity thin epithelium loss of retepegs homogenous zone in severe cases	<ol style="list-style-type: none"> 1. Topical 2% testosterone propionate in petrolatum rubbed vigorously into affected skin t.i.d. 2. Correct cause of chronic irritation 3. Careful local hygiene 4. Steroids and estrogens, though affording symptomatic relief, will not cure this condition and may make it worse (more atrophic) 5. Vulvectomy is <i>not</i> indicated because up to 90% of cases will reoccur
Hypertrophic dystrophy (neurodermatitis, "benign leukoplakia")	Collins stain entire vulva Biopsy shows: (Figure 4, d) thick epithelium excluding the keratin layer acanthosis elongated retepegs	<ol style="list-style-type: none"> 1. Topical steroids t.i.d. 2. Correct cause of chronic irritation 3. Careful local hygiene 4. Vulvectomy is <i>not</i> indicated when cellular histology is benign
Atypical or dysplastic lesions	Collins stain Biopsy shows histological atypia that is not simply due to inflammation (Figure 4, e)	<ol style="list-style-type: none"> 1. Wide local excision when moderate or severe 2. Simple vulvectomy with extensive lesions
Carcinoma in situ	Collins stain entire vulva Biopsy shows full thickness skin cancer	<ol style="list-style-type: none"> 1. Wide local excision of small lesions 2. Collins stain to rule out otherwise inapparent lesions 3. Simple vulvectomy with extensive lesions
Invasive lesions	Collins stain entire vulva Biopsy shows cancer has broken through basement membrane	<ol style="list-style-type: none"> 1. Radical vulvectomy plus groin dissection 2. Oncological consultation

*continue Rx through menstrual cycle

**see comments in text

It is important to treat also the male consorts, or patients will "keep getting it back." Ampicillin, 500 mg q.i.d. for five days or tetracycline 250 mg q.i.d. for five days, is sufficient for both men and women. Triple sulfa (Sultrin) vaginal cream has been shown effective in lieu of oral therapy in women. Good studies are needed to test the effectiveness of all vaginal creams and suppositories for *Hemophilus vaginalis*.

Cervicitis with Leukorrhea

Infection of the cervix is a common source of purulent mucoid "vaginal" discharge. Wet smears show many white blood cells but no specific pathogen. These cervical infections frequently respond to 10 to 14 days of oral ampicillin or sulfa preparations. Refractory infections may require cryocautery followed by another course of oral antibiotics. Vaginal creams (sulfa) are apparently effective as well, but controlled studies are needed.

Cervical Eversion with Mucorrhea

Many patients complain of a clear vaginal discharge and are found to have a large area of healthy everted endocervical mucosa. The clear mucus is nonirritating, has no odor, and need not be aggressively managed. Promiscuous use of the cryocautery in these cases is a "cure worse than the disease." Management consists simply of reducing the estrogen content in oral contraceptives, careful perineal hygiene, and reassurance.

Vulvar Inflammation

Vaginal Discharge

Vaginal discharges are one of the most common causes of vulvar inflammation, as outlined in the foregoing discussion.

Urinary Incontinence (Figure 4,b)

Urinary incontinence is a frequent cause of chronic vulvar inflammation. In most cases corrective surgery alleviates the problem, but great care must be taken in the preoperative evaluation of the urinary incontinence. Operations on patients with atonic bladders with overflow incontinence will give the patient even higher residual volumes. Operations on patients with "spastic" bladders are also doomed to failure. Chronic urethritis is found in about one half of the patients with incontinence and responds to dilatation.

Tinea

Tinea infection or "jock rash" should be suspected if the scaly dermatitis extends to the mons or crural folds. Scrapings of the scales mixed with 10 to 20 percent KOH and heated will show hyphae on high power microscopic examination (Figure 5). Many dermatologists prefer oral griseofulvin, 500 mg once or twice daily for three to six weeks, rather than topical medication (Table 2).

Herpes

Herpes vulvitis has been quite common in the past two to three years and is causing a great deal of patient anxiety and discomfort. The first (primary) infection is characteristically more severe with its greater numbers of vesicles and ulcers than in the recurrent or secondary infections. This patient frequently has inguinal adenopathy, malaise, and low grade fever as well. Herpes antibodies are usually negative with this first infection; however, a second antibody titer a month later will show a rise in serum antibodies to herpes. The diagnosis can be made by viral culture of the vesicle fluid and Pap smear is positive for inclusion bodies in almost 60 percent of patients.

The patients frequently complain of dysuria and unless questioned further, the correct diagnosis may be delayed. All phone calls for dysuria or "bladder infection" should include questions to determine whether the

dysuria (burning) is vulvar or urinary tract (urethral, lower abdominal).

Management of acute primary herpes includes oral analgesics, such as codeine preparations, careful perineal hygiene to prevent superinfection, voiding into bath water if vulvar dysuria is severe or having the patient pour water over the vulva while voiding. Povidone-iodine (Betadine) is not only helpful in preventing bacterial superinfection, but is virucidal¹² in vitro and effective clinically.¹³ One percent neutral red dye or 0.1 percent proflavine applied to open vesicles and exposed to light is effective in shortening the course of infection and reducing the number of recurrences. This phototherapy is thought to disrupt the viral DNA replication. Similar to Flagyl, phototherapy is surrounded by controversy. This mode has been shown to transform *hamster embryo fibroblasts* in tissue culture into malignant cells.¹⁴ However, phototherapy, though in use for nearly 15 years, has not been associated with neoplasia in humans.

Poor Hygiene

Many patients prefer showers to tubs for bathing and consequently vulvitis is more common in the former. It is truly unusual to see a patient with vulvitis who is practicing careful vulvar hygiene regardless of the quantity of vaginal discharge, urinary incontinence, or rectal discharge. Proper vulvar hygiene includes careful cleansing of the interlabial folds which are often neglected. The accumulated smegma is a reservoir for repeated vaginal and urinary infections as well as a cause of vulvitis.

Contact Allergies

Perfumed sprays, soaps, and toilet tissue can be irritating to some patients and should be avoided. Borrowed or prescribed medications can cause chemical irritation or allergic reaction in a small number of patients. Treatment includes withdrawal of the offending agent, topical steroids and frequent sitz baths in warm, soapy water.



Figure 5. KOH Scrapings for Tinea

Worrisome Lesions and White Vulvas (Figure 4)

Management begins with biopsy (Table 3). Areas selected for biopsy may be more obvious after Collins Stain (Table 3) which stains superficial nuclei that are not normally present. One of the major pitfalls is treatment without histological diagnosis. Another pitfall is vulvectomy for histologically benign disease because the pathology report contained some reference to "leukoplakia." The term "leukoplakia" is a cause of much confusion and should be abandoned. Operation should be reserved for moderate or severe dysplasia or more advanced lesions.

Lichen Sclerosus et Atrophicus

Lichen sclerosus (Figure 4,f,g) heals slowly but progressively with topical testosterone two percent in petrolatum. Topical steroids, estrogens, or petrolatum alone will give symptomatic relief but not histological cure. The cause of the chronic vulvar irritation must be eliminated. These lesions may rarely be found to coexist with malignancy or dysplasia on the same vulva, but most authorities do

not think this entity is a premalignant lesion.

Hypertrophic Dystrophy

Chronic severe inflammatory lesions (Figure 4,c,d) may be microscopically worrisome to the untrained eye at first glance, but the treatment is not surgical. Topical steroids plus great care in correcting the cause of the chronic dermatitis will rapidly resolve most lesions. When moderate to severe dysplasia (Figure 4,e) or carcinoma in situ is also present, *then and only then* is vulvectomy or wide local excision indicated.

Atypical or Dysplastic Lesions

Mild degrees of atypia can be observed closely while treating the underlying vulvitis, if present. Moderate or severe atypia in any focus should be locally excised. Diffuse moderate or severe atypia requires wide local excision or simple vulvectomy. These patients should be followed closely for recurrence and are at greater risk to developing similar disease on the cervix and vagina.

Carcinoma in situ

Patients with carcinoma in situ or "Bowens disease" should have wide local excision of their lesions or simple vulvectomy when the lesions are diffuse. Conservative surgery should be reserved for reliable patients, and aggressive management is wise in those patients less likely to consent to long-term follow-up.

Invasive Lesions

Microinvasive and frankly invasive lesions require total vulvectomy and bilateral groin dissection. Wide local excision and unilateral groin dissection are contraindicated because of the rich crosslymphatic drainage of the vulva. Consultation is mandatory and is widely available.

Table 3. Biopsy Procedure

Collins stain
Paint <i>entire</i> vulva with 1% toluidine blue on cotton-tipped applicators
Wash off stain after 1 minute with 1% acetic acid and cotton balls or gauze pads
Areas holding the stain are suspect for atypia (excoriations will also hold stain, however)
Infiltrate each biopsy site with 1-2 cc of 1% Xylocaine with adrenalin
Twist 4 mm keys punch into skin to depth of about 5 mm
Remove biopsy with pickups and scissors
Pack biopsy site firmly with Oxycel cotton, or cauterize biopsy site with silver nitrate sticks
Suture is rarely if ever needed

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