The Latest in Vulvar Dermatoses

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Additional information on vulvovaginal diseases is available at

http://obgyn.med.umich.edu/patient-care/womens-health-library/vulvar-diseases

or go to Google and type in University of Michigan Center for Vulvar Diseases

click on Information on Vulvar Diseases

Handout developed in conjunction with Lynne Margesson, MD

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**Learning Objectives**

**At the end of this presentation, the participant will:**

1. Understand the various vulvar dermatoses that cause vulvar pruritus
2. Identify and treat lichen sclerosus, lichen simplex chronicus, and lichen planus
3. Develop a plan for caring for patients with the itch scratch cycle

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### Nonneoplastic Epithelial Disorders

<table>
<thead>
<tr>
<th>1975-1986</th>
<th>1987-present</th>
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</thead>
<tbody>
<tr>
<td>Lichen sclerosus et atrophicus</td>
<td>Lichen sclerosus</td>
</tr>
<tr>
<td>Hyperplastic dystrophy</td>
<td>Squamous cell hyperplasia/lichen simplex chronicus</td>
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<tr>
<td>Mixed dystrophy</td>
<td>Other dermatoses</td>
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**Lichen sclerosus**

Lichen Sclerosus – is chronic, autoimmune disease affecting the genital skin causing whiteness, tissue thinning and scarring. It is the most common chronic vulvar condition.

Histology - blunting or loss of rete ridges, hyperkeratosis and loss of melanocytes are seen with a zone of pallor and often a dense interstitial lymphocytic infiltrate.

Pathophysiology: Unknown. Various genetic, autoimmune, infectious and local factors are implicated. The cause is probably multifactorial with a genetic, environmental and possibly infectious input. Often associated with other autoimmune diseases. Thyroid disease is the most common. It can be associated with psoriasis and less commonly lichen planus, morphea, vitiligo, pernicious anemia, inflammatory bowel disease and diabetes. Familial cases have been reported.

Age of onset - middle age (about 40 years – perimenopause) but range is from less than one year to > 80 years

Prevalence: 1:300 to 1:1000

Symptoms - Pruritus is present in up to 90% of cases and it can be severe and intolerable. Scratching causes secondary changes and open areas that cause dysuria, burning and dyspareunia. Scarring leads to dyspareunia, and at times, aperuenia. Lichen sclerosus may be asymptomatic and be associated with asymptomatic vulvar scarring.
Physical exam – Scattered or confluent papules forming plaques of ivory white with cellophane-like sheen on the surface. Found anywhere on the vulva from the clitoris and periclitorally to the gluteal cleft. The involvement may be patchy or generalized in various patterns, classically a “figure-of-eight”. It can involve any cutaneous surface but most commonly is found on the vulva in women. Extranagenital disease occurs in 15 % of patients. LS typically does not involve the vagina. Rarely, it is in the mouth.

Secondary changes - excoriations, purpura, erosions, thickening (lichenification) crusting, and scarring, ranging from loss of labia or burying of the clitoris to loss of all normal vulvar structures.

Differential diagnosis - sexual abuse in children, vitiligo, lichen simplex chronicus, lichen planus, cicatricial pemphigoid, psoriasis

Cancer risk - about 4- 5 % develop associated SCC
Treatment: Chronic treatment needed for best long term control. Long term treatment decreases risk of cancer.
   - Biopsy to confirm diagnosis if needed – (however, not in children)
   - Photodocument as is possible
   - Educate the patient
   - Stop irritants
   - Recommend cool, ventilated clothing
   - Topical superpotent steroids (various regimens exist)

A variety of topical steroid regimens exist.

1. Clobetasol propionate or halobetasol 0.05% ointment qd to bid for 8-12 weeks – until tissue is as normal as possible – not just for symptom control. Severity will indicate the strength of topical steroid needed long term. If doing well, decrease application to M-W-F or 1-2 times a week. Consider a milder steroid like mometasone 0.1% ointment.

2. Clobetasol propionate 0.05% ointment bid x 1 month, then qhs x 2 months, then decrease to a mid dose topical steroid, such as triamcinolone acetonide 0.1% ointment nightly, with decrease over time to triamcinolone acetonide 0.025% ointment nightly when possible.
   - Follow up at 6-12 weeks then regularly at 6-12 month intervals
Duration of treatment: lifelong 1 - 7d / week NOTE: LS can be symptom free with ongoing scarring.

Treat associated Candida or secondary bacterial infection
Stop scratching as this keeps LS active. Give 10 mg of hydroxyzine or doxepin at 6 to 7 PM to stop nightly scratching. Scratching flares and spreads LS. (See Lichen Simplex Chronicus below)
For thick lichen sclerosus consider intrallesional steroid (triamcinolone 3.3 to 10 mg/mL into thickening area)*. The dose is dependent on the location and thickness of the skin that is being injected. This can be repeated monthly for 2-3 months. Do not inject high steroid doses into thin skin or in small areas because the tissue can slough.
If constantly scratching use oral prednisone using a 15 day to 3 week taper or IM triamcinolone 1 mg/kg up to 80 mg/dose**. Never give over 80 mg of triamcinolone acetonide IM per month. This can be repeated once a month for 3 months with a maximum of 4 doses a year.

*To clarify the intralesional steroid and intramuscular steroid use for all conditions mentioned in this handout:
For intralesional steroid, dependent on the size of the lesion, the dilution of the triamcinolone 10 mg per mL (Kenalog 10®) will vary. For areas of thin skin use lower doses 3.3 mg per mL. Dilute triamcinolone 10 mg/mL 1 part with 2 parts of saline for injection = 3.3 mg/mL. For thicker areas use higher doses intralesionally (5 up to 10 mg per mL). Never give more than 40 mg of triamcinolone subcutaneously over the entire vulva at one time. These intralesional injections can be repeated monthly for 2 to 3 months.

**For intramuscular steroid use, use triamcinolone 40 mg per mL (Kenalog® 40). Inject deep into muscle IM 1 mg per kg, not to exceed 80 mg in one injection. This can be repeated monthly for up to 4 doses a year.

Add topical estrogen 3-5 days / week to assess compliance with lifelong treatment as indicated to improve barrier function.

Tacrolimus 0.1% ointment and pimecrolimus 1% cream have been used for the treatment of vulvar lichen sclerosus. Burning may occur with these medications.

Tazorac 0.1% gel (can also use 0.05% or 0.1% cream for lower strength) may be used for lichen sclerosus when the skin is very thick or unresponsive to topical steroids. Apply to skin qhs with gradual decrease to two to three times a week.
Acitretin (Soriatane) is a retinoid that may be used for lichen sclerosus unresponsive to topical steroids (and in some cases lichen planus). It is most beneficial for thickened skin. Take 10 mg every 1-2 days for a dose of 30-70 mg per week. It must be taken with fatty food. The patients must not become pregnant, as it is teratogenic like isotretinoin.

Surgery is done on occasion to improve function or for scarring

In all patients with lichen sclerosus:
Arrange follow-up always – indefinitely.
Regular follow-up is needed to make sure there is ongoing treatment because there is an increased risk of developing squamous cell carcinoma (SCC) (<5 % in women). If not responding to treatment - look for concurrent conditions and biopsy and rebiopsy, as needed.

Note – LS involves the vulva not the vagina unless prolapse. Scarring is not reversible by any medical therapy.
Lichen sclerosus affects children in 7-10% LS cases. It usually starts with itching and constipation. Treatment is the same but compliance with long term therapy can be a challenge.

**LICHEN SIMPLEX CHRONICUS (LSC)**

Synonyms: Squamous cell hyperplasia, neurodermatitis, pruritus vulvae, hyperplastic dystrophy

“LSC” – The end stage of the itch – scratch – itch cycle. It is usually part of the atopic dermatitis (eczema) spectrum. It can be associated with underlying, secondarily scratched and thickened psoriasis or contact dermatitis or the end stage of several itchy vulvar conditions (e.g. LS). Scratching “feels good” especially for patients with atopic dermatitis (patients with a background of allergies, eczema, hay fever or asthma). Stress makes all of this worse.

Causes of LSC:

<table>
<thead>
<tr>
<th>Causes of LSC</th>
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<tbody>
<tr>
<td><strong>Infection:</strong></td>
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<td><strong>Dermatoses:</strong></td>
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<td><strong>Metabolic:</strong></td>
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<tr>
<td><strong>Neoplasia:</strong></td>
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Pathophysiology – in this condition there is an altered skin barrier with varying combination of allergens, irritants and skin pathogens that result in a changed immunoregulatory process. Stress further alters the skin barrier function, making all of this worse. This condition is defined by relentless pruritus. These patients scratch in their sleep ruining the effectiveness of their daytime treatments. The chronic scratching causes the skin to thicken and feel firm.

Clinical Presentation:

- Relentless pruritus
- Chronic – years of “chronic itch”
- Worse with heat, stress, menstruation
- “Nothing helps”
- Marked lichenification

Pigmentation changes
Unilateral or bilateral
Hair loss from scratching
Excoriations + crusts
Diagnosis – clinical biopsy may be needed

Note: Scratching makes erosions with serosanguinous crusts; repeated rubbing causes skin thickening (lichenification). In LSC, you can see both erosions and lichenification.

Treatment:
- Rule out other conditions
- Stop all irritants
- Consider Patch testing looking for an allergen
Stop itch/scratch/itch cycles  
Topical superpotent steroids, halobetasol or clobetasol 0.05% ointment,  
bid for two weeks, qhs for two weeks, then M-W-F for two weeks.  
(For severe disease, a longer duration of a mid dose topical steroid may be  
required.)  
Oral steroids may be required for a short duration (dose varies dependent on disease  
severity; consider prednisone 40 mg po q am x 5, then 20 mg po q am x 10,  
however a longer taper may be required)  
IM triamcinolone 1 mg/kg (up to 80 mg total) can be used instead of prednisone for  
severe, itchy or extensive LSC. Repeat is seldom necessary. If repeat is necessary,  
it can be repeated monthly x 3 total doses.  
Intralesional triamcinolone can be used to thin the thick / lichenified skin as for LS  
above.  
Treat infections, bacterial and yeast  
- Cefadroxil 500 mg bid for 7 days  
- Fluconazole 150 mg po q week x 2  
Sedate - Doxepin or hydroxyzine 10 to 75 mg qhs for nighttime itching  
- Citalopram or fluoxetine or sertraline in the morning for daytime itching  
- Amitriptyline is also used at times for sedation (25 mg po qhs; can increase to  
50 mg po qhs) in patients with severe itch scratch cycle. It puts the patient in  
a deeper sleep cycle than the other sedation agents listed above. Do not  
combine amitriptyline with the other sedation agents above. Give early in  
evening so not sleepy in morning (6 - 8PM). Caution for use in the elderly  
population. Check for other drug interactions.  
Sitz baths or cold soaks  
White cotton gloves at night

Note: If skin is very raw the topical steroids will burn. Start with plain Vaseline,  
oral antibiotics, anti-yeast medication and nighttime sedation for 2-3 days,  
then start the topicals.  
LSC reoccurs due to sensitive skin in the area so it will need repeated management.  

LOOK FOR MORE THAN ONE CAUSE OR A COMBINATION OF CAUSES as it is  
not uncommon to have psoriasis, contact dermatitis and lichen simplex chronicus in the  
same patient.

LICHEN PLANUS (LP)  
Lichen planus is an autoimmune, mucocutaneous hypersensitivity disorder with altered cell  
mediated immunity in older women affecting the skin and mucous membranes.

Etiology: It is a disorder of altered T-cell mediated immunity to exogenous antigens  
targeting the basal keratinocytes of the epidermis. Non-specific mechanisms are  
also involved plus genetic factors.

The diagnosis is often missed on the vulva and in the vagina.  
It tends to occur in menopausal women (age 40-60 years).  
It affects skin and mucous membrane – mouth, vulva, vagina, nails, scalp,  
esophagus, nose, conjunctiva of the eye, ears, and bladder.
Oral and genital LP onset together in 50% cases and oral starts first in 33%. Painful LP is usually erosive; patient can have LP plus chronic vulvar pain.

Clinical Presentation:
1. Papulosquamous – typical papules and plaques with white lacy pattern on the vulvar trigone and periclitoral area. It may be part of generalized LP. This can be itchy. It tends to respond to topical steroids.
2. Hypertrophic – least common with extensive white scarring and destruction (looks like LS)
   – can be very itchy. Tends to be resistant to treatment.
3. Erosive (vulvovaginal gingival syndrome) – Most common pattern on vulva. This is a destructive, scarred form of lichen planus on the mucous membranes and vulva with a desquamative vaginitis, variable erosions plus atrophy, usually pain, burning and irritation rather than itch. The skin of the vulva often has a glazed erythema. Treatment tends to be resistant.

Note – LP generally involves the vulva and vagina, It may only be in the vagina.

Erosive LP (vulvovaginal gingival syndrome)
Symptoms:
   - Severe pain and burning
   - Depression + anger
   - Dysuria
   - Dyspareunia / apareunia

Signs – painful, glossy red erosions (glazed erythema) and scarring are seen around the labia minora and vestibule. The borders may be white to smudgy or smoky gray. The scarring causes flattening of the vulva and loss of the labia minora.
   - May see desquamative inflammatory vaginitis
     Vaginitis with vaginal erosions, atrophy, purulent malodorous discharge, vaginal synechiae and scarring. The vagina may be obliterated.

Note: up to 70% of women with vulvar LP have vaginal involvement.

This can be a chronic, destructive, debilitating and difficult condition.

Diagnosis: Look at mouth and skin for evidence of LP
Biopsy for H&E and immunofluorescence unless there is the classic lacy pattern
Note - Biopsies may be nonspecific

Typical histology of lichen planus, found in 70% include:
   - Irregular acanthosis of the epidermis
   - Vacuolar change of the basal cell layer
   - A band-like dermal infiltrate of lymphocytes in the upper dermis and often plasma cells
   - Apoptotic keratinocytes scattered within the epidermis
   - Immunofluorescent staining of the basement membrane zone, shows an irregular deposition of fibrinogen, IgM, cytoid bodies, and, occasionally, granular IgG or IgA.

Differential diagnosis: Lichen sclerosus, drug eruption, cicatricial pemphigoid, graft vs.
host disease

Treatment:

Stop irritants 
Bland therapy for ulcers 
Superpotent steroid ointment (clobetasol) topically once to twice a day. 
Intralesional steroid – triamcinolone 3.3 up to 10 mg/mL q 3-4 wks x 3 (do not give high dose in small area-erosions and ulcers may occur)

Intravaginal steroid – hydrocortisone acetate foam 40-80 mg qhs or 25 to 200 mg compounded suppository qhs (if using high dose steroids, use for short term use, then gradually decrease the dose).
If severe – hydrocortisone acetate 10% compounded in a Replens like base –3 to 5 grams (300 mg to 500mg/dose) nightly for 14 days then 3 nights a week and continue to decrease dose as per response. (Some prefer to use every other night initially, and then gradually decrease the dose)
Note: adrenal suppression and risk of candidiasis

IM Triamcinolone (Kenalog 40) 1 mg/kg every 4 weeks for 3 doses. (Dose up to a maximum of 80 mg total per dose) Repeat monthly for up to 3 months. Max 4 doses per year
Prednisone 30-60 mg a day with taper
Methotrexate 5 -15 mg po or subcutaneously in abdomen or thigh, once a week with folate 2 mg daily
Mycophenolate mofetil 250 mg/day building up to 3gm/day (pregnancy must be prevented)
Hydroxychloroquine 200 mg bid
Acitretin 10 -20 mg/d 3-7 days a week with fatty food for erosive disease. Counsel on no pregnancy as this is a teratogen. (see above for lichen sclerosus)
Cyclosporine 3-4 mg / kg per day
Azothioprine – 50-100 mg bid
Adalimumab 80 mg then 40 mg every 2 weeks.

Patient education and support needed
Dilators
Surgery for scarring followed by intravaginal treatment with steroids

Other Treatments:
- Clobetasol propionate 0.05% ointment virginally using 1-2 grams nightly via a “Premarin type applicator”
- Clobetasol propionate 0.05% ointment/Nystatin 100,000 units/gram/3% oxy-tetracycline in cream base
- Pimecrolimus (Elidel) 1% cream bid for mild LP
- Topical tacrolimus (Protopic) 0.03 or 0.1% ointment (burns) as a steroid sparer
- Etanercept (see below)

Course: uncertain - often very chronic-10% resolve, 50% asymptomatic and 15% do poorly
Risk of squamous cell carcinoma 4-5% - biopsy any suspicious area.
What are the various treatments for Lichen Planus?
Papular lichen planus tends to respond to topical corticosteroids. Triamcinolone acetonide 0.1% ointment for mild disease and clobetasol propionate 0.05% ointment for severe disease.

For erosive disease the following table contains many medications that have been tried for LP treatment. It is important to note that many of these medications are formulated for off label use.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Discussion</th>
</tr>
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<tbody>
<tr>
<td><strong>Long term Anti-inflammatory antibiotics</strong></td>
<td>This treatment works best for early erosive lichen planus</td>
</tr>
<tr>
<td></td>
<td>Doxycycline or clindamycin used long-term. Consider adding weekly fluconazole to prevent yeast infection.</td>
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<tr>
<td><strong>Steroids are often used for lichen planus</strong></td>
<td>Vaginal LP</td>
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<td></td>
<td>Anusol HC 25 mg vaginal suppositories are used in the following manner:</td>
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<td>1/2 of a Anusol HC suppository per vagina twice daily for 2 months, then daily for 2 months, then maintenance treatment at 1 to 3 times per week. However, many patients do not experience significant long-term response to intravaginal steroids. The vaginal vault tends to continue to scar. To keep the vault open and prevent adhesions it often will be necessary to use vaginal dilators. The dilator may be lubricated with a hydrocortisone cream.</td>
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<tr>
<td></td>
<td>At times a stronger steroid may be required for vulvar LP (see text).</td>
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<tr>
<td></td>
<td>Topical- Clobetasol propionate (Temovate®) 0.05% ointment</td>
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<tr>
<td></td>
<td>Intralesional- triamcinolone acetonide 5-10 mg/mL</td>
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<tr>
<td></td>
<td>As above, for stronger treatment:</td>
</tr>
<tr>
<td></td>
<td>– hydrocortisone acetate foam 40-80 mg qhs</td>
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<tr>
<td></td>
<td>or 25 to 200 mg suppository qhs (if using high dose steroids, use for short term use, then gradually decrease the dose).</td>
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<td></td>
<td>If severe – hydrocortisone acetate 10% compounded in a Replens like base –3 to 5 grams (300 mg to 500mg/dose) nightly for 14 days then 3 nights a week and continue to decrease dose as per response. (Some prefer to use every other night initially, then gradually decrease the dose)</td>
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<td></td>
<td>Oral- Oral prednisone may be required until healing has occurred. 30-40 mg q am with food for 3 weeks then slowly taper. As the skin heals, topical corticosteroids may be added as the prednisone is tapered.</td>
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<td>IM steroids (place into muscle in anterior thigh). Used for moderate disease. Dose 1 mg/kg (not to exceed 80 mg) every 4 weeks to every 8 weeks for up to 3 or 4 months.</td>
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<tr>
<td></td>
<td>For Oral LP- pat area dry with tissue then apply Clobetasol propionate (Temovate®) gel or ointment 0.05% to affected area up to qid</td>
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<td>Apply on a cotton ball in mouth for 5 min. Best to use in a dental tray for 15-30 min bid for gums. Some providers use dental molds to hold in medications in patients with gingival LP</td>
</tr>
</tbody>
</table>
| Tacrolimus and Pimecrolimus | Tacrolimus (Protopic) 0.1% ointment bid to qid.  
Apply on a cotton ball in mouth for 5 min  
Vaginal medication (made by compounding pharmacy)  
tacrolimus vaginal suppositories  
Insert one suppository per vagina (2 mg tacrolimus per 2 gram supp) qhs  
Dispense 50  
Or 0.1% vaginal cream (compounded in a vaginal cream / Replens like base) 2-5 g = 2 - 5 mg/dose for 2 weeks then Mon-Wed-Fri for 2 weeks and slowly decrease Dispense 100 grams  
Vulvar medication Apply to skin bid Tacrolimus 0.1% ointment Available in 30 or 60 gram tubes  
Calcineurin inhibitors (steroid sparing)  
pimecrolimus (Elidel) 1% cream bid for mild LP  
topical tacrolimus (Protopic) 0.03%, 0.1% oint  
Note – can burn especially on raw areas  
Long term safety unknown |
<table>
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<tr>
<th>Less frequently used medications</th>
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| **Hydroxychloroquine** *(Plaquenil)*                                 | Occasionally used. Dose is 200 mg po bid.  
| **Retinoids**                                                       | There is no documented successful use of retinoids for vulvovaginal lichen planus. There is only personal experience with Acitretin *(Soriatane)*. It can work well in low dose 30-70 mg/week. *(Isotretinoin has been used to treat oral lichen planus; however, discontinuation of the medication results in recurrence of the oral lesions.)* Long-term use of retinoids may result in liver dysfunction, but not in the small doses recommended here. Liver function tests, cholesterol, triglycerides and complete blood cell counts should be monitored since laboratory changes are associated with the use of oral retinoids. Patients should be counseled concerning teratogenicity and need for optimal contraception. Acitretin is a strong teratogen that remains in the body for at least three months after the last dose. Topical retinoids *(tazarotene - Tazorac®)* are often too irritating for this vulvar condition but have been used.  
| **Cyclosporine**                                                    | Used topically and systemically. Topical cyclosporine provides a safe and often effective but very expensive alternative for mucous membrane disease. Pelisse et al. described the use of the oral or injectable form of the medication in 100 mg amounts directly to the affected skin four times a day initially. If several mucous membranes were affected for example, 100 mg was applied to the vulva, 100 mg inserted into the vagina, and 100 mg held in the mouth for as long as tolerated before spitting. As disease is controlled, the frequency of application can be tapered. Systemically it is dosed at 4-5 mg/kg/day for 3 months *(used in severe disease)*. Occasionally, in patients with debilitating and painful disease not adequately treated by therapies discussed above, oral cyclosporine may be used. This medication should be used only by health care providers experienced in its use.  
| **Cyclophosphamide**                                                 | Systemic antimitabolite  
| **Azathioprine**                                                    | Systemic antimitabolite  
| **Etanercept (Enbrel)**                                             | This is used SQ *(50 mg subcutaneously 2x/week until symptoms improve, then 25 mg 2x/week)*  
| **Mycophenolate mofetil** *(CellCept)*                              | Oral use 250mg -3 g/d in divided dose  
| **Methotrexate**                                                    | Oral or subcutaneous injection weekly. 7.5 to 15 mg oral or subcutaneously weekly using a 27 or 30 gauge needle. Need to give folate with this medication- 1 mg/d |
Lichen Planus and Surgery

For scarred LP of the vagina - post surgery information

I. For dilation:

Dilation is vital to keep the vagina open in patients with vaginal lichen planus. Patients need specific instructions on size of dilator and how to use dilators. They may need a set of dilators and can to buy the dilator set from www.vaginismus.com. Start with the largest size that will fit, determined by surgery. Leave the dilator in once or twice a day for 15-20 minutes. For lubricating the dilator use either Vaseline or mineral oil. Hydrocortisone acetate cream or Estrace 0.01% vaginal cream can be used later.

II. To stop inflammation:

If not too severe 2-3 days preoperatively use prednisone 15-30 mg/d AM, with food, plus topical steroid. Keep on prednisone for 1 week post operatively then taper slowly at 5 mg/week. Use with the topical steroid (see below).

For more severe disease consider using a dose of intramuscular triamcinolone 1mg/kg up to a total of 80mg/dose to be given two days after surgery and repeat this monthly for up to three months. Follow and assess her to see if she is going to need other long-term systemic medication, cyclosporine, mycophenolate, methotrexate, etc. Once she is healed she may need a systemic anti-inflammatory. The medication will depend on the case. These medications can be used with intermittent doses of IM triamcinolone, also depending on the case.

A. For the vagina

Two days after surgery, when the stent is removed, the patient needs to start dilating with Vaseline on the dilator twice a day. Dilators must be used nightly. In 1 to 2 weeks if healing then consider 10% hydrocortisone acetate in a vaginal cream 300mg (3g) to 500 mg (5gms) nightly for a week then gradually decrease weekly to 1-3gram Mon-Wed-Fri depending on response. (The compounded prescription is 10% hydrocortisone acetate in vaginal cream base 100 g with 2 refills) (Some providers start this high dose intravaginal steroid 48 hours after surgery, once the vaginal dilator is removed in the clinic). As a steroid sparer consider tacrolimus 2 mg compounded suppository nightly, or 0.1% tacrolimus compounded vaginal cream 2 grams/dose. Note – tacrolimus can cause a burning sensation. Use fluconazole 150 mg weekly to prevent yeast as needed.

B. For the vulva - to start two days after surgery, if not very eroded, topical clobetasol 0.05% ointment in a thin film PM. If eroded use plain Vaseline for 2 weeks and then restart clobetasol. If tolerated consider using tacrolimus 0.1% ointment twice a day as a steroid sparer note - as above, it can cause a burning sensation.
III Follow up- patient needs to be seen often for support and to adjust treatment. Avoid sexual intercourse until well healed with adequate size.

**Atrophic Vulvovaginitis**
Postmenopausal women not on estrogen replacement experience thinning of the vulvar and vaginal epithelium. They may also have thinning of the pubic hair and smoothness and thinning of the vulvar skin. The labia minora and majora lose substance and become more wrinkled; complete resorption of the labia minora occurs in some and may mimic the end stage of lichen sclerosus. Patients may be asymptomatic, but many are aware of a sensation of dryness that sometimes makes intercourse uncomfortable. Some patients complain of dysuria, urgency, and frequency as a result of atrophic urethritis. The diagnosis of atrophic vulvovaginitis is by clinical examination and a history of estrogen deficiency. Vulvovaginal atrophy from lack of estrogen can be seen with use of BCP, Depo-Provera, nursing etc. Atrophic vaginitis is suspected when parabasal cells and inflammatory cells are seen on wet prep in a symptomatic patient. Atrophic vulvovaginitis complicates all vulvovaginal conditions. Without estrogen the barrier functions are weaker and the tissues more susceptible to irritation from day to day hygiene practices, sexual activity etc. This can be further compounded by an already disrupted barrier in lichen sclerosus, lichen planus, even VIN. Estrogen topically and, if appropriate, systemically can make a big difference. Consider adding topical estrogen to the vulva 2 to 7 days/week for postmenopausal lichen sclerosus and lichen planus.

**CONTACT DERMATITIS**

Contact dermatitis is an inflammation of the skin resulting from an external agent that acts as an irritant or allergen. This reaction may be acute, subacute or chronic.

**Primary irritant contact** dermatitis results from prolonged or repeated exposure to a caustic or physically irritating agent. (e.g. urine, feces, soap residue) Anyone exposed to such a product often enough will have a reaction. This is a non-immunologic reaction. The skin is directly damaged. Top three causes –

1. Over-washing (some patients become obsessed with cleanliness and wash the area with soap and water multiple times each day, causing irritation. Some may become fixated on symptoms and even use harsh cleansers. Patients may remain secretive and not report these habits.)
2. Use of creams with drying bases
3. Wetness (urine, feces, menstruation)

**Allergic contact dermatitis** results from a frank allergic reaction, to a low dose of a substance (e.g. poison ivy, neomycin or benzocaine). This is a type IV delayed hypersensitivity reaction. Top three causes – Neomycin, benzocaine and preservatives.

**Note:** Irritant contact dermatitis is immediate; allergy takes 1-2 days.

Clinical Presentation: The same for both types of reactions

Varying degree of itch, burning and irritation; can be acute or chronic. With an irritant there is a history of repeated exposure, e.g. repeated use of soaps, cleansers, chronic incontinence. Allergic contact dermatitis can be more acute with sudden onset of symptoms of itching and burning that can be more intense. On physical exam there can be an acute blistered erosive eruption but most of the time there are subacute or chronic changes with evidence of
excoriation, honey colored crusting (with or without secondary infection) or just dryness, scaling and erythema. There may be altered pigmentation.

Diagnosis: Morphology of rash plus history of an irritant substance or an allergen. Biopsy may be needed to sort this out. To define allergic etiology, patch testing must be set up by a dermatologist or allergist.

TIPS ON VULVAR CONTACT DERMATITIS
1. Irritant contact dermatitis of the vulva is common. Factors that promote vulvar irritation with disruption of barrier function are:
   a. Lack of estrogen that causes the epidermal barrier to be weakened/thinned and less moist and pliable. The result if cracking/fissuring, etc.
   b. Overzealous hygiene with excessive washing with a washcloth or sponge using caustic soaps results in dry cracked and burned skin. Beware of the “dirty” vulva. Women are convinced that the area is dirty and needs to be scrubbed.
   c. Excess maceration of the area from:
      Sweat, urine, wet pads of any type results in irritation
      Incontinence is a hidden epidemic
      Note – urine and feces burn enzymatically and/or chemically
   d. Existing dermatoses, infection or tumors, e.g. lichen sclerosus, lichen planus, candidiasis are susceptible to irritants.
2. History of contactants may be difficult to elicit
3. Always stop all unnecessary vulvar contactants
4. Suspect allergic contact dermatitis with a sudden onset of intense itching and/or vesiculation and weeping
5. Always set up patch testing to rule out possible common allergens for patients with chronic or recurrent, poorly responsive vulvar dermatoses. Work with a dermatologist or allergist who can do the patch testing. The best screen is the North American Patch Test series (about 60 or more allergens) not the True Test Series as it may test for too few allergens – 25 to 35.
6. Reassess your vulvar patients for contact dermatitis as women commonly self-treat themselves to “wash away” or “clean up” their itchy or burning vulva. Contact dermatitis can complicate all vulvar conditions.

Treatment:
- Stop the irritant or allergen exposure
- Topical corticosteroids – clobetasol 0.05% or halobetasol 0.05% ointment bid x 5-7 days, then daily x 5-7 days (avoid long term use)
- Bland emollients such as petrolatum or mineral oil and nighttime use sedation for sleeping
- Antibiotics are needed for secondary infection – see lichen simplex chronicus above
- If very severe, prednisone 1 mg/kg decreasing over 14 – 21 days or 1 dose of triamcinolone acetonide IM 1 mg/kg (anterior thigh) (do not exceed 80 mg total IM)
Caution in patients with diabetes- high dose steroids can interfere with their glucose control.

Common Vulvar Irritants:
Soaps/cleansers
Medications -Trichloroacetic acid, 5FU
Sweat, urine, feces
Douches
Spermicides
Panty liners
Common Vulvar Allergens:
Benzocaine (Vagisil®)  Preservatives (parabens and propylene glycol)
Neomycin (Neosporin®)  Condoms – latex
Chlorhexidine (KY jelly®)  Lanolin
Perfume  Nail Polish
Some wipes and paper products contain the preservative
methylchloroisothiazolinone/methylisothiazolinone and this can cause an allergic contact dermatitis.

Severe Itch Scratch Itch Cycle Tips
1. Night time deep sleep with Elavil 25 mg po qhs 2 hr before bedtime; if needed can increase by 10 to 25 mg increments weekly, not to exceed 150 mg po qhs. Can also use neurontin (see protocol). Can also use atarax 25 to 50 mg po qhs.

2. Medrol dose pack vs prednisone 40 mg po q am x 5 then 20 mg po q am x 10. If those fail consider triamcinolone 1 mg/kg up to 80 mg IM using a 1.5 inch needle in buttock (gluteus muscle); repeat in 1 to 2 months if necessary, up to 3 times. There are rarely any problems with depression or emotional instability. It does take 48 hours to start working and it can cause irregular periods with spotting for the next month. The injection must be given into the muscle.

3. Cefadroxil 500 mg po bid x 10 days (to treat secondary inflammation)

4. Consider fluconazole 150 mg po weekly x 2 to 3 weeks

5. Cotton gloves at night

6. Nightgown without underwear versus cotton pajama pants c string

7. Tap water soaks in tepid water; after bath, vaseline or other white hand cream that does not pour, such as eucerin cream

8. For daytime itching can use a ssri such as citalopram 20-40 mg q am (don't use with elavil)

After 4 or 5 days, when the skin is not so raw, topical steroids can be used. Start clobetasol propionate ointment 0.05% qhs Disp 30 grams. Then decrease to triamcinolone acetonide ointment 0.1% qhs to bid.

If she is still itchy, add Protopic 0.03% or 0.1% alternating days with topical steroid.
TOPICAL CORTICOSTEROIDS
Learn three to four ointments of different strengths, making appropriate selections as needed
- ointments are stronger than creams
- ointments stay on longer than creams (creams are diluted and washed away with body fluids)
- ointments are less irritating and have fewer allergens than other bases
Patients may find one base more irritating than another. Be flexible.
Do not use steroids for dysesthetic vulvodynia - steroids work by reducing inflammation, not pain
Note: **Topical steroids are not a cure.** Use the steroid potency that will do the job in the quickest period of time and then decrease to a lower potency. Either stop or maintain with the lowest potency or use intermittently as necessary.

Tips: When considering topical corticosteroids, especially the superpotent types, consider:
- There are more available than you need
- Use them in an educated way
- Limit the amount prescribed to 15g to 30 grams for high dose topical steroids
- Show the patient exactly how to use it – a tiny dab spread in a thin film just to the involved area is all that is necessary
- Vulvar mucous membrane (vulvar trigone and inner labia minora) is remarkably steroid resistant. The outside of the labia minora and the labiocrural fold and the thighs will thin easily and develop striae.
- When the patient improves, decrease the frequency of topical steroid or manage with a low potency product.
- Use under close supervision.
- At any suggestion of secondary yeast infection, add a topical or oral anti-fungal.

For example, for thick itchy dermatoses like lichen simplex chronicus – use name brand clobetasol or halobetasol 0.05% ointment bid for 1-2 weeks, once a week for 1-2 weeks and then M-W-F for 1-2 weeks and for long term maintenance either infrequent and intermittent usage each week of the same or switch to intermittent use of a mild ointment such as 1% hydrocortisone in petrolatum or a 1% hydrocortisone / 1% pramoxine cream mix.

Effects of corticosteroids:
- Vasoconstriction – decrease erythema and swelling
- Decreasing fibroblastic proliferation thins out thickened dermal lesions
- Decreasing rapidly turning over keratinocytes thins out thickened epidermal lesions

Corticosteroid responsive vulvar dermatoses include:
- Thick and scaly (lichen sclerosus, lichen simplex chronicus, psoriasis, contact dermatitis)
- Blistering erosive disease
- Bullous diseases

Corticosteroid potency depends on:
- Cortisone molecule
- Concentration of steroid in vehicle
- Partition co-efficient of steroid vehicle system
- Application frequency and length of time used

**Caution:** steroids can be associated with irregular menses, increased BP, worsening of diabetes control, infection and glaucoma.
Table 1. Potency Ranking of Some Commonly Used Topical Corticosteroids

<table>
<thead>
<tr>
<th>Class</th>
<th>U.S. Brand Name</th>
<th>Generic name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super-high</td>
<td>Temovate® Cream, 0.05%</td>
<td>clobetasol propionate</td>
</tr>
<tr>
<td>Potency</td>
<td>Temovate® Ointment, 0.05%</td>
<td>clobetasol propionate</td>
</tr>
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<td></td>
<td>Temovate® E, 0.05%</td>
<td>clobetasol propionate</td>
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<td></td>
<td>Diprolene® Cream, 0.05%</td>
<td>betamethasone dipropionate</td>
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<tr>
<td></td>
<td>Diprolene® Ointment, 0.05%</td>
<td>betamethasone dipropionate</td>
</tr>
<tr>
<td></td>
<td>Diprolene® AF Cream, 0.05%</td>
<td>betamethasone dipropionate</td>
</tr>
<tr>
<td></td>
<td>Psorcon® Ointment, 0.05%</td>
<td>dflorasone diacetate</td>
</tr>
<tr>
<td></td>
<td>Ultravate® Cream, 0.05%</td>
<td>halobetasol propionate</td>
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<tr>
<td></td>
<td>Ultravate® Ointment, 0.05%</td>
<td>halobetasol propionate</td>
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<tr>
<td>II</td>
<td>Cyclocort® Cream, 0.1%</td>
<td>Amcinonide</td>
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<tr>
<td></td>
<td>Cyclocort® Ointment, 0.1%</td>
<td>acinonide</td>
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<tr>
<td></td>
<td>Diprosone® Ointment, 0.05%</td>
<td>betamethasone dipropionate</td>
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<tr>
<td></td>
<td>Florone® Ointment, 0.05%</td>
<td>dflorasone diacetate</td>
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<td>Lidex® Cream, 0.05%</td>
<td>flucinonide</td>
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<td>Lidex® Ointment, 0.05%</td>
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<td>Lidex-E® Cream, 0.05%</td>
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<td>Maxiflor® Ointment, 0.05%</td>
<td>dflorasone diacetate</td>
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<tr>
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<td>Maxivate® Ointment, 0.05%</td>
<td>betamethasone dipropionate</td>
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<tr>
<td></td>
<td>Topicort® Cream, 0.25%</td>
<td>desoximetasone</td>
</tr>
<tr>
<td></td>
<td>Topicort® Ointment, 0.25%</td>
<td>desoximetasone</td>
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<tr>
<td>III</td>
<td>Aristocort A® Cream 0.5%</td>
<td>triamcinolone acetonide</td>
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<td></td>
<td>Cutivate® Ointment, 0.05%</td>
<td>fluticasone propionate</td>
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<td>Diprosone® Cream, 0.05%</td>
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<td>Elocon® Ointment, 0.1%</td>
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<td>Florone® Cream, 0.05%</td>
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<td>Maxiflor® Cream, 0.05%</td>
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<td>Maxivate® Cream, 0.05%</td>
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<td>IV</td>
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<td>Cordran® Ointment, 0.05%</td>
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<td>Elocon® Cream, 0.1%</td>
<td>mometasone furoate</td>
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<td>Synalar® Ointment, 0.025%</td>
<td>fluocinolone acetonide</td>
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<td></td>
<td>Topicort LP® Cream, 0.05%</td>
<td>desoximetasone</td>
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<tr>
<td>V</td>
<td>Aristocort® Cream, 0.1%</td>
<td>triamcinolone acetonide</td>
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<td></td>
<td>Cordran® Cream, 0.05%</td>
<td>fluticasone propionate</td>
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<td></td>
<td>Cutivate® Cream, 0.05%</td>
<td>prednicarbate</td>
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<td></td>
<td>Dermatop® Emollient cream, 0.05%</td>
<td>triamcinolone acetone</td>
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<td>Kenalog® Cream, 0.1%</td>
<td>triamcinolone acetone</td>
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<td>Kenalog ointment, 0.025%</td>
<td>hydrocortisone butyrate</td>
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<tr>
<td></td>
<td>Locoid® Cream, 0.1%</td>
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<td>Synalar® Cream, 0.025%</td>
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<td>Valisone® Cream, 0.1%</td>
<td>betamethasone benzoate</td>
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<td>Uticort® Cream 0.025%</td>
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<td></td>
<td>Westcort® Cream, 0.2%</td>
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<td>Westcort® Ointment, 0.2%</td>
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<tr>
<td>VI</td>
<td>Aclovate® Cream, 0.05%</td>
<td>alclometasone dipropionate</td>
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<tr>
<td></td>
<td>Aclovate® Ointment, 0.05%</td>
<td>alclometasone dipropionate</td>
</tr>
<tr>
<td></td>
<td>Tridesilon® Cream, 0.05%</td>
<td>desonide</td>
</tr>
<tr>
<td>VII</td>
<td>Numerous preparations exist</td>
<td>Dexamethasone, flumethalone, hydrocortisone</td>
</tr>
<tr>
<td>Low Potency</td>
<td></td>
<td>Methylprednisolone, prednisolone</td>
</tr>
</tbody>
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ALTERNATIVES TO CORTICOSTEROIDS
Alternative topicals to corticosteroids are the Calcineurin inhibitors
Calcineurin inhibitors:
  Pimecrolimus 1% cream (Elidel)
  Tacrolimus 0.03 and 0.1% ointment (Protopic) or compounded 0.1% vaginal cream
  or a 2g suppository.
These are non-steroidal
Does not cause atrophy
May sting or burn initially when used topically
Equivalent to mild to moderate topical steroids – Pimecrolimus to a mild
topical steroid and tacrolimus equivalent to a moderate to strong
topical steroid.
These are topical immunosuppressants usually for maintenance of
  steroid responsive dermatoses
Note: there is a black box warning on these medications. This is because of reports of skin cancers and
lymphoma with systemic Calcineurin inhibitors used in organ transplant patients. This warning was also
imposed because of one manufacturer’s failure to conduct safety studies.
Note: Skin application results in minimal systemic exposure.
  Vaginal use can result in systemic absorption.

Side effects of Calcineurin inhibitors:
  Burn, sting
  Infection – worsening of HSV, HPV, tinea, molluscum contagiosum
Safety with regard to lichen sclerosus and squamous cell carcinoma? There are a
number of studies showing good results with this medication in
lichen sclerosus in adults and children. There are three reports of genital
squamous cell carcinoma
  with patients who have used tacrolimus and one with squamous cell
carcinoma on pimecrolimus.
Treatment of choice for lichen sclerosus is still superpotent topical steroids

For lichen plans that is difficult to treat with only partial control of topical steroids consider using
tacrolimus and pimecrolimus. The response reported is between 55 and 94%.

Summary of Calcineurin inhibitors:
  For lichen planus start with topical steroids and consider alternating with Calcineurin inhibitors.
  For lichen sclerosus with atrophy or reaction to topical steroids, consider usage, discuss the risks and
  follow carefully. No refills without follow-up vulvar exams.
  Consider for use in the following: vulvar dermatoses, psoriasis, Crohn’s, pemphigoid, etc.

Systemic corticosteroids can be useful at times. A full discussion is beyond this lecture.
IM triamcinolone acetonide (Kenalog 40) 1 mg per kg for an acute dermatosis (e.g. contact dermatitis or
severe lichen simplex chronicus). This can be repeated in 3-4 weeks once or twice to get a severe condition
under control. See appropriate monograph for all side effects of all corticosteroids and calcineurin
inhibitors.
  Caution in patients with diabetes- high dose steroids can interfere with their glucose control.
References

Overview


**Lichen sclerosus**


Lichen Simplex Chronicus and Contact Dermatitis


**Lichen Planus**


