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Perspective Chapter: Management of Pruritus Ani

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Abstract

Pruritus ani is a benign anorectal disorder characterized by an itching sensation of the perianal skin. It is a source of embarrassment and frustration for those who suffer from it. Multiple conditions can be responsible for perianal itching; however, most cases are idiopathic. Skin breakdown from constant scratching creates a vicious cycle exacerbating the symptoms. Empiric treatment resolves the problem in most cases, but additional testing should be performed when deemed necessary. Guided management to control associated diseases, lifestyle modifications, as well as skin protection, is paramount in the management.

Keywords: pruritus, itching, perianal skin, irritation

1. Introduction

Anal pruritus is an uncomfortable condition that often isolates patients and causes delays in seeking medical attention due to embarrassment. Pruritus ani is a benign condition defined as itching or burning sensation of the skin of the perianal region [1]. In many cases, multiple factors are implicated, making a precise diagnosis challenging. Typically, patients present after attempting home remedies and over-the-counter medications, compounded by embarrassment to discuss these symptoms with healthcare professionals. Undoubtedly, pruritus ani is an unpleasant sensation that can greatly impact the quality of life of affected patients. The incidence in the general population is estimated to be up to 5%, affecting men in a greater proportion compared with women (4:1 ratio). Commonly, diagnosis is made in the fourth to sixth decades of life, with a slow progression of symptoms that worsen particularly at night and in warm weather due to excessive moisture of the perianal area [2–4].

Depending on the degree of involvement of the perianal skin, pruritus ani can be localized or diffuse and classified into primary (idiopathic) or secondary (associated with other pathologies) [5]. Multiple conditions have been implicated in the etiology of pruritus ani, perianal eczema being the most common cause.

2. Pathophysiology and etiology

The differential diagnosis of pruritus ani comprises a long list of conditions that can be grouped into infectious, inflammatory, and neoplastic. Primary or idiopathic

pruritus ani accounts for more than half of cases (50–90%), and a variety of factors have been implicated in the pathophysiology (anatomic, dietary, hygienic, psychogenic, local irritants, and medications) [6]. However, fecal contamination and local skin irritation are the most common provoking factors. This phenomenon occurs by the activation of non-myelinated C-fibers in the epidermis and sub-dermis; though, the neurophysiological mechanisms behind the symptoms are much more complex. Scratching, although temporarily alleviates the itching sensation, is thought to produce inadequate feedback to inhibit further symptoms (*puritoceptive itching*). Therefore, avoiding scratching is key in the interruption of the vicious cycle of skin trauma, which is an additional stimulus for itching. In our practice, as part of routine interrogation and physical examination, we always inquire about products patients may have applied for symptomatic relief. Despite most patients denying fecal incontinence, many have some degree of leakage demonstrated during the examination of the perianal area and confirming the presence of stool.

<i>Infectious</i>
Bacterial
Fungal
Viral
Parasitic
<i>Dermatologic</i>
Psoriasis
Lichen planus, lichen simplex chronicus, lichen sclerosus
Contact dermatitis
Atopic dermatitis
Perianal psoriasis
<i>Systemic diseases</i>
Diabetes mellitus
Leukemia, lymphoma, polycythemia vera
Liver disease (hyperbillirubinemia)
Chronic renal failure
Thyroid disorders (hyperthyroidism)
<i>Anorectal diseases</i>
Benign
Hemorrhoids (internal and external)
Rectal prolapse (mucosal and full thickness)
Fissure
Fistula-in-ano
Diarrhea
Secreting villous tumors
Fecal soiling and incontinence
Skin tags
Perianal Crohn's disease
Hidradenitis suppurativa
Malignant
Anal canal and anal margin cancer
Rectal cancer
Bowen's disease
Perianal Paget's disease
<i>Miscellaneous</i>
Radiation-induced dermatitis
Vaginal discharge
Urinary incontinence

Table 1.
Secondary pruritus—causes.

Several foods have been associated with the production of perianal itching and are commonly excluded from the diet as part of the initial management. These *pruritogenic foods* include coffee, colas, citrus fruits, chocolate, tea, energy drinks, alcoholic beverages, tomato, and spicy foods. They act as irritants of the perianal skin and have also been implicated in altering bowel habits, stool consistency, and facilitating seepage. A comprehensive history and physical examination are critical in narrowing the diagnosis since in many cases both primary and secondary etiologies can be found.

Secondary pruritus should be considered in cases where an identifiable cause is found. The etiologies in this group are very broad and can be classified into five categories—infectious, dermatologic, systemic disease, benign and malignant anorectal diseases, and miscellaneous (**Table 1**) [2, 3].

2.1 Infectious

Among the infectious agents, sexually transmitted diseases are common causes of anal pruritus, particularly in patients practicing anoreceptive intercourse. The most common pathogens are *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and *Treponema pallidum*, but herpes infections, molluscum contagiosum, and condyloma acuminatum (human papillomavirus infection) are also encountered (**Figure 1**). Herpetic lesions are typically painful vesicles with associated perianal burning sensation, that after rupture can leave superficial skin ulcerations (**Figure 2**). We often receive referrals of patients with a history of anoreceptive intercourse, as well as a large population of Human Immunodeficiency Virus (HIV) positive patients with perianal irritation. In most of these cases, symptoms are caused by undiagnosed sexually transmitted diseases (STD). Symptoms usually resolve after appropriate treatment.

In children, it has been well reported that *Beta-hemolytic streptococci* are involved in many cases of perianal dermatitis, whereas *Staphylococcus aureus* is frequently implicated in refractory dermatitis in adults. *Corynebacterium minutissimum* is the causative agent of erythrasma, a superficial infection of the intertriginous skin often seen in warm weather [7]. Fungal infections account for 10–43% of secondary anal pruritus, with *Candida albicans* being the most common fungi identified [8]. Parasitic perianal infections are rare, but common parasites identified include *Enterobius vermicularis* (pinworms), *Sarcoptes scabiei* (scabies), and pediculosis pubis [2]. Nocturnal and post-defecation pruritus ani in children is a characteristic symptom of pinworms infection. We do not have experience with pruritus ani in children since our practice is limited to adults only.

2.2 Dermatologic

A wide variety of dermatologic conditions have been associated with pruritus ani; hence, a detailed history and physical examination are essential. Perianal eczema is the most common condition responsible for anal pruritus. It originates as contact dermatitis to certain hygiene products or medications used to treat other anorectal conditions, such as over-the-counter hemorrhoid ointments, deodorants, scented wipes or toilet paper, and soaps. Inquiry about anal hygiene habits and products used must be part of the history. These patients often have a history of other atopic conditions, such as asthma. We typically encounter patients presenting with eczema after weeks of using over-the-counter products, such as moist wipes, and ointments to treat hemorrhoids.

Figure 1.
Perianal condyloma acuminatum.

Figure 2.
Perianal herpes virus infection.

Atopic dermatitis is another common cause of pruritus ani, with an estimated frequency of 15–20% of the population [8]. Psoriasis is another skin problem associated with perianal pruritus, and although not as common, reports in the literature vary from 5 to 50% [8, 9]. Other less common dermatologic conditions that cause pruritus ani include seborrheic dermatitis, lichen planus, lichen sclerosus, and

lichen simplex chronicus. A high index of suspicion is necessary for an adequate diagnosis and treatment.

2.3 Systemic diseases

Multiple systemic diseases have been associated with pruritus ani. While the underline triggering mechanisms are not known, treating the primary problem appears to alleviate the symptoms. Diabetes mellitus is one of the common diseases associated with anal pruritus, followed by liver disease (cholestasis), leukemia, lymphoma, chronic renal failure (uremic pruritus), pellagra, iron deficiency anemia, vitamin A and D deficiency, and hyperthyroidism [2, 3, 8].

2.4 Anorectal diseases

Pruritus ani is commonly found in patients with numerous benign anorectal conditions, such as external and internal hemorrhoids (**Figure 3**), anal fissures and fistulas (**Figure 4**), hidradenitis suppurativa, perianal Crohn's disease, anal skin tags, and pilonidal disease. Symptoms can be caused by the disease itself, as well as from local skin irritation associated with fecal soiling, prolapsing tissue, mucus discharge, chronic drainage, etc. Perianal diseases commonly interfere with local hygiene, leading to skin irritation from residual fecal material. Management of the perianal condition is necessary and may improve symptoms, as it has been seen in patients with prolapsing hemorrhoids after hemorrhoidectomy [10]. One of the most common situations we encounter in our clinic are patients confusing pruritus ani with symptomatic hemorrhoids, driving many to self-medicate and worsen symptoms.

Malignant anorectal processes can also provoke pruritus ani and should be considered and ruled out when appropriate. Among these, diseases are anal canal

Figure 3.
Prolapse internal hemorrhoids. Courtesy of Arcila E, MD. Chicago, IL.

Figure 4.
Anorectal fistula with perianal dermatitis due to chronic drainage. Courtesy of Young D, MD. Chicago, IL.

Figure 5.
Squamous cell carcinoma of the anal margin.

and anal margin cancer (**Figure 5**), low rectal cancer, Bowen's disease, or perianal squamous cell carcinoma *in situ* (**Figure 6**), and Paget's disease or cutaneous adenocarcinoma *in situ*. In patients with premalignant perianal lesions, such as anal intraepithelial neoplasia (AIN) caused by human papillomavirus infection (HPV), pruritus ani can be caused by the anal condyloma itself rather than the presence of dysplasia. The most common extra-mammary area affected by Paget's disease is the perianal region, occurring more frequently in white women in the sixth decade of life. In these cases, further evaluation of the gastrointestinal, urinary, and

Figure 6.
Bowen's disease.

gynecologic systems is warranted, attributable to the high incidence of associated malignancy (33–86%) [11, 12].

2.5 Miscellaneous

Radiation-induced perianal dermatitis is an undesired side effect of cancer treatments. Multiple grading systems have been used to grade skin damage from radiation [13]. Regardless of the stage of dermatitis, from dry desquamation to breakdown and ulceration of the skin, many patients experience anal pruritus. Excessive moisture of the perianal skin from urinary incontinence or vaginal discharge is also associated with skin irritation and consequent pruritus ani. One of our hospitals is a high-volume center for the management of rectal and anal cancer. We often treat patients with sequelae of pelvic radiation, with fecal incontinence, perianal irritation, and consequent pruritus among the most common.

3. Evaluation and diagnosis

3.1 Clinical history

Patients with pruritus ani are often seen by a specialist after other treatments have failed, creating a challenge to establish a precise diagnosis. Clinical information, including presenting and associated symptoms, disease progression, co-morbidities, allergies, and medications, is warranted. Specifics about diet, sexual conduct, bowel habits, hygiene products and behaviors, and prior use of local agents should be part of the initial clinical encounter. History of atopia, anorectal disorders or surgeries, sexually transmitted

	Physical findings
Stage 0	Normal-appearing perianal skin
Stage I	Erythematous and inflamed perianal skin
Stage II	White, lichenified perianal skin
Stage III	Lichenified skin with coarse ridges and ulceration

Table 2.
The Washington hospital staging criteria.

diseases, among others, can aid in narrowing the differential diagnoses. During the initial interview, we focus on any potential triggers associated with the beginning of symptoms, instead of recent treatments that may have changed the course of the disease.

3.2 Physical examination

Inspection of the perianal area, perineum, and genitalia should be the first step of the physical examination. The examiner should look for erythema, blisters, ulcerations, maceration of the skin, residual fecal material, drainage, scratch marks, etc. If creams or ointments have been applied, they must be gently cleansed to expose the area for proper evaluation. In the early stages of the disease, no obvious abnormalities are found on the initial evaluation. A digital anorectal exam followed by a circumferential anoscopy should be performed to rule out anal canal conditions, however, any painful maneuvers should be avoided and, in most cases, these procedures are deferred until some of the pain and discomfort have subsided.

The Washington criteria, developed at the Washington Hospital Center, are commonly used to classify the severity of the pruritus ani based on clinical findings (Table 2) [8, 14]. In patients with Stage I disease, erythematous inflamed skin may be the only finding. In Stage II, there is lichenified perianal skin because of excessive itching and scratching or rubbing of the skin, resulting in thick leathery appearing skin. In addition to these changes, Stage III patients exhibit the presence of coarse ridges and ulceration of the affected skin. These staging criteria should be documented during clinic encounters, as it is useful for follow-up and evaluation of the response to treatment.

Microbiology testing should be performed based on the index of suspicion and clinical findings. To avoid misleading results, appropriate sample collection and specimens’ manipulation is essential. For example, when feasible, drainage, or secretions should be aspirated with a syringe and placed in a sterile container, viral cultures should be kept on ice for transportation, etc. In patients with diarrhea, bacterial stool cultures, as well as ova and parasites testing, must be included.

When considered appropriate, a more extensive endoscopic examination can be performed, including examination under anesthesia, flexible sigmoidoscopy, and colonoscopy with tissue sampling for biopsies and cultures. With non-healing skin lesions that persist despite appropriate treatment, a biopsy to rule out malignancy is indicated.

4. Management

The initial goal of management of patients with pruritus ani should be directed to the relief of symptoms, healing of impaired skin, and protection and prevention

of additional damage. In cases where a causative agent is identified (e.g., allergen and local irritant), further contact with the perianal skin must be avoided. Ultimately, treatment of underlying conditions in cases of secondary pruritus should lead to improvement of symptoms.

4.1 Education and lifestyle modifications

Particularly important in the management of idiopathic pruritus, a set of general strategies and recommendations should be implemented on the initial consultation. These changes are intended to restore the integrity of the perianal skin and prevent further damage when there is no underlying condition responsible for the symptoms. Patients should be instructed to avoid applying any home remedies, over-the-counter products, perfumed wipes, powders, lotions, soaps, etc. Education about gentle cleaning of the perianal area is also important, using water and unscented hypoallergenic soaps, followed by cool air-drying the area or by dabbing with toilet paper. We emphasize the importance of only applying creams and ointments prescribed by one member of our team. A proper balance between dryness and moist of the perianal area is vital. This can be achieved by placing a cotton ball or a makeup removal pad after cleaning, which will aid to keep the moisture of the zone balanced. Patients should also avoid tight-fitting underclothing and synthetic fabrics, especially in warm climates. Maintaining regular bowel habits is very important and controlling stool consistency may reduce the chances of stool leakage and soiling [8]. As part of the initial treatment, we regularly include a standard bowel regimen containing bulking agents, such as fiber supplements (usually powders to be dissolved in water) and stool softener when appropriate. Dietary recommendations for patients affected by pruritus ani have significant value; the elimination of the *pruritogenic foods* from the diet has shown significant improvement of symptoms in up to 48% of patients after 2 weeks (Table 3) [8, 15]. We routinely provide patients with a similar list of foods that can trigger or worsen symptoms and instruct them to avoid those at least for the first few weeks.

4.2 Topical agents

If there is persistent symptomatology after 2 weeks of uninterrupted proper treatment, special attention should be placed on excluding other etiologies of secondary

Caffeine-containing products
Colas
Coffee
Tea
Energy drinks
Citrus fruits and vegetables
Carbonated beverages
Chocolate
Tomato
Beer
Spicy and acidic foods
Refined carbohydrates
Nuts

Table 3.
Food products that contribute to pruritus ani symptoms.

pruritus. Only after infectious causes have been eliminated from the differential diagnosis, should topical steroids be considered for a limited time. Low-potency topical steroids such as hydrocortisone 1% are preferred as first-line treatment and have shown good results, by decreasing symptoms rapidly and consequently improving the quality of life [15]. The duration of therapy should not exceed 8 weeks since prolonged therapy or the use of potent steroids can be rather detrimental by causing skin atrophy and worsening of anal pruritus. Substance P is a neuropeptide that triggers itching and burning pain; Capsaicin decreases its levels, successfully treating the symptoms in up to 70% of patients when compared to placebo [16]. Topical steroids and capsaicin should be applied over clean and dry perianal skin in the morning and at night. After completion of therapy, this topical preparation should be replaced by a zinc oxide-based skin protectant, such as Calmoseptin® (Calmoseptine, Inc., Huntington Beach, CA). In our practice, we have noticed quick resolution of symptoms by applying vitamin petrolatum and lanolin-based ointments, such as those used in babies' diaper rash (A&D®, Bayer).

In rare cases of idiopathic pruritus ani, symptoms may persist and become intractable, despite all adequate treatment strategies, and after possible secondary causes have been excluded. Fortunately, for this small subset of patients, intradermal injection of methylene blue has been described with acceptable success [7, 8, 17]. Destruction of nerve terminations in the perianal area responsible for the symptoms is assumed as the mechanism of symptomatic relief. The technique description, including concentration and combination of drugs, varies slightly among reports. Full-thickness skin necrosis is a reported complication of this treatment [17, 18]. Our scant experience with this type of treatment has shown good results, however, when we need to use it, it is usually as a last resort.

5. Summary

Pruritus ani is a common benign anorectal condition that can be debilitating and frustrating for patients who suffer from it. A detailed clinical history and physical examination are of utmost importance to establish a diagnosis. When secondary pruritus is identified, the treatment should be tailored to the underlying condition. Biopsies, cultures, and other special testing methods should be performed when considered appropriate. Most of the cases improve with education and lifestyle modifications, such as cleansing habits and removing offending agents.

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