NODULAR PRURIGO: AN OVERVIEW OF DIAGNOSIS AND MANAGEMENT

Sheila Ryan

ABSTRACT
Nodular prurigo is a chronic inflammatory skin disease characterised by severe pruritus, nodules, papules, excoriations and ulceration. It is a can be a very distressing disorder for the sufferer. The condition is linked with a variety of disorders including atopic eczema, chronic renal failure, hyperthyroidism, iron deficiency anaemia, obstructive biliary disease, gastric malignancy, lymphoma, leukaemia, hepatitis B and C, HIV and depression. Nodular prurigo affects all ages and commonly occurs between the ages of 20 to 60 years. There are a range of treatments available for nodular prurigo, but their use is based on anecdotal rather than empirical evidence. The range of treatments will be discussed here. The nurse has an important role in guiding and supporting patients with this difficult, often frustrating condition.

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KEYWORDS
- Nodular prurigo
- Prurigo nodularis
- Chronic pruritus
- Reduce scratching
- Nurse support

KEY POINTS
Nodular prurigo is a chronic, severely pruritic skin condition. Treatments aimed at reducing pruritus and limiting scratching. Nurse has an important role in guiding and supporting patient with nodular prurigo.

Introduction
Nodular prurigo is a chronic inflammatory skin disease characterised by severe pruritus, nodules, papules, excoriations and ulceration. Dr James Hyde first described the condition in 1909, which reported pruritic nodules on the lower extremities in middle-aged women. The condition is also known as prurigo nodularis, Hyde’s disease, prurigo simplex chronicus, lichen obtusus corneus and nodular neurodermatitis circumscripta.

Aetiology
The cause of nodular prurigo is poorly understood. It is not clear whether the condition is solely the result of chronic scratching or a disease in itself. Nodular prurigo is associated with a variety of disorders including atopic eczema, chronic renal failure, hyperthyroidism, iron deficiency anaemia, obstructive biliary disease, gastric malignancy, lymphoma, leukaemia, hepatitis B and C and HIV. If nodular prurigo is solely as a result of scratching it is remarkable that it does not evolve in more patients with chronic pruritic conditions.

Nodular prurigo is also linked with psychiatric disorders including depression and anxiety. The relationship here is also unclear. There is debate within the literature whether there is an increased risk of developing nodular prurigo in psychiatric conditions. Notwithstanding, there is also evidence that while there is a higher

Table 1.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Associated diseases</th>
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<tr>
<td>Dermatological</td>
<td>Atopic eczema, psoriasis, bullous pemphigoid, linear IgA, scabies, T-cell lymphoma</td>
</tr>
<tr>
<td>Internal disorders</td>
<td>Anaemia, kidney disease, cholestatic disorders, diabetes, polycythaemia vera, HIV, hepatitis B and C, lymphoma and malignancies</td>
</tr>
<tr>
<td>Neurological</td>
<td>Notalagic paraesthesia, multiple sclerosis, brachioradial pruritus</td>
</tr>
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<td>Psychosomatic/psychiatric</td>
<td>Parastasis, depression, schizophrenia</td>
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incidence of psychiatric co-morbidities in individuals with nodular prurigo than healthy controls, the same incidence is seen when compared with patients with other pruritic dermatoses.\(^5\)

It is thought that there is a cascade of events in developing nodular prurigo.\(^1\) The condition starts with chronic and severe pruritus. This in turn induces mechanical trauma through scratching. This subsequently leads to the recruitment of a lymphocyte rich inflammatory infiltrate, tissue modelling and the activation as well as proliferation of peripheral nerves.\(^1\)

**Epidemiology**

Nodular prurigo affects both sexes equally. The commonest age is 20 to 60 years. However the condition does affect children.\(^6\) Nodular prurigo at a younger age is more commonly associated with atopic eczema.\(^4\)

**Clinical Presentation**

The patient will have a longstanding chronic pruritus.\(^7\) The patient will complain of an intense severe itch in the area affected by nodular prurigo. Nodular prurigo lesions are firm papules/nodules that are ≤2cm in diameter (Figure 1). The lesions may be warty, scaly, excoriated, or crusted, and may number from a few to hundreds (Figure 2).

Nodules often start as a red, itchy lump.\(^8\) Older lesions can be grey/purple in colour and are sometimes hyperkeratotic, or ulcerated (Figure 3).\(^1\) The skin between lesions is usually normal, but can be dry or lichenified.\(^8\) The lesions tend to be distributed symmetrically and affect the extensor surfaces of arms, legs.\(^8\) The back, abdomen, buttocks and posterior neck are also frequently affected.\(^4\) However the face, palms and flexural areas are rarely affected.\(^4\)

Typically, the middle back is spared as the patient often cannot reach this site.\(^1\) This is sometimes referred to as the butterfly sign and is a classic feature of nodular prurigo.\(^1\)

Nodular prurigo will rarely resolve spontaneously.\(^8\)

**Diagnosis and differential diagnosis**

The clinical features of nodular prurigo are usually sufficient for diagnosing the condition.\(^10\) The first step is to exclude any underlying disease and then to address cause of general pruritus.\(^10\) Potential investigations include:
Pruritus screen – full blood count, CRP, iron studies, urea and electrolytes, liver function tests, thyroid function tests, calcium and glucose. These investigations will help identify any underlying renal, liver, metabolic or infective cause. HIV, hepatitis B and C screen.

Patch testing to identify contact dermatitis.

Skin biopsy of lesions in atypical presentation.

In patients with severe disease, where a cause cannot be determined potential malignancy should be ruled.

The differential diagnosis for nodular prurigo includes dermatitis herpetiformis, scabies, lichen simplex chronicus, atopic eczema, allergic contact dermatitis, hypertrophic lichen planus, perforating disorders, neurotic excoriations and multiple keratoacanthomas, dermatofibroma.

Management

Nodular Prurigo is a difficult condition to treat. The evidence for the majority of treatments is based on anecdotal evidence rather than empirical studies. In the main treatments are aimed at reducing or stopping the itch scratch cycle.

General measures

Where there is an identified underlying associated cause, its management is often the best method of treating the nodular prurigo symptoms. Where this is not possible, treatments that alleviate pruritus or reduce scratching behaviour can be used to treat the nodular prurigo symptoms.

Simple measures such as advising the patient on keeping nails short, wearing cotton gloves and keeping bathing water temperature lukewarm are useful first steps. Advising the patient to limit exposure of pruritic skin to the air is also a useful tip. Nodular prurigo lesions are often more itchy when the skin is exposed. Also, when the skin is exposed, the pruritic areas are more accessible for scratching. Educating the patient on the role of scratching and the production of nodular prurigo lesions is of paramount importance. The nurse, as a skilled educator, has an important role in guiding and encouraging patients undergoing treatment.

Local treatments

There are a variety of local treatments. The advantage of a local treatment is the relative low toxicity. The disadvantage is they are often restricted to local disease and the time consuming nature of these treatments. These treatments include:

- Emollients. These should be used regularly to cool and moisturise the skin. This is especially important where there is underlying xerosis.

Dry skin is a well-known cause of pruritus. Therefore, patient education on soap avoidance and an effective emollient regime is important to reduce symptoms

- Menthol based creams or ointments. These can be helpful in some cases. These creams and ointments can cool the skin, but the effects are temporary. It is often best used in limited disease

- Capsaicin cream. This may also be effective, but it needs to be applied 4-6 times daily for at least 2 weeks and for up to 10 months. Capsaicin is made from chilli pepper and it induces a burning sensation initially before it helps with itch. Due to the frequency of application and the initial burning sensation it is most effective in limited disease

- N-acetylcysteine. This has recently shown to be effective in atopic eczema and other pruritic conditions such as nodular prurigo. It is available as an oral and topical medicine. Topically it is a N-acetylcysteine 10% in 5% urea. This formulation is malodorous with a sulphur smell. This odour can be improved with the addition of 1.5% lavender; orange or rosemary oil

- Topical steroids. These are useful in treating both localised and extensive nodular prurigo lesions. They generally need to potent (e.g. betamethasone valerate 0.1%) or very potent (e.g. clobetasol propionate) to be effective. However, their long-term use is limited due to the potential for skin atrophy. Steroid impregnated dressings (e.g. fluoroxy corticosteroid impregnated tape) can be used as it is both anti-inflammatory and protective. Its use is restricted to localised disease

- Intraleisional steroid injections (triamcinolone acetonide). These are useful in treating resistant localised lesions. They are anti-inflammatory and the lesion will usually flatten within weeks of treatment. If effective, treatment can be repeated at 4 weekly
intervals. However, the treatment is painful and is further limited by the potential for skin atrophy.

- **Occlusive dressings.** These limit access to the nodular prurigo lesions and are therefore an effective treatment option. They vary from hydrocolloid dressings (e.g. Duoderm), impregnated dressings (e.g. Viscopaste, Zipzoc) to wet wraps. Their effectiveness is increased when used with topical steroids.

- **Cryotherapy.** This is useful when it comes to treating isolated thickened lesions. It is thought to cause localised destruction of sensory nerves and thus reduce pruritic symptoms. A gentle freeze thaw cycle, e.g. 10 second single freeze, is often sufficient. This can be repeated at monthly intervals.

- **Phototherapy, narrow band UVB and PUVA.** These have also been shown to be effective in treating nodular prurigo. It is especially useful in treating extensive disease. It is thought that UV radiation has an antipruritic effect by inhibiting mast cells. The major disadvantage to this treatment is the difficulty in traveling for this hospital-based treatment.

- **Habit reversal.** This can be used in conjunction with all the above treatments or in isolation. It is a behaviour modification programme where the patient is taught not to respond by scratching to pruritus. The technique teaches the patient about the importance of optimising therapy, being aware of exacerbating factors and of their scratching behaviour. This increased awareness and knowledge then aids the patient in reducing their scratching.

**Systemic treatments**

The majority of systemic treatments are unlicensed for use in nodular prurigo. However, this does not make them ineffective.

**Systemic treatments include:**

- **Antihistamines.** Generally, sedating antihistamines are more effective than non-sedating in the management of nodular prurigo. The benefit of sedating antihistamines is that they help with sleep, which can be problematic in nodular prurigo.

- **Antidepressants.** Tricyclic antidepressants such as amitriptyline and doxepin have a beneficial anti-pruritic effect, which helps alleviate the symptoms of nodular prurigo. Both drugs are used at lower dosages than they are used in psychiatry. It is useful to explain to the patient that these drugs are being used for their beneficial effects on the nerve endings in the skin, rather than for their antidepressant properties.

- **Thalidomide** is effective in treating refractory nodular prurigo. However, the drug is notoriously sedating. Antidepressants such as amitriptyline and doxepin have a beneficial anti-pruritic effect, which helps alleviate the symptoms of nodular prurigo.

**Conclusion**

Nodular prurigo is a very distressing skin condition, which has a significant impact on an individual’s quality of life. It is strongly associated with a range of medical conditions, which cause chronic pruritus. This adds significantly to the difficulty in managing the condition. This problem is further propounded by the lack of robust research into treatment strategies.

Due to the complexity, it means there are a wide range of treatments available for the patient – and this can be difficult and confusing. The nurse has an important role in the management and treatment, and can guide the patient through the various treatment options as well as supporting the patient in managing this difficult condition.

**References**


