

## CORRESPONDENCE

**Year :** 2011 | **Volume :** 56 | **Issue :** 1 | **Page :** 119-120

Use of a ballpoint pen in the diagnosis of physical urticaria

Kiran V Godse

Shree Skin Centre and Laboratory, 21/22, L market, Sector 8, Nerul, Navi  
Mumbai 400 706, India

Date of Web            10-Mar-  
Publication            2011

### **Correspondence Address:**

Kiran V Godse

Shree Skin Centre and Laboratory, 21/22, L market, Sector 8, Nerul, Navi  
Mumbai  
India

**DOI:** 10.4103/0019-5154.77576

**PMID:** 21572812

Sir,

Physical urticaria encompasses a variety of conditions in which patients suffer from a chronic predisposition to develop localized or generalized urticaria or angioedema on contact with physical stimuli like mechanical, thermal or electromagnetic forces. The diagnosis of physical urticaria presents no major difficulties since patients are generally aware of the eliciting stimulus or give a suggestive history, and since the lesions can almost invariably be reproduced on appropriate testing. Reasons for the development of the disease, mostly in young adults, and for its spontaneous

resolution are, however, entirely unclear, as are the pathomechanisms in most cases. <sup>[1]</sup> Physical urticarias are responsible for approximately 20%-30% of cases of chronic urticaria. In a busy practice, the diagnosis of physical urticaria is often overlooked. If a patient has predominant physical urticaria, expensive investigations could be avoided with simple reassurance and antihistamines for control of physical urticaria.

Dermographism or "simple" dermographism, which has been noted in about 1.5%-5% of healthy individuals, is regarded as a normal physiological phenomenon. However, in symptomatic dermographism (SD), even light pressure or rubbing from clothes may provoke widespread weal-and-flare reactions with itching and burning. It is one of the dermatologic diseases that negatively impacts quality of life. <sup>[2]</sup>

We propose use of a ballpoint pen as a simple instrument in the diagnosis of dermographism and delayed physical urticaria. Interscapular region on the back is chosen to perform the test, as this area is less prone to friction and pressure. Patients should not be on antihistaminics or steroids for 48 h to prevent false negative test. Ballpoint pen with metallic body and empty refill is stroked on the back for approximately 2 in. Next to first stroke about one inch away firm pressure is employed with one hand on the pen and second line is stroked next to first line. Third line is stroked next to second line with firm pressure using both hands on the ballpoint pen. Erythematous wheal [\[Figure 1\]](#) appears within 6-7 min and fades in 15-30 min. Increasing pressure on pen helps to detect dermographism, which would have missed with traditional single stroke.



Figure 1: Dermographism on back

[Click here to view](#)

With same ballpoint pen, diagnosis of delayed pressure urticaria can be done. Ballpoint pen is pressed firmly with firm pressure of two hands on right scapular bone for 90 s. Delayed cutaneous erythema and edema with subcutaneous swelling is observed after 4-6 h by the patient and reported to physician. This is a simple test, which can be performed by a practicing dermatologist in the office without use of fancy instrument. Ideally dermographometer is to be used in the diagnosis of physical urticaria. This expensive instrument is not available in India. We have used simple ballpoint pen for the diagnosis of dermagraphism and delayed pressure urticaria. Pressure of hand is a variable in this test. Gradual increase of pressure by hand is useful to detect mild, moderate or severe dermographism.

Henz *et al.* have shown that in normal subjects 44.6% can react with an urticarial dermographism if a considerably increased pressure is used for testing. <sup>[3]</sup> Under every day conditions, these subjects however do not show any signs of urticaria. The prevalence of the physical urticarias varies in the literature. One reason for this is the fact that they depend on the strength of

the physical stimulus. <sup>[3]</sup>

In delayed-pressure urticaria, the typical lesions are deep, painful swellings developing 4-8 h after exposure to a vertical static pressure and persisting for 8-48 h. Typical areas involved are palms and soles as well as buttocks and the back when exposed to pressure, e.g., on a hard chair. <sup>[4]</sup>

Estes and Yung used a calibrated dermatographometer to reproduce lesions in two patients. They applied pressures of 48, 73, 103, 136, 200, and 234 g/mm<sup>2</sup> for 10 s to the abdomen, arms, back, and inspected the sites for up to 24 h. They showed a threshold whealing response of 136 g/mm<sup>2</sup> on the abdomen. By applying these pressures to the back for 5, 30, 60, 120, and 180 s, respectively, they demonstrated that the time needed to produce a whealing response was inversely proportional to the degree of pressure applied. <sup>[5]</sup> We have devised test for delayed pressure urticaria with sphygmomanometer and 2 kg weight. <sup>[6]</sup>

Use of ballpoint pen is simple, easy to use procedure, and dermatologist can use this procedure to detect dermatographism and delayed pressure urticaria.

#### ✦ References



- [1.](#) Henz BM. Antihistamines and alternatives in physical urticaria. *Dermatol Ther* 2008;13:392-9. <sup>↑</sup>
- [2.](#) O Ta°kapan, Y Harmanyeri. Evaluation of patients with symptomatic dermatographism. *J Eur Acad Dermatol Venereol* 2006;20:58-62. <sup>↑</sup>
- [3.](#) Henz BM, Jeep S, Ziegert FS, Niemann J, Kunkel G. Dermal and bronchial hyperreactivity in urticarial dermatographism. *Allergy* 1996;51:171-5. <sup>↑</sup>
- [4.](#) Zuberbier T. Urticaria. *Allergy* 2003;58:1224-34. <sup>↑</sup>
- [5.](#) Estes SA, Yung CW. Delayed pressure urticaria: An investigation of some parameters of lesions induction. *J Am Acad Dermatol* 1981;5:25-31. <sup>↑</sup>
- [6.](#) Godse KV. Diagnosis of delayed pressure urticaria. *Indian J Dermatol Venereol Leprol* 2006;72:155-6 <sup>↑</sup>