Review Article

Post Herpetic Abdominal Pseudohernia (PHAP)

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Post Herpetic Abdominal Pseudohernia is defined as the temporary paresis/paralysis of the segmental nerve/s of the abdomen resulting in a limited, mostly temporary, protrusion of the affected abdominal musculature giving rise to the phenomenon of "Pseudo Abdominal Hernia" known commonly as Post Herpetic Abdominal Pseudohernia (PHAP). It is important to consider HZ as a cause of unilateral segemental paralysis of the abdominal muscles , which resembles an abdominal wall hernia and is necessary for making a correct diagnosis so that unnecessary investigations and interventions can be avoided.The literature seems to be silent about patients needing surgical treatment for "Pseudohernia" Managing the bulge with a corset ,pain management and weight loss are the recommended treatment.

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Key words **: Herpes Zoster (HZ),Varicella Zoster Virus (VZV), Post Herpetic Abdominal Pseudohernia (PHAP), Post Herpetic Neuralgia (PHN), Acute Zoster Pain (AZP), Ramsay Hunt Syndrome (RHS).**

Herpes Zoster (HZ) is a transient disease caused by reactivation of latent neurotropic (DNA) Varicella Zoster virus (VZV) in spinal or cranial sensory ganglia. It may affect one or several adjacent dorsal roots. The virus, after initial infection at a young age, remains inactive for years to decades without causing any clinical problems.

The HZ (Fig 1) is characterised by a painful erythematous rash in the affected dermatome/s. Approximately, 20-30% of people will get HZ in their life time[1,2]. HZ is characterised by clustered maculopapular and vesicular lesions along a dermatome[3].

Risk factors include advancing age and a compromised Cell Mediated Immunity (CMI). Early diagnosis and treatment with antivirals shortens the severity and duration of the disease and its complications like Post Herpetic Neuralgia (PHN) etc.

The incidence of PHN, which is defined as persistent pain three months after the onset of HZ rash, has been reported to be 10-20%[4]. This pain can, however, last for several years. The pain, in acute stage, is associated with fatigue, insomnia and decreased social activities rendering the patient morbid and negative. Sensory loss and allodynia have been reported to be hallmark sign of PHN[5].

Editor's Comment :

- Post Herpetic Abdominal Pseudohernias should be diagnosed clinically, differential diagnosis with true hernia is essential by means of clinical and imaging techniques.
- Literature seems to be silent about requiring surgical treatment.
- Being an abdominal wall bulge without fascial defect and no true hernial sac, no risk of incarceration is present.
- Wearing a corset, weight loss and pain management are the treatment required.
- All the same we emphasize upon long term follow up of such cases till the pseudohernia completely disappears.
- The non-Herpetic neurological hernias ,may however, complicate and require surgery.

Pathophysiology :

Pathogenesis remains uncertain[6]. Generally after resolution of the primary infection with VZV, the virus remains latent in the Dorsal Root Ganglia and the Cranial Sensory Ganglia. When the CMI decreases, the virus replicates in the ganglia and subsequently spreads along the peripheral nerves to the skin leading to painful erythematous rash in the respective dermatome/s. Usually, the rash resolves in 7-10 days.

Replication of latent VZV in the sensory ganglia leads to the inflammatory neural damage resulting in Acute Zoster Pain (AZP) and Post Herpetic Neuralgia (PHN), an entity which remains the most common and nagging complication of the disease.

Spread of infection and inflammation from dorsal horn to the anterior horn results in motor complications causing temporary paresis of the segmental nerves. Motor deficit occurs in 1-5% of patients[7] giving rise to

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somatic and visceral complications.

Zaladonis *et al* postulated that about 5% of all patients of HZ will develop some form of Zoster Paresis/ Muscle Zoster[8] The commonest somatic manifestation is Ramsay Hunt Syndrome (RHS) - a rare neurological disorder characterised by paralysis of the facial nerve and a rash affecting the ear/mouth resulting in hearing loss, tinnitus, disturbances of balance and of lachrymal and nasal secretions in addition to some sensory abnormalities of hearing and taste (Geniculate ganglion involvement)[9]. Segmental paralysis of limbs, diaphragm and abdominal musculature may also occur. Visceral manifestations may involve GI tract and urinary bladder etc. resulting in pseudo-obstruction, voiding problems etc. In approximately 20% of cases, constipation and false bowel obstruction will occur owing to decreased intestinal motility from autonomic neuropathy[10].

The temporary paresis/paralysis of the segmental nerve/s of the abdomen results in a limited, mostly temporary, protrusion of the affected abdominal musculature giving rise to the phenomenon of "Pseudo Abdominal Hernia" known commonly as Post Herpetic Abdominal Pseudohernia (PHAP).

The first case report of a motor paresis following Herpes Zoster was published in 1866 by[11].

The phenomenon of pseudohernia was first described in 1936 by Loewe in the context of a local anaesthetic injection into the abdominal muscles of a guinea pig.

He postulated that pseudohernia was related to a sensory, rather than motor neuron defect and that the bulge resulted from an interruption in the reflex arc that maintained abdominal wall tension.

The onset of PHAP is rather abrupt and manifests itself in 2-3 weeks time of the appearance of rash and includes an abdominal bulge or protrusion in the region of classically affected dermatomes[6]. The pseudohernia is due to increase in abdominal pressure[13].

As a rule patients have a good prognosis with most having complete resolution within 18 months[14]. Reported that abdominal bulging occurred between 7 to 60 days (mean 24 days) after the onset of cutaneous rash.

Definition, Diagnosis :

Clinically the "PHAP" will be defined as an ipsilateral dermatome- related paretic (lower motor neuron) protrusion of abdominal wall/ musculature in corresponding myotome without any evidence of a muscular or aponeurotic defect or distruption. Relaxation of abdominal wall will cause it to bulge with any increase in intra-abdominal pressure. Diagnosis

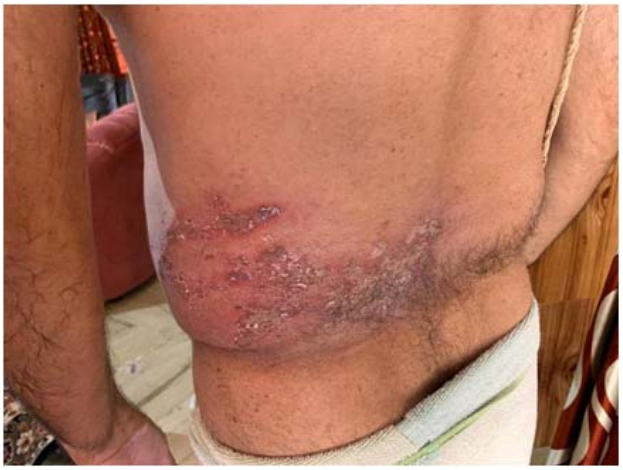


Fig 1 — Showing erythematous rash in the affected dermatome

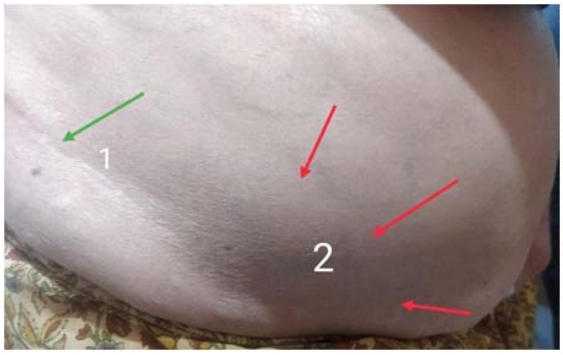
is primarily clinical, based on temporal correlation of HZ with the appearance of Abdominal bulge. A physical examination may reveal decreased or absent segemental reflexes. An electroneuromyographic study can be useful[15]. Abdominal tomography will show a thinned abdominal wall ruling out the presence of breach in muscles or aponeurosis and absence of a peritoneal sac. Gadolinium DTPA nuclear magnetic resonance imaging can help define extent of inflammation and exclude compression of spinal nerve roots[16]. Differential diagnosis with true hernia is essential by means of clinical and radiological examination as it is the one which does not require surgery and tends to disappear spontaneously within a year unlike a true abdominal hernia.

It is important to consider HZ as a cause of unilateral segemental paralysis of the abdominal muscles , which resembles an abdominal wall hernia and is necessary for making a correct diagnosis so that unnecessary investigations and interventions can be avoided[17].

Apart from HZ infection, a pseudohernia may also occur with variety of syndromes involving neuropathy or denervation including Diabetes Mellitus and following a trauma to nerves as after surgical operations, rib fractures etc[18]. Complete recovery in PHAP occurs in 6-12 months in 55-75% of cases[6]. There are reports of even higher (79.30%) recovery[19,20] reporting incidence of PHAP as 0-5%, also emphasised upon recognition of this entity to save costly consultations and evaluations. Pertinently, the authors recorded their patient as the 37th case of PHAP appearing in literature, till date.

The literature seems to be silent about patients needing surgical treatment for "Pseudohernia". Since, as a rule, an abdominal bulge represents the wall laxity

without facial defect and no true hernial sac, there is no risk of incarceration. However, abdominal cramping, pain, bloating, nausea, early satiety and poor cosmesis are frequently reported symptoms. Recommendations include wearing a corset to manage the bulge, weight loss and management of pain. Rarely in a long standing pseudohernia, the pouching effect may be so severe and deep as to entrap some abdominal viscera, presenting as a subacute or acute-on-subacute obstruction requiring operative interference (Fig 2 & 3).



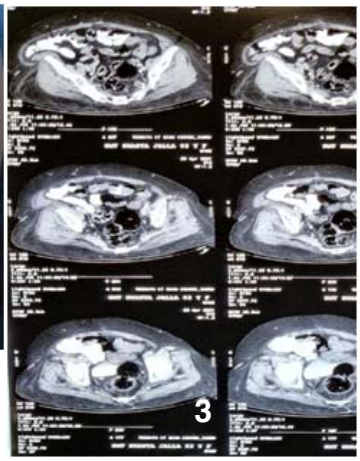


Fig 2 & 3 — Demonstrating pouching effect presenting as subacute or acute on subacute obstruction

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