

# Endocrinology and the arts at the feet of the dancing Lord: Parathyroid hormone resistance in an Indian icon

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### ABSTRACT

The dance of Siva has a cosmic appeal. Nowhere has this dance been crystallised in its pristine form as in the Nataraja Bronzes from the Chola period. Mysticism surrounds the dancing form of the Nataraja. But does Nataraja dance upon an endocrine mystery. Does the demon under his feet Apasmara literally forgetfulness or epilepsy have an endocrine disorder. The short limbed stocky eye popping dwarf with possible mental retardation with a name that suggests epilepsy throws open a host of endocrine diagnoses. From cretinism to the original descriptions of pseudohypoparathyroidism here is one view of the medical mystery under Shiva's dancing feet.

**Key words:** Shiva, Nataraja, Apasmara, epilepsy, cretinism, hypoparathyroidism, pseudohypoparathyroidism

He is an icon of India. His dance has inspired a million moves and countless songs. He is enshrined in what was India's first golden temple (Pon Ambalam). He is housed in a sanctum covered with 21,600 gold bricks signifying the number of breaths taken in a day nailed in place by 72,000 golden nails that signify the number of Nadis (channels of energy in the yogic system - Kundalini) in the body. The golden dome bequeathed by Parantaka Chola is held up by four pillars that signify the (four) Vedas, 64 beams that signify the (64) arts and is reached by five steps that signify the five lettered mantra of Shiva. In this sanctum steeped in symbolism dances the most enigmatic deity in the Hindu pantheon.<sup>[1]</sup> To millions of devotees the dance of bliss (Ananda Tandava) of the king of dances (Nataraja) is in the stage of consciousness (Chit-Ambalam - Chidambaram). In the sanctum sanctorum, the ethereal presence of Shiva is

manifested by an empty space signified by a festoon of 51 golden Bilva leaves (*Aegle marmelos*). The transformation of this cosmic manifestation into an icon is the most brilliant example of the bronze art perfected by the Cholas. The cosmic connection is underlined by the observation that the icon is a map of the Orion constellation as it existed around 800 AD (the later Chola period). Indeed Rudra the hunter and destroyer deified in the Rudra Prashant is the equivalent of Orion the hunter in Greek mythology.<sup>[2]</sup>

The bronze beauty of the dancing Nataraja belies description [Figure 1]; Auguste Rodin (1840-1917) described the Chola Bronze as une chose divinément reglée (decreed by divinity).<sup>[2]</sup>

Anand Coomarasamy tries this description: In his hair may be seen a wreathing Cobra, a skull and the mermaid figure of Ganga; upon it rests the crescent moon and it is crowned with a wreath of Cassia leaves. In his right ear, he wears a man's earring, a woman's in the left; he is adorned with necklaces and armlets, a jeweled belt, anklets, bracelets, finger and toe-rings. The chief part of his dress consists of tightly fitting breeches and he wears also a fluttering scarf and a sacred thread. One right hand holds a drum, the other is uplifted in the sign of do not fear: One left hand holds fire, the other points down upon the demon

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Muyalaka, a dwarf holding a cobra; the left foot is raised. There is a lotus pedestal, from which springs an encircling glory (Tiruvasi), fringed with flame and touched within by the hands holding drum and fire.<sup>[3]</sup>

As enamored as we are by the captivating beauty of the dancing lord, it is to his feet that I would like to divert your endocrine senses to. Shiva dances on a short dwarf - the demon called Apasmara. In Sanskrit Apasmara means forgetfulness - the medical connotation is important because in Ayurveda Apasmara also means epilepsy (smara - remember, Apasmara - forgetful epileptic fit). In Tamil, the name of the dwarf is muyalakan.<sup>[4]</sup> Epilepsy in Tamil is muyal vali because the person after an episode of convulsions breathes like a hare (muyal) that has caught the scent of a predator.<sup>[5]</sup>

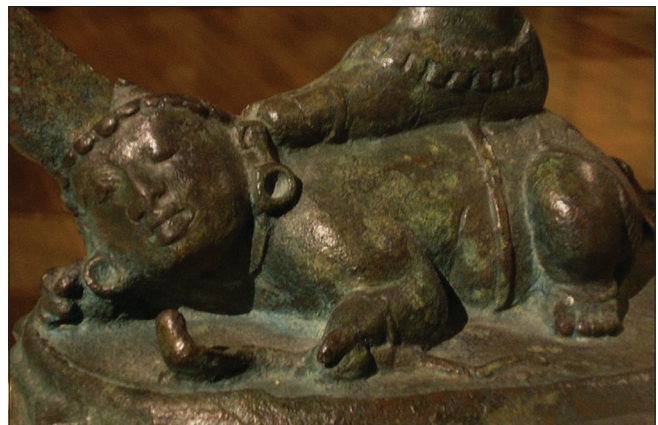
The story of Apasmara is somewhat varied in the various puranas. The story that intertwines closely with Nataraja is the Skanda Purana. In the Skanda Purana, the sages of the Deodar Forest perform rituals and start to think of themselves as gods. To humble these arrogant sages, Shiva takes the form of Bhikshatana – an attractive young beggar – and Vishnu becomes Mohini, his wife. While the sages fall for Mohini, the women wildly chase Shiva. When the sages regain their senses, they perform a black magic sacrifice, which produces a serpent, a lion, an elephant (or tiger) and a dwarf (Apasmara), all which attack Shiva, who overpowers them. Shiva then dances on the dwarf and takes the form of Nataraja, the Cosmic Dancer.<sup>[6]</sup> The same legend is retold in the Tamil Kovil Puranam and Kandha Puranam with some differences. This legend is also told in the Sthala Purana related to the Chidambaram Temple.<sup>[7]</sup> The ceiling of the Shivakamasundari shrine in the Nataraja temple complex illustrates this legend in a series of frescos.



**Figure 1:** Bronze Nataraja 11<sup>th</sup> century. This example from the Cleveland Museum of art is an approximation to the original at Chidambaram - which has never been photographed. Note Apasmara at the feet of Shiva

Apasmara himself is short stocky [Figure 2]. He has coarse features. Limbs are short. Fingers shorter with the feeling that he cannot make a fist. The eyes are large popping and the general impression is one of a dwarf of limited intelligence. As a student of endocrine symbology (with due to deference to Robert Langdon) I had initially thought that Apasmara represented congenital hypothyroidism with resultant cretinism with Shiva blasphemously representing the manic thyrotoxic dancing atop the poor cretin. But that appears naive. It is important to remember that in early Tamil and Sanskrit, people, gods and demons were named for a purpose. Since both the Sanskrit and Tamil names tell us that the trampled demon has convulsions the prerequisite for any speculation must be that Apasmara had epilepsy. For the endocrinologist that means that muyalakan had hypocalcemia of some degree. And the hypocalcemia and epilepsy must be associated with the dysmorphic features.

This condition is characterized by short, thick-set stature, rounded facies and anomalies of the metacarpals and metatarsals. The latter become manifest as abnormal shortening of one or more of the fingers or toes. Fingers are most commonly involved.<sup>[8]</sup> Sounds familiar? This is a description of pseudo hypoparathyroidism (PHP). PHP is historically the first hormone resistance syndrome and it was described for the first time in 1942 by Albright *et al.*<sup>[9]</sup> In an early series up to two-third of patients were reported to have epilepsy - grand mal for the most part.<sup>[10]</sup> Skin may be rough dry and the hair coarse and sparse with loss of eyebrows and eyelashes. Lenticular opacities are present and the teeth may have transverse ridges or not erupt at all. Mental retardation is present in the majority of patients. Obesity is also a specific feature of PHP. Interestingly and in concordance with my own naive views on Apasmara, almost all PHP-Ia patients present with



**Figure 2:** Apasmara. Note the short stature coarse features stocky short stubby hands and legs. Courtesy Wikimedia commons

thyroid stimulating hormone resistance, which usually becomes clinically manifest over childhood or adolescence but may occasionally present as hypothyroidism at neonatal screening as well.<sup>[11]</sup> Growth hormone (GH) deficiency due to resistance to GH-releasing hormone has also been reported in a large subset of these patients, this defect seeming more frequent in adults than in children.

PHP type 1 thus appears to be a plausible explanation to explain the forgetful epileptic. At the ethereal level that Nataraja trampling the demon epitomises the ability of knowledge to dispel wisdom. To this endocrine pedant, the motif is a reminder of the omnipotence of the endocrine system and the unique changes that small perturbations create.

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